



یوتھ ایجوکیشن اینڈ ویلفیئر سوسائٹی ناسک

YOUTH EDUCATION AND WELFARE SOCIETY'S

NATIONAL SENIOR COLLEGE

● Affiliated to the Savitribai Phule Pune University, Pune ● NAAC ACCREDITATION 'B' Grade
FACULTY : ARTS, COMMERCE, B.B.A., B.B.A. (CA) & B.Sc. (Computer Science)

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RELIGIOUS & LINGUISTIC MINORITY INSTITUTION

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Internal Quality Assurance Cells (IQAC)

Criterion I: Curricular Aspects

1.2.1. Number of Programs in which Choice Based Credit System/ Elective Course System has been implemented:

Response: 12

Supportive Documents Index

Sr. No.	Program Code	Program Name	Year of Introduction	Status of implementation of CBCS / elective course system (Yes/No)	Year of implementation of CBCS / elective course system
1.	24923	MA(Persian)	2019-2020	Yes	2022-2023
2.	24923	MA(Urdu)	2019-2020	Yes	2022-2023
3.	24923	MA(English)	2019-2020	Yes	2022-2023
4.	25023	M.Com	2019-2020	Yes	2022-2023
5.	25023	M.Com (Business Administration) (Elective Production and Operation Management, Financial Management, Business Ethics & Professional Value, Elements of Knowledge Management)	2019-2020	Yes	2022-2023
6.	25023	M.Com (Marketing Management) (Elective- Marketing Techniques, Consumer Behaviour, Customer Relationship Management & Retailing,	2019-2020	Yes	2022-2023

		Services Marketing)			
7.	11719	B.Sc. (BOTANY)	2019-2020	Yes	2022-2023
8.	11719	B.Sc. (CHEMISTRY)	2019-2020	Yes	2022-2023
9.	11719	B.Sc. (MATHEMATICS)	2019-2020	Yes	2022-2023
10.	11719	B.Sc. (PHYSICS)	2019-2020	Yes	2022-2023
11.	11719	B.Sc. (STATICSTICS)	2019-2020	Yes	2022-2023
12.	11719	B.Sc. (ZOOLOGY)	2019-2020	Yes	2022-2023

M. Mukherjee
IQAC CO-ORDINATOR
National Senior College
Nashik - 01



D. D. D.
PRINCIPAL
NATIONAL SENIOR COLLEGE,
Nashik.

M. A. (English-Part-I)
Credit and Semester system (CSS)
Implementation of Credit and Semester System at PG level
(w e f 2019-20)

1- The post-graduate degree will be awarded to students who obtain a total credit as follows

Sr.No	Name of the Faculty	Total credits	Average credits per semester
1	Faculty of Humanities	64	16

2- One credit will be equivalent to 15 clock hours of teacher-student contact per semester. There will be no mid-way change allowed from CSS to non-credit (external) system or vice versa.

3- Among the total number of credits required to be completed for degree course (64 credits) students have to opt for minimum 75% credits from parent Department and remaining 25 % can be opted from either parent Department or other Department/Centers/Faculty. In addition to that students have to obtain compulsory credits over and above.

Examination Rules

1- Assessment shall consist of a) In-semester continuous assessment and b) end semester assessment. Both shall have an equal weightage of 50 % each.

2- The teacher concerned shall announce the units for which each in-semester assessment will take place. However, the end-semester assessment shall cover the entire syllabus prescribed for the course.

3- An in-semester assessment of 50% marks should be continuous and at least two tests should be conducted for full course of 4 credits and a teacher must select a variety of procedures for examination such as:

i. Written Test and/or Mid Term Test (not more than one or two for each course)

ii. Term Paper;

iii. Journal/Lecture/Library notes;

iv. Seminar presentation;

v. Short Quizzes;

vi. Assignments;

vii. Extension Work;

viii. An Open Book Test (with the concerned teacher deciding what

books are to be allowed for this purpose)

or

ix. Mini Research Project by individual student or group of students

The concerned teacher in consultation with the Head of the PG Department shall decide the nature of questions for the Unit Test.

4- Semester end examination for remaining 50% marks will be conducted by the SPPU.

5- The student has to obtain 40 % marks in the combined examination of in Semester assessment and Semester-End assessment with a minimum passing of 30 % in both these separately.

6- To pass the degree course, a student shall have to get minimum aggregate 40% marks (E and above on grade point scale) in each course.

7- If a student misses an internal assessment examination he/she will have a second chance with the permission of the Principal in consultation with the concerned teacher. Such a second chance shall not be the right of the student.

8- Internal marks will not change. A student cannot repeat Internal Assessment. In case she/he wants to repeat internal assessment she/he can do so only by registering for the said courses during the 5th / 6th semester and onwards up to 8th semester.

9- Students who have failed semester-end exam may reappear for the semester end examination only twice in subsequent period. The student will be finally declared as failed if she\he does not pass in all credits within a total period of four years. After that, such students will have to seek fresh admission as per the admission rules prevailing at that time.

10- A student cannot register for the third semester, if she/he fails to complete 50% credits of the total credits expected to be ordinarily completed within two semesters.

11- There shall be Revaluation of the answer scripts of Semester-End examination but not of internal assessment papers as per Ordinance no.134 A & B.

12- While marks will be given for all examinations, they will be converted into grades. The semester end grade sheets will have only grades and final grade sheets and transcripts shall have grade points average and total percentage of marks (up to two decimal points). The final grade sheet will also indicate the PG Centre to which the candidate belongs.

Assessment and Grade point average

1- The system of evaluation will be as follows: Each assignment/test will be evaluated in terms of grades. The grades for separate assignments and the final (semester-end) examination will be added together and then converted into a grade and later a grade point average. Results will be declared for each semester and the final examination will give total grades and grade point average.

2- Marks/Grade/Grade Point

Marks	Grade	Grade Point
100 to 75	O: Outstanding	06
74 to 65	A: Very Good	05
64 to 55	B: Good	04
54 to 50	C: Average	03
49 to 45	D: Satisfactory	02
44 to 40	E: Pass	01
39 to 0	F: Fail	00

3- Final Grade Points:

Grade Points	Grade
05.00-6.00	O
04.50-04.99	A
03.50-04.49	B
02.50-03.49	C
01.50-02.49	D
00.50-01.49	E
00.00-00.49	F

M. A. (English) Part I (w.e.f. June 2019-20)

(Credit and Semester System-CSS)

Rationale for studying/teaching literature

- The rationale for studying Literature in English is that it primarily reinforces the guiding principles for education reform outlined in the UGC guidelines.
- The Literature component in English Curriculum provides learners with learning experiences to appreciate and enjoy literature, encourage self-expression and creativity, enhance their critical and analytical skills, improve their competence in the use of English, develop their cultural understanding as well as positive values and attitudes conducive to lifelong learning, and prepare them for further study or work.
- The aims of studying/teaching the Literature component in English curriculum are to enable learners to appreciate and enjoy a wide range of literary or creative texts and to appreciate other related cultural forms.
- The curriculum helps learners to develop a humanistic outlook on life. Through a close interaction with literary/creative works, which portray a range of human thoughts, emotions and experiences, learners gain knowledge and an understanding of the nature of human existence and of the world.
- The study of Literature has many practical advantages—it provides ample opportunities for learners to develop their creativity, sharpen their critical and analytical skills, and enhance their language proficiency.
- It broadens students' awareness of the general culture of different places where English is used and enhances their appreciation and understanding of culturally diverse societies.
- The intellectual, aesthetic and emotional qualities which learners develop by studying literature in English prepare them for further study or work, particularly in areas such as publishing and the media, where creativity, critical thinking and intercultural understanding are highly appreciated.

Rationale for studying English Language/Linguistics and English Literature: English has attained the status of a global language and it is being taught world over for various purposes. In India, English has always been an important language and it has also been a second language in our country. Its importance has increased further in the recent times when it began to be considered as a language of opportunities, a language that can enhance geographical and social mobility. Young people with a good command of English are in great demand in the IT-BPO sectors and in many other prominent domains of profession. A sound knowledge of the English language can also secure lucrative jobs in the world of media. A similar knowledge is a need for many students who seek to work as teachers in schools and centres of higher learning. While teaching English for communicative purposes is an important activity in schools and colleges, teaching/studying the language scientifically is an absolute necessity for those students who

specialize in the language at undergraduate and postgraduate levels. These students need to know the phonological, morphological, semantic and syntactic functioning of English. The course entitled Contemporary Studies in English Language aims to fulfil this need.

English was introduced in Indian educational institutions through the medium of English Literature. Since then, English Literature has enjoyed a prominent place in the curricula of various programmes offered at educational institutions. It has also had a positive impact on the literatures of many regional languages in India. Although the prominence of English Literature is being questioned now, it still needs to be taught for familiarizing learners with some of the outstanding writers of England, a country which had its sway over India for long years. Critically studying the works of such writers in the current postcolonial contexts should be rewarding since it would enable learners to understand and appreciate some of the literary and cultural features of each age in the history of British Literature. Such an attempt, more importantly, would necessarily enable the current generation of students, who are well-informed about the significance of their own individual and collective identities, to challenge the colonial assumptions underlying the texts and thus enunciate their own ideological positions.

Paper 1.1: English Literature from 1550 to 1798

1) AIMS AND OBJECTIVES

- 1) To introduce students to the major movements and figures of English Literature through a study of selected literary texts/pieces published during the period prescribed for study.
- 2) To enhance learners' literary sensibility and their emotional response to literary texts and to help them understand the thematic and stylistic preoccupations of the writers prescribed for study.
- 3) To enable them to critically examine the writers' thematic concerns and to point out the (in)significance of such concerns in the postcolonial context.
- 4) To help them recognize the distinctive ways in which the writers differed, in their ideological positions, from their counterparts belonging to different ages.
- 5) To provide learners some basic information about England's political, social and cultural developments during the period prescribed for study.
- 6) To enable them to critically assess the 'universal' values that writers tend to project in their writings.
- 7) To help learners apply the literary-critical principles they study in the paper 'Literary Criticism and Theory' to the texts prescribed or to any other text they read.
- 8) To explain to the learners the canonical relevance of the texts prescribed for them.
- 9) To help them identify potential areas of research on which they can work independently for securing a degree or merely for the sake of obtaining knowledge.
- 10) To enhance their proficiency in English

2) COURSE CONTENT Most of the texts/excerpts listed below are available online. Some of the online resources/sites are given under the section titled 'References.' Teachers and students must also consult standard editions of the texts for authenticity and accuracy.

Semester-I

Allotment of Credits: One credit is equal to 15 clock hours and every semester is allotted four credits (60 clock hours). This also includes the completion of the background to each period/age. The allotment is as follows:

- 1) Unit I:** Philip Sidney, Edmund Spenser, Walter Raleigh, Robert Herrick: **16 clock hours**
- 2) Unit II:** John Donne, Andrew Marvell, George Herbert, Edmund Waller- **18 clock hours**

3) **Unit III:** Christopher Marlowe: *Edward II*- **13 clock hours**

4) **Unit IV:** William Shakespeare: *The Tempest*- **13 clock hours**

Unit-I:

Sir Philip Sidney: The following lyric from *Astrophel and Stella*: ‘Come Sleep! O Sleep, the certain knot of peace’

Edmund Spenser: The following poem from *Amoretti*–“Ye tradefull Merchants that with weary toyle”

Sir Walter Raleigh: “The Lie”

Robert Herrick: “Delight in Disorder”

Unit-II

John Donne: i) “The Sunne Rising” ii) “Batter my heart, three-person'd God”

Andrew Marvell: “On Mr. Milton's Paradise Lost”

George Herbert: i)”Death” ii) “The Collar”

Edmund Waller: “Go, lovely Rose”

Unit-III

Christopher Marlowe: *Edward II*

Unit-IV

William Shakespeare: *The Tempest*

Paper – 2.1: English Literature from 1550 to 1798

Semester-II

Unit-I: John Milton: **12 clock hours**

Unit-II: John Dryden, Alexander Pope and William Blake **18 clock hours**

Unit-III: Richard Steele, Joseph Addison, Ben Jonson: **16 clock hours**

Unit-IV: Jonathan Swift: **14 clock hours**

COURSE CONTENT

Unit-1

John Milton: *Paradise Lost* (Book I)

Unit-II

John Dryden: *Mac Flecknoe*

Alexander Pope: *The Rape of the Lock* (Book I)

William Blake: i) “The Little Black Boy” (from *Songs of Innocence*) ii) “London” (from *Songs of Experience*)

Unit-III

Richard Steele: Fashionable Affectations

Joseph Addison: The Dream—An Allegory

Ben Jonson: *Volpone*

Unit-IV

Jonathan Swift: *Gulliver’s Travels*

3) SUGGESTIONS FOR TEACHERS

Teachers are expected to briefly discuss the literary background, movements, important writers and their works while teaching the papers. There will be a separate question on the background of the period mentioned in title of the two papers. The topics for this question will be like the rise of humanism, the rise of the sonnet sequence, Elizabethan drama, the University Wits, Shakespeare’s theatre and audience, Metaphysical poetry, the Neo-classical Age, the Romantic Movement, etc. These topics are suggested as examples only; teachers may discuss other relevant topics as well.

It will also be useful for the students if they are briefly introduced to the socio-political and historical conditions that prevailed in England during the periods mentioned in the title of the papers. The dominant literary tendencies and trends, the stylistic features of the authors prescribed for study, the major thematic concerns in the texts, etc. are also issues that can be discussed. Students are expected to read all the primary texts listed in the two papers. Teachers should encourage students to read histories of English Literature and some critical works/commentaries on each text and author.

ICT-based teaching, amply supported by classroom interaction, is strongly recommended. A careful use of PPTs should help learners prepare notes on the various themes of the texts and the characteristic features of the writings of the authors prescribed for study. Depending on the availability of time, film versions of the novels and plays (downloaded from YouTube, etc.) may be shown to students. Readings of poems, sometimes by the poets themselves, may also be played/shown.

Seminars, discussions and presentations in the classroom can be adopted as means to enhance the critical skills of learners. Each teacher is expected to be a teacher-researcher in the sense that s/he would be consistently monitoring her/his own teaching in order to identify the most suitable method(s) for her/his students in particular classrooms.

4) EVALUATION PROCEDURES The assessment of students' performance in tests, examinations, etc. will be done according to the guidelines issued by Savitribai Phule Pune University. The pattern of the question papers for semester-end examinations is attached separately to this document.

5) REFERENCES

Semester-I

A) ONLINE RESOURCES

[Teachers and students are also advised to consult standard editions of the texts for authenticity and accuracy of content]

Sir Philip Sidney "Come Sleep! O Sleep, the certain knot of peace"

[<https://www.poetryfoundation.org/poems/45160/astrophil-and-stella-39-come-sleep-o-sleep-the-certain-knot-of-peace>]

Edmund Spenser "Ye tradefull Merchants that with weary toyle"

[<https://www.poetryfoundation.org/poems/50048/amoretti-xv-ye-tradefull-merchants-that-with-weary-toyle>]

Sir Walter Raleigh "The Lie"

[<https://www.poetryfoundation.org/poems/50019/the-lie-56d22cb6afd43>]

Robert Herrick "Delight in Disorder"

[<https://www.poetryfoundation.org/poems/47285/delight-in-disorder>]

John Donne i) "The Sunne Rising" ii) "Batter my heart, three-person'd God"

[<https://www.poetryfoundation.org/poems/44106/holy-sonnets-batter-my-heart-three-persond-god>]

Andrew Marvell "On Mr. Milton's Paradise Lost"

[<https://poetry.princeton.edu/2008/12/09/on-mr-miltons-paradise-lost/>]

George Herbert i) "Death" ii) "The Collar"

[<https://www.poetryfoundation.org/poems/50703/death-56d22dfa49664>]
[<https://www.poetryfoundation.org/poems/44360/the-collar>]

Edmund Waller “Go, lovely Rose”

[<https://www.poetryfoundation.org/poems/50341/go-lovely-rose-56d22d5b33186>]

Christopher Marlowe *Edward II*

Marlowe, Christopher. *Edward II*. London: Nick Hern Books, 1997 (or any other standard edition).

William Shakespeare: *The Tempest*

Maqbool H. Khan (ed). *The Tempest*, Orient Blackswan: Hyderabad, 2001

GENERAL BACKGROUND

Ashok, Padmaja. *The Social History of England*. Hyderabad: Orient Blackswan, 2011 (rpt. 2018).

Ashok, Padmaja. *A Companion to Literary Forms*. Hyderabad: Orient Blackswan, 2015.

Borgohain, Pradipta. *Victorian Literature*. Hyderabad: Orient Blackswan, 2017.

Bowra, Maurice. *The Romantic Imagination*. OUP, 1950.

Bradbury, Malcolm and Ronald Carter. *The Routledge History of Literature in English: Britain and Ireland*. London: Routledge, 2001.

Brooks, Cleanth and Robert Penn Warren. *Understanding Poetry*. New York: Henry Holt and Co., 1944.

Buckley, J.H. *The Worlds of Victorian Fiction*. Cambridge, Massachusetts & London: Harvard University Press, 1975.

Chowdhury, Aditi, and Rita Goswami. *A History of English Literature: Traversing the Centuries*. Hyderabad: Orient Blackswan, 2014.

Day, A. *Romanticism*. New York: Routedge, 1996

Elsom, John. *Post-war British Theatre*. London: Routledge & Kegan, 1979.

Esslin, Martin. *The Theater of the Absurd*. Garden City, New York: Anchor Books, Doubleday and Company, Inc., 1961.

Frey, James E. *Romantic and Victorian Writers*. New York, 1963.

Hough, G. *The Romantic Poets*. London: Hutchinson & Co Ltd, 1953.

Houghton, Walter E. *The Victorian Frame of Mind: 1830-1870*. New Haven, Conn.: Yale University Press, 1957.

- Howarth, P. *British Poetry in the Age of Modernism*. New York: Cambridge University Press, 2005.
- Innes, Christopher. *Modern British Drama: 1890-1990*. Cambridge: CUP, 1992.
- Lumley, F. *Trends in Twentieth-Century Drama*. London: Barrie & Roekliff, 1967.
- Mukherjee, Sipra. *Modern English Literature 1890-1960*. Hyderabad: Orient Blackswan, 2016.
- Nayar, Pramod. *A Short History of English Literature*. New Delhi: CUP India, 2009.
- Parui, Avishek. *Postmodern Literatures*. Hyderabad: Orient Blackswan, 2018.
- Preyer, Robert, ed. *Victorian Literature*. New York: Harper & Row, 1966.
- Sanders, Andrew. *The Short Oxford History of English Literature*. Oxford: OUP, 1994.
- Tillotson, G. and Tillotson, K. *Mid-Victorian Studies*. London: Athlone Press, 1965.
- Watt, I. *The Victorian Novel*. London & New York: OUP, 1971.
- Welby, T.E. *The Victorian Romantics*. London: Frank Cass & Co., Ltd., 1966. (Reprint).
- Ward, Adolphus William and A. R. Waller. *The Cambridge History of English Literature*. Cambridge: CUP, 2013.

SECONDARY SOURCES

Philip Sidney

- Allen, M.J.B., Dominic Baker-Smith, and Arthur F. Kinney, eds. *Sir Philip Sidney's Achievements*. New York: AMS Press, 1990
- Buxton, John. *Sir Philip Sidney and the English Renaissance*. 3rd edn. London: Macmillan, 1987.
- Donow, H. S. *A Concordance to the Poems of Sir Philip Sidney*. Ithaca: NY, 1975.
- Duncan-Jones, Katherine. *Sir Philip Sidney: Courtier Poet*. London: Hamish Hamilton, 1991.
- Garrett, Martin, ed. *Sidney: The Critical Heritage*. London: Routledge, 1996.
- Hamilton, A.C. *Sir Philip Sidney: A Study of his Life and Works*. Cambridge: C.U.P., 1977.
- Kay, Dennis, ed. *Sir Philip Sidney: An Anthology of Modern Criticism*. Oxford: Clarendon Press, 1987.
- Kinney, Arthur F, ed. *Essential Articles for the Study of Sir Philip Sidney*. Hamden, Conn.: Archon, 1986.
- McCoy, Richard C. *Sir Philip Sidney: Rebellion in Arcadia*. New Brunswick: Rutgers University Press, 1979.

Norbrook, David. *Poetry and Politics in the English Renaissance*. London: Routledge and Kegan Paul, 1984.

Ringler, William A. Ringler, Jr, ed. *The Poems of Sir Philip Sidney*. Oxford: Clarendon Press, 1962.

Rudenstine, Neil L. *Sidney's Poetic Development*. Cambridge: Harvard University Press, 1967.

Edmund Spenser

Brown, Richard Danson. *The New Poet: Novelty and Tradition in Spenser's Complaints*. Liverpool University Press. 1999.

Carpenter, Frederic Ives. *A Reference Guide to Edmund Spenser*. University of Chicago Press. 1923.

Chamberlain, Richard. *Radical Spenser: Pastoral, Politics and the New Aestheticism*. Edinburgh University Press. 2005.

Cheney, Lauren & Silberman Patrick, ed. *Worldmaking Spenser: Explorations in the Early Modern Age*. University Press of Kentucky. 2000.

Cory, Herbert Ellsworth. *Edmund Spenser: A Critical Study*. University of California Press. 1917..

Cummings, R. M, ed. *Edmund Spenser: The Critical Heritage*. Barnes & Noble. 1971.

Morrison, Jennifer Klein & Matthew Greenfield, ed. *Edmund Spenser: Essays on Culture and Allegory*. Ashgate Publishing. 2000.

Nelson, William. *The Poetry of Edmund Spenser: A Study*. Columbia University Press. 1963.

Oram, William A. *Edmund Spenser*. Twayne. 1997.

Prescott, Anne Lake, and Andrew Hadfield, eds. *Edmund Spenser's Poetry*. Norton Critical Edition. 4th ed. New York: Norton, 2013.

Walter Raleigh

Stephen Greenblatt. *Sir Walter Raleigh: The Renaissance Man and his Roles*. Yale University Press. 1973.

Steven W. May. *Sir Walter Raleigh*. Twayne, 1989.

Nicholls, Mark and Penry Williams. *Sir Walter Raleigh: In Life and Legend*. Bloomsbury Publishing, 2011.

Rowse, A. L. *Sir Walter Raleigh: His Family & Private Life*. New York: Harper and Brothers, 1962.

Raleigh, Trevelyan. *Sir Walter Raleigh*. New York: Henry Holt & Company, 2004.

Willard, Wallace M. *Sir Walter Raleigh*. Princeton, NJ: Princeton University Press, 1959.

Robert Herrick

Coiro, Ann Baynes. *Robert Herrick's Hesperides and the Epigram Book Tradition*. Baltimore: Johns Hopkins University Press, 1988.

Deming, Roger H. *Ceremony and Art: Robert Herrick's Poetry*. Paris: Mouton, 1974.

Guibbory, Achsah. *Ceremony and Community from Herbert to Milton: Literature, Religion, and Cultural Conflict in Seventeenth-Century England*. Cambridge: Cambridge University Press, 1998.

Hageman, Elizabeth. *Robert Herrick: A Reference Guide*. Boston: G.K. Hall, 1983.

Rollin, Roger B. *Robert Herrick*. New York: Twayne, 1992.

Scott, George Walton. *Robert Herrick: 1591-1674*. New York: St. Martin's Press, 1974.

John Donne

Arthur F. Marotti. *Critical Essays on John Donne*. Boston: G K Hall, 1994.

Beer, Patricia. *An Introduction to the Metaphysical Poetry*. Macmillan Publishers: London, 1972.

Bennet, Joan. *Five Metaphysical Poets*. Cambridge: Cambridge University Press, 1966.

Bloom, Harold. *John Donne and the Seventeenth-Century Metaphysical Poets*. Pennsylvania: Chelsea House Publishing, 1990.

Cathcart, Dwight. *Doubting Conscience: Donne and the Poetry of Moral Argument*. Michigan: University of Michigan Press, 1975.

David L. Edwards. *John Donne: Man of Flesh and Spirit*. Michigan: William B. Eerdman Publishing, 2002.

Elizabeth, M. A. Hodgson. *Gender and the Sacred Self in John Donne*. Newark, Delaware: Univ of Delaware Press, 1999.

Gardner, Helen. ed. *The Metaphysical Poets*. London: Penguin Classics, 1967.

Gransden K. W. *John Donne*. Longmans, Green and Co., 1954.

Grierson, Herbert J.C. ed. *Metaphysical Lyrics & Poems of the 17th Century*. London: OUP, 1921.

Jeffrey Johnson. *The Theology of John Donne*. Suffolk, England: Boydell & Brewer, 2001.

Kermode, Frank. *Shakespeare, Spenser, Donne: Renaissance Essays*. New York: Viking Press, 1971.

Nutt, Joe. *John Donne: The Poems (Analysing Texts)*. London: Palgrave Macmillan, 1999.

Parker, Derek. *John Donne and His World*. London: Thames and Hudson, 1975.

Sharp, Robert Lathrop. *From Donne to Dryden: The Revolt Against Metaphysical Poetry*. NC: University of North Carolina Press, 1940.

Smith, A. J. and Catherine Phillips, ed. *John Donne : The Critical Heritage*. Routledge, 1996.

Winnie, James. *A Preface to Donne*. New York: Charles Scribner's Sons, 1970.

Andrew Marvell

Brett, R.L. ed. *Andrew Marvell: Essays on the Tercentenary of His Death*. New York : Published for the University of Hull by the Oxford University Press, 1979.

Craze, Michael. *The Life and Lyrics of Andrew Marvell*. London and Basingstoke, Macmillan, 1979.

Donno, Elizabeth S. ed. *Andrew Marvell: The Complete Poems*. London and Harmondsworth, England: Penguin Books, 1972.

Legouis, Pierre. *Andrew Marvell: Poet, Puritan, Patriot*. 2nd ed. London: Clarendon Press, 1965.

Leishman, J.B. *The Art of Marvell's Poetry*. London: Hutchinson University Library, 1972.

Mazzeo, J.A. *Renaissance and Seventeenth-Century Studies*. New York: Columbia University Press, 1964.

Mottram, Stewart. *Ruin and Reformation in Spenser, Shakespeare, and Marvell*. Oxford: Oxford University Press, 2019.

Patterson, Annabel. *Writers and their Works: Andrew Marvell*. (Liverpool: Liverpool University Press, 1994.

Summers, Claude J. & Peabworth, Ted-Larry, eds. *On the Celebrated and Neglected Poems of Andrew Marvell*. Missouri: University of Missouri Press, 1992.

George Herbert

Chute, Marchette, *Two Gentle Men: The Lives of George Herbert and Robert Herrick*. Dutton Books, 1959.

Clarke Elizabeth. *Theory and Theology in George Herbert's Poetry*. Oxford: OUP, 1997.

Di Cesare, Mario A. *A Concordance to the Complete Writings of George Herbert*. Ithaca, New York: Cornell Univ Press, 1977.

Eliot, T.S. *George Herbert*. Harlow: Longmans, Green & Co., 1962.

Guernsey, Julia Carolyn. *The Pulse of Praise: Form as a Second Self in the Poetry of George Herbert*. Newark: Univ of Delaware Press, 1999.

Harman, Barbara. *Costly Monuments: Representations of the Self in George Herbert's Poetry*. Cambridge, Massachusetts: Harvard Univ Press, 1982.

Hodgkins, Christopher. *Authority, Church, and Society in George Herbert: Return to the Middle Way*. Missouri: Univ of Missouri Press, 1993.

Miller, Edmund & Richard DiYanni. *Like Season'd Timber: New Essays on George Herbert*. Bern: Peter Lang Pub, 1988..

Summers, Joseph H. *George Herbert: His Religion and Art*. Cambridge, Massachusetts: Harvard Univ Press, 1954.

Edmund Waller

Allison, Alexander Ward. *Toward an Augustan Poetic: Edmund Waller's 'Reform' of English Poetry*. Lexington, Kentucky: University of Kentucky Press, 1962.

Chambers A. B. "Andrew Marvell and Edmund Waller: Seventeenth-Century Praise and Restoration Satire". *Rocky Mountain Review of Language and Literature*, Vol. 46, No. 1/2 (1992), pp. 69-71.

Chernaik, Warren L. "The Poetry of Limitation: A Study of Edmund Waller" *The Modern Language Review*, Vol. 65, No. 3 (Jul., 1970), pp. 598-599

Faull Arthur C. "The Musical Times and Singing Class", *Circular*, Vol. 38, No. 654 (Aug. 1, 1897), p. 557

Kemp, Harry. *The Bronze Treasury: An Anthology of 81 Obscure English Poets Together with Their Biographical Portraits*. New York: The Macaulay Company, 1927.

Christopher Marlowe

Bartels, Emily Carroll. *Critical Essays on Christopher Marlowe*. New Jersey: Prentice Hall, 1997.

Bloom Harold. *Christopher Marlowe*. Langhorne, PA: Chelsea House, 2000.

Burnett, Mark Thornton, ed. *Christopher Marlowe: The Complete Plays*. London: Dent, 1999.

Cheney, Patrick. "Recent studies in Marlowe (1987-1998)". *English Literary Renaissance*, Vol. 31, No. 2 (Spring 2001), pp. 288-328

Cheney, Patrick. *The Cambridge Companion to Christopher Marlowe*, Cambridge: CUP, 2004.

Cole, Douglas. *Suffering and Evil in the Plays of Christopher Marlowe*. New Jersey: Princeton Univ Press, 1962.

Cole, Douglas. *Christopher Marlowe and the Renaissance of Tragedy*. Connecticut: Greenwood Press, 1995.

Comensoli, Viviana. "Homophobia and the Regulation of Desire: A Psychoanalytic Reading of Marlowe's 'Edward II'". *Journal of the History of Sexuality*, Vol. 4, No. 2, Special Issue, Part 1: Lesbian and Gay Histories (Oct., 1993), pp. 175-200.

Cutts, John P. *The Left Hand of God: A Critical Interpretation of the Plays of Christopher Marlowe*. Haddonfield House, 1973.

Danson, Lawrence. "Continuity and Character in Shakespeare and Marlowe." *Studies in English Literature, 1500-1900*, Vol. 26, No. 2, Elizabethan and Jacobean Drama (Spring, 1986), pp. 217-234

David Riggs, *The World of Christopher Marlowe*. New York: Henry Holt, 2005.

Deats, Sara Munson. *Sex, Gender, and Desire in the Plays of Christopher Marlowe*. Newark, Delaware: Univ of Delaware Press, 1998.

Hopkins, Lisa. *Christopher Marlowe: A Literary Life*. Basingstoke, United Kingdom: Palgrave Macmillan, 2000.

Kelly, William B. "Mapping Subjects in Marlowe's 'Edward II'", *South Atlantic Review*, Vol. 63, No. 1 (Winter, 1998), pp. 1-19.

Masinton, Charles G. *Christopher Marlowe's Tragic Vision: A Study in Damnation*. Ohio: Ohio Univ Press, 1972.

Mills, L. J. "The Meaning of 'Edward II'", *Modern Philology*, Vol. 32, No. 1 (Aug., 1934), pp. 11-31.

Parks, Joan. "History, Tragedy, and Truth in Christopher Marlowe's 'Edward II'", *Studies in English Literature, 1500-1900*, Vol. 39, No. 2, Tudor and Stuart Drama (Spring, 1999), pp. 275-290.

Pearson, Meg F. "Die with fame": Forgiving Infamy in Marlowe's Edward II", *The Journal of the Midwest Modern Language Association*, Vol. 42, No. 2 (Fall 2009), pp. 97-120.

Ribner, Irving. "Marlowe's Edward II and the Tudor History Play", *ELH*, Vol. 22, No. 4 (Dec., 1955), pp. 243-253.

Ryan, Patrick. "Marlowe's 'Edward II' and the Medieval Passion Play", *Comparative Drama*, Vol. 32, No. 4 (Winter 1998-99), pp. 465-495

Stymeist, David. "Status, Sodomy, and the Theater in Marlowe's Edward II", *Studies in English Literature, 1500-1900*, Vol. 44, No. 2, Tudor and Stuart Drama (Spring, 2004), pp. 233-253

Tydeman, William & Vivien Thomas. *Christopher Marlowe: The Plays and Their Sources*, Oxfordshire: Routledge, 1994.

Wilson, Richard. *Christopher Marlowe*. Harlow, UK. Longman, 1999.

Wilson F.P. *Marlowe and the Early Shakespeare*. Oxford: Clarendon Press, 1953.

Willis, Deborah. "Marlowe Our Contemporary: "Edward II" on Stage and Screen". *Criticism*, Vol. 40, No. 4 (fall, 1998), pp. 599-622.

William Shakespeare

Abrams, Richard. "The Tempest and the Concept of the Machiavellian Playwright." *ELR* 8.1 (1978), 43-66.

Andrews, John G., ed. *William Shakespeare: His World, His Work, His Influence*. New York: Scribner, 1985.

Baker, Houston A, Jr. "Caliban's Triple Play." In *"Race," Writing, and Difference*. Ed. Henry Louis Gates, Jr. Chicago: U of Chicago P, 1986, 381-95.

Beckerman, Bernard. *Shakespeare at the Globe*. New York: Macmillan, 1962.

Berger Jr., Harry. "Miraculous Harp: A Reading of Shakespeare's Tempest." *Shakespeare Studies* 5 (1967), 153-83.

Bloom, Harold. *Shakespeare: The Invention of the Human*. New York: Riverhead, 1998.

Brokaw, Katherine Steele. "Ariel's Liberty." *Shakespeare Bulletin* 26.1 (2008), 23-42.

Brown, Paul. "This Thing of Darkness I Acknowledge Mine: The Tempest and the Discourse of Colonialism." In *Political Shakespeare: New Essays in Cultural Materialism*, ed. Jonathan Dollimore and Alan Sinfield. Ithaca and London: Cornell University Press, 1985.

Corfield, Cosmo. "Why Does Prospero Abjure His 'Rough Magic'?" *Shakespeare Quarterly* 36.1(Spring, 1985), 31-48.

Dean, Leonard F., ed. *Shakespeare: Modern Essays in Criticism*. New York: Oxford University Press, 1972.

Dobson, Michael, and Stanley Wells, eds. *The Oxford Companion to Shakespeare*. Oxford: Oxford University Press, 2001

Drakakis, John, ed. *Alternative Shakespeares*. London: Methuen, 1985.

Fuchs, Barbara. "Conquering Islands: Contextualizing The Tempest." *Shakespeare Quarterly* 48.1 (Spring, 1997), 45-62.

Gurr, Andrew. *The Shakespearean stage, 1574-1642*. 3rd edition. Cambridge: Cambridge University Press, 1992.

Hawkins, Sherman. "The Two Worlds of Shakespearean Comedy." *Shakespeare Studies* 3 (1968): 62-80.

Hunter, Robert G. *Shakespeare and the Comedy of Forgiveness*. New York: Columbia University Press, 1965.

Johanyak, D.L. *Shakespeare's World*. Upper Saddle River, NJ: Pearson, 2004.

Kermode, Frank. *The Age of Shakespeare*. New York: Modern Library, 2004.

Leininger, Lorie Jerrell. "The Miranda Trap: Sexism and Racism in Shakespeare's *Tempest*." In *The Woman's Part: Feminist Criticism of Shakespeare*. Ed. Carolyn Ruth Swift Lenz, Gayle Greene, and Carol Thomas Neely. Chicago: Univ. of Illinois Press, 1980, 285-94.

Mack, Maynard. *Everybody's Shakespeare*. Lincoln, NB: University of Nebraska Press, 1993.

McNee, Lisa. "Teaching in the Multicultural *Tempest*." *College Literature* 19/20, No. 3/1, Teaching Postcolonial and Commonwealth Literatures (Oct., 1992-Feb., 1993), 195-201.

Nixon, Rob. "Caribbean and African Appropriations of *The Tempest*." *Critical Inquiry* 13 (1987), 557-78.

Orkin, Martin. "Possessing the Book and Peopling the Text." In *Post-Colonial Shakespeares*, ed. Ania Loomba and Martin Orkin. London: Routledge, 1998.

Phialas, Peter G. *Shakespeare's Romantic Comedies: The Development of Their Form and Meaning*. Chapel Hill: University of North Carolina Press, 1966.

Seed, Patricia. "'This Island's Mine': Caliban and Native Sovereignty." *The Tempest and its Travels*. Eds. Peter Hulme and William H. Sherman. Philadelphia: University of Pennsylvania P, 2000, 202-211.

Vaughan, Virginia Mason and Alden T. Vaughan. *Shakespeare's Caliban: A Cultural History*. Cambridge: Cambridge University Press, 1991.

Semester II

ONLINE SOURCES

[Teachers and students are also advised to consult standard editions of the texts for authenticity and accuracy of content]

John Milton *Paradise Lost* (Book I)

<https://www.poetryfoundation.org/poems/45718/paradise-lost-book-1>

John Dryden *MacFlecknoe*

[<https://www.poetryfoundation.org/poems/44181/mac-flecknoe>]

Alexander Pope *The Rape of the Lock* (Book I)

[<https://www.poetryfoundation.org/poems/44906/the-rape-of-the-lock>]

William Blake i)“The Little Black Boy” (from *Songs of Innocence*) ii) London (from *Songs of Experience*)

[<https://www.poetryfoundation.org/poems/43671/the-little-black-boy>]

[<https://www.poetryfoundation.org/poems/43673/london-56d222777e969>]

Richard Steele Fashionable Affectations [from AS Cairncross. *Eight Essayists*. Chennai: Macmillan, 2002(rpt.)]. This book is available on Internet.

Joseph Addison The Dream—An Allegory (from AS Cairncross’ *Eight Essayists*)

Ben Jonson *Volpone* [Any standard edition]

Jonathan Swift *Gulliver’s Travels* [Any standard edition]

SECONDARY SOURCES

John Milton

Barker, Arthur E. (ed.) *Milton: Modern Essays in Criticism*. Oxford: OUP, 1965, [rpt.] 1968.

Benet, Diana Treviño, and Michael Lieb, ed. *Literary Milton: Text, Pretext, Context*. Pittsburgh, Pa.: Duquesne University Press, 1994.

Bloom, Harold. ed. *John Milton*. New York: Chelsea House Pub, 1986.

Broadbent, John (gen. ed.) *Cambridge Milton for Schools and Colleges*. Cambridge: CUP, 1972.

Broadbent, John. *John Milton: Introductions*. Cambridge, 1973.

Burrow, Colin. *Epic Romance: Homer to Milton*. Oxford, 1993.

Bush, Douglas (ed.) *The Complete Poetical Works of John Milton*. Boston, Houghton Mifflin, 1965.

Bush, Douglas. *John Milton: A Sketch of His Life and Writings*. London : Weidenfeld and Nicolson, 1964.

Campbell, Gordon and Corns, Thomas. *John Milton: Life, Work, and Thought*. Oxford: Oxford University Press, 2008.

Carey, John. *Milton*. London, 1969.

Cullen, Patrick. *Infernal Triad: The Flesh, The World and the Devil in Spenser and Milton*. Princeton, 1974.

Durham, Charles, and Kristin Pruitt McColgan, ed. *Spokesperson Milton: Voices in Contemporary Criticism*. London: Susquehanna Univ Press, 1994.

- Falconer, Rachel. *Orpheus Dis(re)membered: Milton and the Myth of the Poet-Hero*. Sheffield, 1996.
- Fish, Stanley. *Surprised by Sin: The Reader in Paradise Lost*. London, 1967. 2nd ed. Cambridge, 1998.
- Frye, Northrop. *The Return of Eden: Five Essays on Milton's Epics*. Toronto: University of Toronto Press, 1965, [rpt.] 1975.
- Hanford, James H., and James G. Taaffe. *A Milton Handbook*. 5th ed. New York, 1970.
- Kendrick, Christopher, ed. *Critical Essays on John Milton*. New York: GK Hall, 1995.
- Kermode, Frank (ed.) *The Living Milton: Essays by Various Hands*. London, 1960, 1967[rpt.].
- Le Comte, Edward. *Milton Re-Viewed: Ten Essays*. New York, 1991.
- Lewalski, Barbara K. *Milton's Brief Epic: The Genre, Meaning, and Art of Paradise Regained*. Providence, 1966.
- Martz, Louis (ed.) *Milton: A Collection of Critical Essays*. Englewood Cliffs, 1966. Rptd. 1986 as *Milton, Paradise Lost: A Collection of Critical Essays*.
- Miller, David M. *John Milton: Poetry*. Boston, 1978. Rptd. [CD] London, 1992.
- Patrides, C.A., ed. *Milton's Epic Poetry: Essays on Paradise Lost and Paradise Regained*. Harmondsworth, 1967.
- Patterson, Annabel (ed.) *John Milton*. New York, 1992.
- Potter, Lois. *A Preface to Milton*. Rev. ed. London, 1986.
- Rudrum, Alan (ed.) *Milton: Modern Judgements*. London, 1968.
- Stanwood, P G, ed. *Of Poetry and Politics: New Essays on Milton and His World*. Binghamton, 1995.
- Stein, Arnold S, ed. *On Milton's Poetry: A Selection of Modern Studies*. Greenwich, 1970.
- Wolfe, Don M. *Milton and His England*. Princeton, 1971.

John Dryden

- Anderson, Winn James. *John Dryden and His World*. Yale Univ Press, 1988.
- Bywaters, David A. *Dryden in Revolutionary England*. University of California Press, 1991.
- Doren Mark Van. *John Dryden: A Study of His Poetry*. Indiana University Press, 1960.
- Hamilton K. G. *John Dryden and the Poetry of Statement*. Michigan State Univ. Press, 1969.

Hammond, Paul & David Hopkins. *John Dryden: Tercentenary Essays*. Oxford Univ. Press, 2000.

Hopkins David. ed. *John Dryden Selected Poems*. London: Routledge, 2007.

Miner, Earl Roy. *Dryden's Poetry*. Indiana University Press, 1967.

Parfitt, G. A. & James Kinsley. *John Dryden: Selected Criticism*. Oxford University Press, 1999.

Ward, C.E. *Life of John Dryden*. Univ of North Carolina Press, 1961.

Winn, James Anderson. *John Dryden and His World*. New Haven: Yale UP, 1987

Winn, James Anderson.ed. *Critical Essays on John Dryden*. G K Hall, 1997.

Wykes, David. *A Preface to Dryden*. (Longman Group, 1977).

Zwicker, Steven N. ed. *The Cambridge Companion to John Dryden*. (Cambridge University Press, 2004).

Alexander Pope

Dobrée, B. *Alexander Pope*. London: Sylvan Press, 1951.

Frost, W.. "The Rape of the Lock and Pope's Homer". *Modern Language Quarterly*, 8(3), (1947) pp.342-354.

Hight, G. *The Anatomy of Satire*. Princeton, N.J.: Princeton University Press, 1962.

Hyman, S.. "The Rape of the Lock". *The Hudson Review*, 13(3), (1960), p.406.

Jack, I. *Augustan Satire*. Oxford: Clarendon Press, 1952.

Jackson, J. "Pope's the Rape of the Lock Considered as a Five-Act Epic." *PMLA*, 65(6) (1950), p.1283.

Parrott, T. *Pope's The Rape of the Lock and Other Poems*. New Jersey: Princeton University Press, 1906.

Rousseau, G. *Twentieth Century Interpretations of The Rape of the Lock*. Englewood Cliffs, N.J.: Prentice-Hall, 1969.

Thomas, C.. *Alexander Pope and his Eighteenth-century Women Readers*. Southern Illinois University Press, 1994.

Thomas, CT (ed.), *The Rape of the Lock*, Orient BlackSwan: Hyderabad 1989 (rpt. 2012)

Walls, K. "The Unveiling of the Dressing Table in Pope's *Rape of the Lock*", I.121. *Notes and Queries*, 53(2), (2006), pp.196-197.

Weinbrot, H. *Alexander Pope and the Traditions of Formal Verse Satire*. Princeton, N.J.: Princeton University Press, (1982).

William Blake

Adams, Hazard. *William Blake: A Reading of the Shorter Poems*. Seattle: University of Washington Press, 1963.

Altizer, Thomas J. J. *The New Apocalypse: The Radical Christian Vision of William Blake*. East Lansing: Michigan State University Press, 1967.

Beer, John. *Blake's Humanism*. Manchester: Manchester University Press, 1968.

Bloom, Harold. *Blake's Apocalypse: A Study in Poetic Argument*. 1963. Revised ed., Ithaca and London: Cornell University Press, 1971.

Bottrall, Margaret, ed. *Songs of Innocence and Experience: A Casebook*. London: Macmillan, 1970.

Clark, Steve, and David Worrall, eds. *Blake in the Nineties*. Basingstoke: Macmillan, 1999.

Damon, S. Foster. *William Blake: His Philosophy and Symbols*. Boston: Houghton Mifflin, 1924

Damrosch, Leopold. *Symbol and Truth in Blake's Myth*. Princeton: Princeton University Press, 1980.

Digby, George Wingfield. *Symbol and Image in William Blake*. Oxford: Clarendon Press, 1957.

Erdman, David V. *Blake: Prophet Against Empire: A Poet's Interpretation of the History of His Own Times*. Princeton: Princeton University Press, 1954; revised 1969; third ed. 1977.

Ferber, Michael. *The Social Vision of William Blake*. Princeton: Princeton University Press, 1985.

Frye, Northrop. *Fearful Symmetry: A Study of William Blake*. Princeton: Princeton University Press, 1947, 1968.

Gleckner, Robert F. *The Piper and the Bard: A Study of William Blake*. Detroit: Wayne State University Press, 1959.

Hirsch, E. D. *Innocence and Experience: An Introduction to Blake*. New Haven: Yale University Press, 1964.

Larrissy, Edward. *William Blake*. Oxford: Basil Blackwell, 1985.

Phillips, Michael, ed. *Interpreting Blake*. Cambridge: Cambridge University Press, 1978.

Rosenfeld, Alvin, ed. *William Blake: Essays for S. Foster Damon*. Providence: Brown University Press, 1969.

Rothenberg, Molly Anne. *Rethinking Blake's Textuality*. Columbia: University of Missouri Press, 1993.

Smith, Donald M. "Blake's Songs of Innocence and Experience and Eighteenth-Century Religious and Moral Verse for Children." *Essays in Arts and Sciences* 20 (1991): 1-16.

David V. Erdman. ed. *The Complete Poetry and Prose of William Blake*, with a commentary by Harold Bloom. Berkeley: University of California Press, 1982.

Thompson, E. P. *Witness Against the Beast: William Blake and the Moral Law*. Cambridge: Cambridge University Press, 1993.

Wicksteed, Joseph H. *Blake's Innocence and Experience: A Study of the Songs and Manuscripts*. London: Dent, 1928.

Richard Steele

Bertrand, A. Goldgar. *The Curse of Party: Swift's Relations with Addison and Steele*. University of Nebraska Press, 1961.

Cairncross, AS, ed. *Eight Essayists*. Chennai: Macmillan, 2002 [rpt.]

Knight, Charles A. *A Political Biography of Richard Steele*. Routledge, 2016.

Rae, Blanchard. *The Correspondence of Richard Steele*. Oxford University Press, 1941

Sherburn, George & Donald F. Bond. *The Restoration and Eighteenth Century (1660-1789)*

Tracy Chevalier, et al. *Encyclopedia of the Essay*. Fitzroy Dearborn, 1997

Walker, Hugh. *The English Essay and Essayists* J. M. Dent & Sons Ltd., 1915

Joseph Addison

Beljame, Alexandre. *Men of Letters and the English Public in the Eighteenth Century, 1660-1744: Dryden, Addison, Pope*. K. Paul, Trench, Trübner, 1948

Cairncross, AS, ed. *Eight Essayists*. Chennai: Macmillan, 2002 [rpt.]

Humphreys, AR. *Steele, Addison and Their Periodical Essays*. London: Longmans, Green, 1966.

Goldgar, Bertrand. *The Curse of Party: Swift's Relations with Addison and Steele* University of Nebraska Press, 1961.

Ben Jonson

Bamborough, J. B. *Ben Jonson*. New York: Humanities Press, 1970.

Barish, Jonas A. *Ben Jonson and the Language of Prose Comedy*. Cambridge (MA): Harvard UP, 1960.

- Barish, Jonas. "The Double Plot in *Volpone*." *Modern Philology* 51 (1953), 83-92.
- Barton, Anne. *Ben Jonson: Dramatist*. Cambridge: Cambridge UP, 1984.
- Beaurline, L. *Ben Jonson and Elizabethan Comedy: Essays in Dramatic Rhetoric*. San Marino (CA): Huntington Library, 1978.
- Bentley, Gerald E. *Shakespeare and Jonson: Their Reputations in the Seventeenth Century Compared*. Chicago, 1945.
- Blisset, William, Julian Patrick and R. W. Van Fossen, eds. *A Celebration of Ben Jonson*. 1973.
- Carr, Carol A. "Volpone and Mosca: Two Styles of Roguery." *College Literature* 8.2 (Spring, 1981).
- Chaplin, Gregory. "Divided amongst themselves': Collaboration and Anxiety in Jonson's *Volpone*." *ELH*, 69, (1) (Spring, 2002), pp. 57-81
- Gianakaris, C. J. "Identifying Ethical Values in *Volpone*." *The Huntington Library Quarterly* 32(1) (Nov., 1968), pp. 45-57.
- Kay, W. David. "Ben Jonson and Elizabethan Dramatic Convention." *Modern Philology* 76, No. 1 (Aug., 1978), pp. 18-28.
- Marshall, Geoffrey. "Comic Worlds within Worlds." *College English* 32.4, (Jan., 1971), 418-427.
- Maus, Katharine Eisaman. "Idol and Gift in *Volpone*." *ELR* 35 (2005), 429-453.
- Skulsky, Harold. "Cannibals vs. Demons in *Volpone*." *Studies in English Literature, 1500-1900*, 29 (2), Elizabethan and Jacobean Drama (Spring, 1989), pp. 291-308.
- Jonathan Swift**
- Alan, D. *Jonathan Swift and the Burden of the Future*. Newark: Univ. of Delaware Press, 1995.
- Boyle, Frank. *Swift as Nemesis: Modernity and Its Satirist*. Stanford: Stanford Univ. Press, 2000.
- Brady, Frank ed. *Twentieth-Century Interpretations of "Gulliver's Travels"* Englewood Cliffs, N.J.: Prentice-Hall, 1968.
- Case, Arthur E. *Four Essays on Gulliver's Travels*. Princeton: Princeton Univ. Press, 1945.
- Crook, Keith. *A Preface to Swift*. New York: Longman, 1998.
- Donoghue, Denis. *Jonathan Swift: A Critical Introduction*. Cambridge: Cambridge Univ. Press 1969.
- Eddy, W. A. *"Gulliver's Travels": A Critical Study*. Princeton: Princeton Univ. Press, 1923.

- Fabricant, Carole. *Swift's Landscape*. Baltimore: Johns Hopkins Univ. Press, 1982.
- Flynn, Carol Houlihan. *The Body in Swift and Defoe*. Cambridge: Cambridge Univ. Press, 1990.
- Forster, Jean-Paul. *Jonathan Swift: The Fictions of the Satirist*. Berne and New York: Peter Lang, 1991; revised 1998.
- Gravil, Richard. ed. *"Gulliver's Travels": A Casebook*. London: Macmillan 1974.
- Lock, F. P. *The Politics of Gulliver's Travels*. Clarendon: Oxford, 1980.
- Rawson, Claude *Gulliver and the Gentle Reader: Studies in Swift and Our Time*. London: Routledge, 1973; Atlantic Highlands, N.J.: Humanities Press, 1991.
- Rielly, Edward J. ed. *Approaches to Teaching Swift's "Gulliver's Travels"*. New York: Modern Language Association of America, 1988.
- Rosenheim, Edward. *Swift and the Satirist's Art*. Chicago: Univ. of Chicago Press, 1963.
- Steele, Peter. *Jonathan Swift: Preacher and Jester*. Oxford: Clarendon Press, 1978.
- Swaim, Kathleen. *A Reading of Gulliver's Travels*. The Hague: Mouton, 1972.
- Ward, David. *Jonathan Swift: An Introductory Essay*. London: Methuen, 1973.

Paper – 1.2: English Literature from 1798 to the Present

1) AIMS AND OBJECTIVES

- 1) To introduce students to the major movements and figures of English Literature through a study of selected literary texts/pieces published during the period prescribed for study.
- 2) To enhance learners' literary sensibility and their emotional response to literary texts and to help them understand the thematic and stylistic preoccupations of the writers prescribed for study.
- 3) To enable them to critically examine the writers' thematic concerns and to point out the (in)significance of such concerns in the postcolonial context.
- 4) To help them recognize the distinctive ways in which the writers differed, in their ideological positions, from their counterparts belonging to different ages.
- 5) To provide learners some basic information about England's political, social and cultural developments during the period prescribed for study.
- 6) To enable them to critically assess the 'universal' values that writers tend to project in their writings.
- 7) To help learners apply the literary-critical principles they study in the paper 'Literary Criticism and Theory' to the texts prescribed or to any other text they read.
- 8) To explain to the learners the canonical relevance of the texts prescribed for them.
- 9) To help them identify potential areas of research on which they can work independently for securing a degree or merely for the sake of obtaining knowledge.
- 10) To enhance their proficiency in English

2) COURSE CONTENT Most of the texts/excerpts listed below are available online. Some of the online resources/sites are given under the section titled 'References.' Teachers and students must also consult the print versions of the texts for authenticity and accuracy.

Allotment of Credits: One credit is equal to 15 clock hours and every semester is allotted four credits (60 clock hours). This also includes the completion of the background to each period/age. The allotment is as follows:

Semester-I

Unit-I: ST Coleridge, William Wordsworth: 14 clock hours

Unit-II: PB Shelley, John Keats, Felicia Hemans: **16 clock hours**

Unit-III: Mary Shelley: **15 clock hours**

Unit-IV: Jane Austen: **15 clock hours**

Unit-I

S. T. Coleridge: i) “Frost at Midnight”; ii) “Dejection: An Ode”

William Wordsworth: “Resolution and Independence”

Unit-II

P. B Shelley: “England in 1819”

John Keats: i) “Ode on a Grecian Urn” ii) “On First Looking into Chapman’s Homer”

Felicia Hemans: “The Bird's Release”

Unit-III

Mary Shelley: *Frankenstein*

Unit-IV

Jane Austen: *Persuasion*

Paper – 2.2: English Literature from 1798 to the Present

Semester-II

Unit I: Elizabeth Barrett Browning, Alfred Tennyson, Robert Browning: **12 clock hours**

Unit II: TS Eliot, WB Yeats, Siegfried Sassoon: **16 clock hours**

Unit III: Seamus Heaney, Anthony Thwaite, Kathryn Simmonds, Jean Rhys: **20 clock hours**

Unit IV: Tom Stoppard: **12 clock hours**

Unit-I

Elizabeth Barrett Browning: “The Cry of the Children”

Alfred Lord Tennyson: From *In Memoriam* “I envy not in any moods”

Robert Browning: “Among the Rocks”

Unit-II

T. S. Eliot: “Preludes”

W. B. Yeats: i) “Easter 1916” ii) “The Second Coming”

Siegfried Sassoon: “Counter-Attack”

Unit-III

Seamus Heaney: “Blackberry-Picking”

Anthony Thwaite: “Simple Poem”

Kathryn Simmonds: “Experience”

Jean Rhys: *Wide Sargasso Sea*

Unit-IV:

Tom Stoppard: *Rosencrantz and Guildenstern Are Dead*

3) SUGGESTIONS FOR TEACHERS

Teachers are expected to briefly discuss the literary background, movements, important writers and their works while teaching the papers. There will be a separate question on the background of the period mentioned in title of the two papers. The topics for this question will be like the Modernist movement, Poststructural ideas, contemporary British literature, etc. These topics are suggested as examples only; teachers may discuss other relevant topics as well.

It will also be useful for the students if they are briefly introduced to the socio-political and historical conditions that prevailed in England during the periods mentioned in the title of the papers. The dominant literary tendencies and trends, the stylistic features of the authors prescribed for study, the major thematic concerns in the texts, etc. are also issues that can be discussed. Students are expected to read all the primary texts listed in the two papers. Teachers should encourage students to read histories of English Literature and some critical works/commentaries on each text and author.

ICT-based teaching, amply supported by classroom interaction, is strongly recommended. A careful use of PPTs should help learners prepare notes on the various themes of the texts and the characteristic features of the writings of the authors prescribed for study. Depending on the availability of time, film versions of the novels and plays (downloaded from YouTube, etc.) may be shown to students. Readings of poems, sometimes by the poets themselves, may also be played/shown.

Seminars, discussions and presentations in the classroom can be adopted as means to enhance the critical skills of learners. Each teacher is expected to be a teacher-researcher in the sense that s/he would be consistently monitoring her/his own teaching in order to identify the most suitable method(s) for her/his students in particular classrooms.

4) EVALUATION PROCEDURES The assessment of students' performance in tests, examinations, etc. will be done according to the guidelines issued by Savitribai Phule Pune University. The pattern of the question papers for semester-end examinations is attached separately to this document.

5) REFERENCES

Semester I

ONLINE RESOURCES

[Teachers and students are also advised to consult standard editions of the texts for authenticity and accuracy of content]

S. T. Coleridge “Frost at Midnight” , “Dejection: An Ode

[<https://www.poetryfoundation.org/poems/43986/frost-at-midnight>]

[<https://www.poetryfoundation.org/poems/43973/dejection-an-ode>]

William Wordsworth “Resolution and Independence”

[<https://www.poetryfoundation.org/poems/45545/resolution-and-independence>]

P. B Shelley “England in 1819”

[<https://www.poetryfoundation.org/poems/45118/england-in-1819>]

John Keats “Ode on a Grecian Urn”; “On First Looking into Chapman’s Homer”

[<https://www.poetryfoundation.org/poems/44477/ode-on-a-grecian-urn>]

[<https://www.poetryfoundation.org/poems/44481/on-first-looking-into-chapmans-homer>]

Felicia Hemans “The Bird's Release”

<https://www.poemhunter.com/poem/the-bird-s-release/>

Mary Shelley *Frankenstein* [Any standard edition]

Jane Austen *Persuasion* [Any standard edition]

SECONDARY SOURCES

ST Coleridge

Barth, J. Robert. *The Symbolic Imagination*. New York: Fordham, 2001.

Beer, J. B., ed. *Poems by Samuel Taylor Coleridge*. New York: Alfred A. Knopf, 1991.

Beer, J. *Coleridge's Poetic Intelligence*. London: Macmillan, 1977.

Engell, James. *The Creative Imagination*. Cambridge: Harvard, 1981.

Hill, J. S. *A Coleridge Companion*. London: Macmillan, 1983.

Holmes, Richard. *Coleridge*. Oxford University Press, 1982.

Modiano, Raimonda. *Coleridge and the Concept of Nature*. Tallahassee: Florida State UP, 1985.

Muirhead, John H. *Coleridge as Philosopher*. New York: MacMillan, 1992.

Vallins, David. *Coleridge and the Psychology of Romanticism: Feeling and Thought*. London: Macmillan, 2000.

Watson, George. *Coleridge the Poet*. London: Routledge and Kegan Paul, 1966.

William Wordsworth

Bernard Groom, *The Unity of Wordsworth's Poetry*. New York: St, Martin's Press, 1966.

Danby, J. F. *The Simple Wordsworth*. London: Routledge & Kegan Paul, 1960.

Durrant, Geoffrey. *William Wordsworth*. New Delhi: Vikas Publishing House, 1979; first published by Cambridge University Press, 1969.

Gill, Stephen *William Wordsworth: A Life*. Oxford University Press, 1989

Gillingham, S. *William Wordsworth, Selective Poems*. London: York Press, 1999.

Mason, Emma *The Cambridge Introduction to William Wordsworth*. Cambridge University Press, 2010.

Sheats, Paul D. *The Making of Wordsworth's Poetry. 1785-1798*. Cambridge: Harvard University Press, 1973.

Williams, J. (Ed.). *New Casebooks: Wordsworth*. London: Macmillan Press Ltd. 1993.

PB Shelley

Angela, L. *Shelley and the Sublime: An Interpretation of the Major Poems*. London: Cambridge University Press, 1987.

Dowden, Edward. *The Life of Percy Bysshe Shelley*. London: Kegan, Paul, Trench, Trubner and Company, 1932.

Glover. A. S. ed. *Shelley: Selected Poetry, Prose, and Letters*. London: Nonesuch Press, 1951.

Hay, Daisy. *Young Romantics: the Shelleys, Byron, and Other Tangled Lives*, Bloomsbury, 2010.

Holmes, Richard. *Shelley: The Pursuit*. New York: E. P. Dutton, 1975.

Milton, W. *Shelley's Later Poetry*. New York: Columbia University Press, 1959.

Rogers, N. *Shelley at Work: A Critical Inquiry*. Oxford: Clarendon Press, 1956.

William, K. *Shelley's Style*. New York: Methuen Publishing House, (1984). .

John Keats

Bate, Walter Jackson. *John Keats*. New York: Oxford University Press, 1966.

Colvin, Sidney. *John Keats: His Life and Poetry, His Friends Critics and After-Fame*. London: Macmillan, 1917.

Coote, Stephen. *John Keats: A Life*. London: Hodder and Stoughton, 1995.

D'Avanzo, Mario. L. *Keats's Metaphors for the Poetic Imagination*. Durham, NC: Duke University Press, 1967.

De Almeida, Hermione. *Critical Essays on John Keats*. Boston: G. K. Hall, 1990.

Dickstein, Morris. *Keats and His Poetry: A Study in Development*. Chicago: University of Chicago Press, 1971.

Ende, Stuart A. *Keats and the Sublime* (New Haven: Yale University Press, 1976).

Evert, Walter. *Aesthetic and Myth in the Poetry of Keats*. Princeton. Princeton University Press, 1965.

Fogle, Richard Harter. *The Imagery of Keats and Shelley: A Comparative Study*. Chapel Hill: University of North Carolina Press, 1949.

Gittings, Robert. *John Keats*. London: Heinemann, 1968.

Gleason, John B. "A Greek Echo in Keats's 'Ode on a Grecian Urn'". *The Review of English Studies*. 42. 165 (Feb., 1991), pp. 78-80.

Hewlett, Dorothy. *A Life of John Keats*. New York: Barnes and Noble, 1950. 2nd ed.

Hill, John Spencer, ed. *Keats: The Narrative Poems* (London: Macmillan, 1983).

Hirsch, Edward, ed. *Complete Poems and Selected Letters of John Keats*. Random House Publishing, 2001.

Kerner, David. "The Problem of Evil in the 'Ode on a Grecian Urn'". *Texas Studies in Literature and Language*, 28. 3, Literature of the Nineteenth Century (FALL 1986), pp. 227-249.

Matthews, G. M., ed. *Keats: The Critical Heritage*. London: Routledge & Kegan Paul, 1971.

Mauro, Jason. The Shape of Despair: Structure and Vision in Keats's "Ode on a Grecian Urn" *Nineteenth-Century Literature*, 52. 3 (Dec., 1997), pp. 289-301.

O'Neill, Michael & Mahoney Charles, eds. *Romantic Poetry: An Annotated Anthology*. Blackwell, 2007.

Vendler, Helen. *The Odes of John Keats*. Belknap Press, 1983.

Felicia Hemans

Clarke, Norma. *Ambitious Heights: Writing, Friendship, Love—The Jewsbury Sisters, Jane Carlyle, and Felicia Hemans*. Routledge, 1990.

Cochran, Peter. "Fatal Fluency, Fruitless Dower: The Eminently Marketable Felicia Hemans." *Times Literary Supplement*, 21 July 1995.

Feldman, Paula R. "The Poet and the Profits: Felicia Hemans and the Literary Marketplace." *Keats-Shelley Journal* 46 (1997): pp148-76.

Feldman, Paula R. and Theresa M. Kelley, eds. *Romantic Women Writers: Voices and Countervoices*. University Press of New England, 1995.

Feldman, Paula R, ed. *British Women Poets of the Romantic Era*. The Johns Hopkins University Press, 2001.

Kelly, Gary. ed. *Felicia Hemans: Selected Poems, Prose, and Letters*. Broadview, 2002.

Leslie, Mary Isabel. *Felicia Hemans: The Basis of a Biography*, 1943

Lootens, Tricia. "Hemans and Home: Victorianism, Feminine 'Internal Enemies,' and the Domestication of National Identity." *PMLA* 109:2 (March 1994). pp238-253.

Mellor, Anne. *Romanticism and Gender*. Routledge, 1993.

Pettit, Claire. "Our sweet Mrs Hemans." *Times Literary Supplement*, 15 September 2000.

Ross, Marlon B. *The Contours of Masculine Desire: Romanticism and the Rise of Women's Poetry*. Oxford University Press, 1989.

Sweet, Nanora and Julie Melnyk, eds. *Felicia Hemans: Reimagining Poetry in the Nineteenth Century*. Palgrave, 2001.

Trinder, Peter W. *Mrs Hemans*. University of Wales Press, 1984.

Wilson, Carol Shiner, and Joel Haefner, eds. *Revisioning Romanticism: British Women Writers, 1776-1837*. University of Pennsylvania Press, 1994.

Wolfson, Susan J. ed. *Felicia Hemans: Selected Poems, Letters, Reception Materials*. Princeton University Press, 2005.

Wu, Duncan. *Romantic Women Poets: An Anthology*. Blackwell Publishing, 1997.

Mary Shelley

Baldick, Chris. *In Frankenstein's Shadow. Myth, Monstrosity, and Nineteenth-century Writing*. Oxford: Clarendon Press, 1987.

Behrendt, Stephen C. *Approaches to Shelley's Frankenstein*. New York: The Modern Language Association of America, 1992.

Florescu, R. *In Search of Frankenstein*. London: Robson Books Ltd., 1996.

Hindle, Maurice. *Mary Shelley. Frankenstein*. London: Penguin Books Ltd., 1994.

Makinen, Merja. *Feminist Popular Fiction*. Palgrave, 2001.

Mellor, K. A. *Mary Shelley, her Life, her Fiction, her Monsters*. Routledge, 1989.

Shelley, M. *Frankenstein*. London: Penguin group, 2012.

Shelley, Mary. *Frankenstein, or The Modern Prometheus*. New York: Oxford UP, [rpt.]1994.

Veeder, William. *Mary Shelley and "Frankenstein": The Fate of Androgyny*. Chicago: University of Chicago Press, 1986.

Jane Austen

Babb, Howard S. *Jane Austen's Novels: The Fabric of Dialogue*. Columbus: Ohio State University Press, 1962.

Bloom Harold. "Introduction" in *Jane Austen's Persuasion*. Philadelphia: Chelsea House, 2004.

Bradbrook, Frank W. *Jane Austen and Her Predecessors*. Cambridge: Cambridge University Press, 1966.

Brown, Julia Prewitt. *Jane Austen's Novels: Social Change and Literary Form*. Cambridge, MA: Harvard University Press, 1979.

Brownstein, Rachel M. "Getting Married: Jane Austen." *In Becoming a Heroine: Reading about Women in Novels*. New York: Viking Press, 1982. pp.79-134.

Butler, Marilyn. *Jane Austen and the War of Ideas*. Oxford: Clarendon Press, 1974.

Copeland, Edward and Juliet McMaster, eds. *The Cambridge Companion to Jane Austen*. Cambridge: Cambridge University Press, 1997.

Duckworth, Alistair M. *The Improvement of the Estate: A Study of Jane Austen's Novels*. Baltimore: Johns Hopkins University Press, 1971.

Duffy, Joseph M., Jr. "Structure and Idea in Jane Austen's *Persuasion*." *Nineteenth-Century Fiction* 8 (1954): 272-89.

Hardy, Barbara. *A Reading of Jane Austen*. New York: New York University Press, 1976.

Hart, Francis R. "The Spaces of Privacy: Jane Austen." *Nineteenth-Century Fiction* 30 (1975): pp. 305-33.

Hopkins, Robert "Moral Luck and Judgment in Jane Austen's *Persuasion*", in *Persuasion*, ed. Patricia Mayer Spacks. New York: W. W. Norton, 1995.

Litz, A. Walton. *Jane Austen: A Study of Her Artistic Development*. New York: Oxford University Press, 1965.

Morgan, Susan. *In the Meantime: Character and Perception in Jane Austen's Fiction*. Chicago: University of Chicago Press, 1980.

Neill, Edward. *The Politics of Jane Austen*. London: Macmillan; New York: St. Martin's, 1999.

Price, Martin. "Manners, Morals, and Jane Austen." *Nineteenth-Century Fiction* 30 (1974): 261-80.

Spacks, Patricia M. ed. *Persuasion* (Norton Critical Edition) W. W. Norton & Company (December 17, 1994)

Tave, Stuart M. & Anne Elliot, "Whose Word Had No Weight", in *Jane Austen's Persuasion*, ed. Harold Bloom. Philadelphia: Chelsea House, 2004.

Semester II

ONLINE RESOURCES

[Teachers and students are also advised to consult standard editions of the texts for authenticity and accuracy of content]

Elizabeth Barrett Browning "The Cry of the Children"

[<https://www.poetryfoundation.org/poems/43725/the-cry-of-the-children>]

Alfred Lord Tennyson from *In Memoriam* "I envy not in any moods" [Section 27]

[<https://www.poetryfoundation.org/poems/45336/in-memoriam-a-h-h-obiit-mdcccxxxiii-27>]

Robert Browning "Among the Rocks"

[<https://www.poetryfoundation.org/poems/43744/among-the-rocks>]

T. S. Eliot "Preludes"

[<https://www.poetryfoundation.org/poems/44214/preludes-56d22338dc954>]

W. B. Yeats “Easter 1916”

[<https://www.poetryfoundation.org/poems/43289/easter-1916>]

Siegfried Sassoon “Counter-Attack”

[<https://www.poetryfoundation.org/poems/57220/counter-attack>]

Seamus Heaney i) “Blackberry-Picking” ii) “Mid-Term Break”

[<https://www.poemhunter.com/poem/blackberry-picking-3/>]

[<http://www.ashcombe.surrey.sch.uk/legacy/Curriculum/english/GCSE/Y11/English>]

Anthony Thwaite “Simple Poem”

[<https://www.poemhunter.com/poem/simple-poem-3/>]

Kathryn Simmonds “Experience”

[<https://poetrysociety.org.uk/poems/experience/>]

Jean Rhys *Wide Sargasso Sea* [Any standard edition]

Tom Stoppard *Rosencrantz and Guildenstern Are Dead* [Any standard edition]

SECONDARY SOURCES

Elizabeth Barrett Browning

Bidney, Martin. *Patterns of epiphany: from Wordsworth to Tolstoy, Pater, and Barrett Browning*. Edwardsville: Southern Illinois University Press, 1997

Blake, Kathleen. *Love and the Woman Question in Victorian Literature: The Art of Self-postponement*. Brighton: Harvester, 1983.

Cooper, Helen. *Elizabeth Barrett Browning, Woman & Artist*. North Carolina: University of North Carolina Press, 1988.

David, Deirdre. *Intellectual women and Victorian patriarchy: Harriet Martineau, Elizabeth Barrett Browning, George Eliot*. London: Macmillan, 1987.

Dally, Peter. *Elizabeth Barrett Browning: A psychological Portrait*. Londres: Macmillan London, 1989.

Forster, Margaret. *Elizabeth Barrett Browning: a biography*. London: Chatto & Windus, 1988.

Hayter, Alethea. *Elizabeth Barret Browning*. London: Published for the British Council and the National Book League by Longmans, Green, 1965.

Kennedy, Judith, ed. *Victorian Authors and their Works*. Athens: University Press Ohio, 1991

Stone, Marjorie. *Women writers: Elizabeth Barrett Browning*. New York: St. Martin's Press, 1995

Mermin, Dorothy. *Elizabeth Barrett Browning: The Origins of a New Poetry*. University of Chicago Press, 1989.

Zonana, Joyce. "The embodied muse. Elizabeth Barrett Browning's Aurora Leigh and Feminist Poetics." *Tulsa Studies in Women's Literature* 8.2 (1989): 241-262.

Alfred Lord Tennyson

Buckley, Jerome H. *Tennyson: The Growth of a Poet*. Cambridge, MA: Harvard, 1960.

Colley, Ann C. *Tennyson and Madness*. Athens, GA: Georgia UP, 1983.

Dwilight, Culler A. *The Poetry of Tennyson*. New Haven & London: Yale Univ. Press, 1977.

Ebbatson, Roger. *Tennyson*. London: Penguin, 1988.

Hill, Robert W., Jr., ed. *Tennyson's Poetry*. New York: W.W.Norton, 1971.

Paden, W.D. *Tennyson in Egypt: A Study of the Imagery of His Earlier Works*. Lawrence, Kansas: University of Kansas Press, 1942.

Pitt, Valerie. *Tennyson Laureate*. London: Barrie & Rockliff, 1962.

Platzky, Roger. *A Blueprint of His Dissent: Madness and Method in Tennyson's Poetry*. Bucknell University Press, 1989.

Tennyson, Charles. *Alfred Tennyson* New York: Macmillan, 1949.

Thomson, Alastair W. *The Poetry of Tennyson*. London: Routledge, 1986.

Turner, Paul. *Tennyson*. Boston & London: Routledge & Kegan Paul, 1976.

Robert Browning

Clyde de L. Ryals. *The Life of Robert Browning*. Cambridge, MA: Blackwell Publishers, 1993.

Sutherland Orr. *A Handbook to the Works of Robert Browning*. London: G. Bell and Sons Ltd., 1937.

Harold Bloom, ed. *Bloom's Major Poets: Robert Browning*. Broomall, PA: Chelsea House Publishers, 2001.

Harold Bloom, ed. *Modern Critical Views: Robert Browning*. New York: Chelsea House Publishers, 1985.

Hawlin, Stefan. *A Complete Critical Guide to Robert Browning*. Routledge, 2001.

Maynard, John. *Browning Re-Viewed: Review Essays 1980-1995*. Peter Lang Publishing, 1998.

Shroyer, Richard J. & Thomas J. Collins. *A Concordance to the Poems and Plays of Robert Browning*. AMS Press, 1996.

T. S. Eliot

Ackroyd, Peter. *T.S. Eliot: A Life*. New York. Simon & Schuster, 1984.

Asher, Kenneth. *T. S. Eliot and Ideology*. Cambridge University Press, 1995.

Drew, Elizabeth. *T.S. Eliot: The Design of His Poetry*. New York: Charles Scriber's Sons, 1949.

Gardner, Helen. *The Art of T.S. Eliot*. London: Cresset Press, 1949.

Gray, Piers. *T.S. Eliot's Intellectual and Poetic Development, 1909-1922*. Brighton, 1982.

Madge V. M. *The Knight and the Saint: A Study of T. S. Eliot's Development*. Jaipur: Book Enclave, 2004.

Matthiessen, F. O. *The Achievement of T. S. Eliot*. Boston: Houghton Mifflin Company, 1935.

Maxwell, D. E. S. *The Poetry of T. S. Eliot*. Routledge & Keagan Paul, 1960.

Montgomery, Marion. "Memory and Desire in Eliot's 'Preludes'" *South Atlantic Bulletin*, 38. 2 (May, 1973), pp. 61-65.

Moody, A. David, ed. *The Cambridge Companion to T.S Eliot*. Cambridge University Press, 1994.

Raine, Craig. *T. S. Eliot*. Oxford University Press, 2006.

Smith, Grover. *T.S. Eliot and the Use of Memory*. Lewisburg, Pa, 1996.

Southam, B.C. *The Selected Poems of T.S. Eliot*. London and Boston: Faber and Faber, 1981.

Spender, Stephen. *Eliot*. Fontana Press, 1986.

Unger, Leonard. *T.S. Eliot: Moments and Patterns*. Minneapolis: University of Minnesota Press, 1966.

Williamson, George. *A Reader's Guide to T. S. Eliot: A Poem-by-Poem Analysis*. New York: Noonday Press, 1966.

W. B. Yeats

Ellmann, Richard. *Yeats: The Man And The Masks*. Norton, 1978.

Hone, Joseph. *W. B. Yeats: 1865-1939*. New York: The Macmillan Company. 1943.

Jeffares, A Norman. *A Commentary on the Collected Poems of W. B. Yeats*. Stanford University Press, 1968.

Jeffares, A. Norman. *The Poetry of W. B. Yeats*. New York: Barron's Educational Series, 1961

Pritchard, William H. *W. B. Yeats: A Critical Anthology*. Penguin, 1972.

Rajan, Balachandra. *W. B. Yeats: A Critical Introduction*. London: Hutchinson and Company, 1965.

Sherrard, Phillip. *W. B. Yeats and the Search for Tradition*. Ipswich: Colgonooza Press, 1975.

Sleden, Morton Irving. *William Butler Yeats: The Poet as Mythmaker*. Michigan State University Press, 1962.

Stock, A. G. *W. B. Yeats: His Poetry and Thought*. Cambridge: University Press, 1961.

Tuohy, Frank. *Yeats*. London: Macmillan, 1976.

Unterecker, John. *A Reader's Guide to William Butler Yeats*. New York: The Noonday Press, 1964.

Wilson, F. A. C. *W. B. Yeats and Tradition*. New York: The Macmillan Company, 1958.

Zwerdling, Alex. *Yeats and the Heroic Ideal*. London: Peter Owen, 1965.

Siegfried Sassoon

Campbell, Patrick. *Siegfried Sassoon: A Study of the War Poetry*. McFarland. 1999.

Hemmings, Robert. *Modern Nostalgia: Siegfried Sassoon, Trauma and the Second World War*. Edinburgh University Press. 2008.

Moeyes, Paul. *Siegfried Sassoon, Scorched Glory: A Critical Study*. Macmillan. 1997.

Roberts, John Stuart. *Siegfried Sassoon*. Richard Cohen Books. 1999

Thorpe, Michael. *Siegfried Sassoon: A Critical Study*. Leiden University Press. 1966.

Seamus Heaney

Allen, Michael, ed. *Seamus Heaney*. New York: St. Martin's, 1997.

Andrews, Elmer. *The Poetry of Seamus Heaney*. New York: St. Martin's Press, 1988.

Corcoran, Neil. *Seamus Heaney*. London: Faber and Faber Limited, 1986.

Foster, John Wilson. *The Achievement of Seamus Heaney*. Dublin: The Lilliput Press, 1995.

Garratt, Robert F., ed. *Critical essays on Seamus Heaney*. GK Hall & Co., 1995.

Hart, Henry. *Seamus Heaney: Poet of Contrary Progressions*. Syracuse: Syracuse University Press, 1992.

Morrison, Blake. *Seamus Heaney*. London: Methuen, 1982.

O'Brien, Eugene. *Seamus Heaney and the Place of Writing*. Gainesville: University Press of Florida, 2003.

O'Donoghue, Bernard. *Seamus Heaney and the Language of Poetry*. New York: Harvester Wheatsheaf, 1994.

Parker, Michael. *Seamus Heaney: The Making of a Poet*. Iowa City: University of Iowa Press, 1993.

Anthony Thwaite

Corcoran, Neil. *The Cambridge Companion to Twentieth-Century English Poetry* (Cambridge Companions to Literature), CUP, 2007.

Porter, Peter. *The English Poets: From Chaucer to Edward Thomas*. Secker and Warburg, 1974.

Thomas, Riggs, ed. *Contemporary poets / with a preface by Anthony Thwaite*. New York: St. James Press, 1995.

Thwaite, Anthony. *Poetry Today: A Critical Guide to British Poetry 1960-1995*. Routledge, 1996.

Jean Rhys

Adjarian, M.M. "Between and Beyond Boundaries in Wide Sargasso Sea." *College Literature*. 22.1 (1995): pp. 59-93.

Bender, Todd K. *Literary Impressionism in Jean Rhys, Ford Madox Ford, Joseph Conrad, and Charlotte Brontë*. New York and London: Garland Publishing, Inc. 1997.

Emery, Mary Lou. *Jean Rhys at "World's End": Novels of Colonial and Sexual Exile*. Austin: University of Texas Press, 1990.

Humm, Maggie. "Third World Feminisms: Jean Rhys, Wide Sargasso Sea." *Practicing Feminist Criticism: An introduction*. Great Britain: Prentice Hall, 1995.

Konzett, Delia Caparoso. *Ethnic Modernisms*. New York: Palgrave MacMillan, 2002.

Madden, Diana. "Wild Child, Tropical Flower, Mad Wife: Female Identity in Jean Rhys's Wide Sargasso Sea." *International Women's Writing: New Landscapes of Identity*. ed. Anne E. Brown and Marjanne E. Gooze. Westport, CT: Greenwood Press, 1995.

Maurel, Sylvie. *Jean Rhys*. New York: St. Martin's Press, 1998.

Mezei, K. "And it Kept its Secret": Narration, Memory, and Madness in Jean Rhys' Wide Sargasso Sea. *Critique: Studies in Contemporary Fiction*, 28(4) (1987), pp.195-209.

Pierrette, Frickey M., ed. *Critical perspectives on Jean Rhys*. Washington, D. C.: Three Continents Press, 1990.

Rhys, Jean. *A Norton Critical Edition: Wide Sargasso Sea*. ed. Judith L. Raiskin. New York: W. W. Norton & Company, 1999.

Schapiro, Barbara Ann. "Boundaries and Betrayal in Jean Rhys's *Wide Sargasso Sea*." *Literature and the Relational Self*. ed. Jeffrey Berman. New York: New York University Press, 1994.

Thomas, Sue. *The Worlding of Jean Rhys*. Westport and London: Greenwood Press, 1999.

Thorpe, Michael. "'The Other Side': *Wide Sargasso Sea* and *Jane Eyre*." *A Norton Critical Edition: Wide Sargasso Sea*. ed. Judith L. Raiskin. New York: W. W. Norton & Company, 1999.

Wheeler, Kathleen. *'Modernist' Women Writers and Narrative Art*. New York: New York University Press, 1994.

Wilson, Lucy. "'Women Must Have Spunks': Jean Rhys's West Indian Outcasts." *Critical Perspectives on Jean Rhys*. ed. Pierette M. Frickey. Washington, D. C.: Three Continents Press, 1990. 67-74.

Tom Stoppard

Bareham, Tony, ed. *Tom Stoppard: Rosencrantz and Guildenstern Are Dead, Jumpers: A Casebook* [Casebook Series] London: Macmillan, 1990.

Billington, Michael. *Stoppard, the Playwright* [Modern Theatre Profiles] London / New York: Methuen, 1987.

Bloom, Harold, ed. *Tom Stoppard* [Bloom's Major Dramatists] New York: Chelsea House, 2003.

Bratt, David. *Tom Stoppard: A Reference Guide*. Boston: G.K. Hall, 1982.

Cahn, Victor L. *Beyond Absurdity: The Plays of Tom Stoppard*. Fairleigh Dickinson Univ Press, 1979.

Delaney, Paul. *Tom Stoppard: The Moral Vision of the Major Plays*. London: Macmillan / New York: St. Martin's Press, 1990

Fleming, John. *Stoppard's Theater: Finding Order Amid Chaos* [Literary Modernism Series] Austin: University of Texas Press, 2001.

Fleming, John. *Tom Stoppard's Arcadia* [Continuum Modern Theatre Guides] London, New York: Continuum, 2009;

Hodgson, Terry, ed. *The Plays of Tom Stoppard for Stage, Radio, TV and Film*. Cambridge: Icon Books Ltd., 2001.

Kelly, Katherine E., ed. *The Cambridge Companion to Tom Stoppard*. Cambridge: Cambridge University Press, 2001.

Sales, Roger. *Tom Stoppard: Rosencrantz and Guildenstern Are Dead* [Penguin Critical Studies] London / New York: Penguin, 1988

Paper 1.3: Contemporary Studies in English Language

1) AIMS AND OBJECTIVES

1. To introduce students to the basic tools essential for a systematic study of language
2. To acquaint students with the basic concepts and issues in linguistics
3. To introduce them to various sub-disciplines of linguistics
4. To initiate them into some of the theoretical assumptions underlying language and to enable them to apply the acquired linguistic skills in real life situations
- 5) To introduce learners to the syntactic features of the English language
- 6) To help them shake off some of the regional features of English pronunciation
- 7) To enable them to use English with confidence and with a better understanding of its appropriate social applications.

2) COURSE CONTENT

[**Note:** Teachers are expected to discuss in class the background to major linguistic theories, linguists and their theoretical models. There will be a separate question on the linguistic background]

A note on the allotment of Credits: One credit is equal to 15 clock hours and every semester is allotted four credits (60 clock hours). The allotment is as follows:

Semester-I

Unit-I: Introduction to Linguistics and Contemporary Theories/Views of Language: **15 clock hours**

Unit-II: Phonology: **15 clock hours**

Unit-III: Morphology: **15 clock hours**

Unit-IV: Syntax: **15 clock hours**

Unit-1: Introduction to Linguistics and Contemporary Theories/Views of Language

A) Introduction: What is Linguistics? Major branches of Linguistics (Psycholinguistics, Sociolinguistics, Computational linguistics, Historical linguistics), Linguistics in the 20th century: A short history

B) Ferdinand de Saussure's Structuralist View of Grammar:

i) Synchronic and Diachronic Studies

- ii) Langue and Parole
- iii) Syntagmatic and Paradigmatic Relations
- iv) IC Analysis

C) Chomsky's Theory of Transformational Generative Grammar:

- i) Language acquisition: The Cognitivist approach
 - ii) Competence and Performance
 - iii) The Concepts of Kernel and Non- Kernel Sentences (i.e. Deep and Surface Structure]
- D) Dell Hymes' Concept of Communicative Competence

Unit-II: Phonology

- i) The Phonemes of English: Description and Classification
- ii) The Syllable: Structure and Types, Syllabic Consonants
- iii) Word Stress: Degrees of Stress, Stress Shift, Grammatical Stress
- iv) Sentence Stress: Use of Weak and Strong Forms, Tone Groups, The Concept of Nucleus (types of nucleus: end-placed and contrastive), Tonic Accent, Pre-tonic Accent, Post-tonic Accent
- v) Intonation Patterns/Uses of Tones, Grammatical, Attitudinal and Accentual functions of Intonation

Unit-III: Morphology

- i) Structure of words: The concepts of Morpheme and Allomorph
- ii) Types of Morpheme (free, bound, prefixes, suffixes: class changing, class-maintaining, inflectional, derivational), General Principles of Lexicography.
- iii) Some word formation processes: Reduplication, Clipping, Blending
- iv) Morphophonemic Changes, Phonological and Morphological Conditioning
- v) Problems of Morphological Analysis

Unit-IV: SYNTAX

- a) Sentences and their Parts
- b) Words

[For the topics under Syntax, please refer to: Geoffrey Leech, Margaret Deuchar & Robert Hoogenraad's *English Grammar for Today: A New Introduction* 2nd edn. Palgrave, 2006]

Paper 2.3: Contemporary Studies in English Language

Semester-II

Unit-I: Sociolinguistics: **15 clock hours**

Unit-II: Semantics: **15 clock hours**

Unit-III: Speech Act Theory and Discourse Analysis: **15 clock hours**

Unit IV: Syntax: Phrases and Clauses: **15 clock hours**

Unit-I: Sociolinguistics

A) Language Variation: Regional Dialects, Social Dialects/ Sociolects, Diglossia,

Idiolects, Formal and Informal Styles, Registers, Standard and Non-standard Varieties, Arguments against the Standardisation of English, Slang, Jargon

B) Language Contact

a) Bilingualism, Multilingualism, Language Planning

b) Code Switching and Code Mixing

c) Pidgins and Creoles,

d) Borrowing,

e) Esperanto

f) Language maintenance, Language shift and Death of Language

Unit-II: Semantics

i) Nature of Semantics

ii) Seven Types of Meaning

iii) Lexical Semantics:

a) Synonymy, Antonymy

b) Homonymy, Polysemy

c) Hyponymy, Super ordinate Terms

d) Metonymy, the Concept of Prototype

Unit-III: Speech Act Theory and Discourse Analysis

i) Semantics and Pragmatics: Differences

ii) J. L. Austin's Speech Act theory:

- a) Constative and Performative Utterances
- b) Felicity Conditions
- c) Locutionary, Illocutionary and Perlocutionary Acts
- iii) J. R. Searle's Typology of Speech Acts:
 - a) Assertives (b) Declaratives (c) Expressives (d) Directives (e) Commissives
- iv) Direct and Indirect Speech Acts
- v) The Concepts of Entailment, Presupposition and Implicatures
- vi) The Concept of Discourse:
 - a) Cohesion and Coherence
 - b) Turn Taking and Adjacency Pairs

Unit-IV: Syntax

- a) Phrases
- b) Clauses

[For the topics under Syntax, please refer to: Geoffrey Leech, Margaret Deuchar & Robert Hoogenraad's *English Grammar for Today: A New Introduction* 2nd edn. Palgrave, 2006.]

3) METHODOLOGY: Since many of the linguistic concepts in this paper are new to students (especially to those who join the programme from other disciplines), teachers' active involvement in teaching is vitally important. This means that they need to explain each concept in the syllabus to the students lucidly. They may do this with the help of PPTs and other ICT-based teaching methods. Teachers are also expected to emphasise the practical significance of the concepts. This is especially relevant to the unit on Phonetics and Phonology; giving practice in the production of each sound will enable the learners to shake off some of the local features of accent and to attain general intelligibility. Similarly, citing examples from the students' own language(s) to establish various concepts listed in the units will enable the students to understand the similarities and differences between the systems of their own languages and English. Such a comparative approach can arouse the research interests of the students and can encourage them to work on research projects in comparative linguistics. The discussions, seminars and presentations in the classroom should aim at the consolidation of the students' understanding of the topics. Teachers should encourage them to refer frequently to the primary sources listed in the Reference section below. Students' attention may also be drawn to the lectures on the topics delivered by eminent scholars/teachers, which are available on YouTube,

4) EVALUATION PROCEDURES The assessment of student's performance in tests, examinations, etc. will be done according to the guidelines issued by Savitribai Phule Pune University. The pattern of the question papers for the semester-end examination is attached to this document separately.

5) REFERENCES

PRIMARY SOURCES (FOR BOTH SEMESTERS)

- Aitchison, Jean. *Teach Yourself Linguistics*. London: Teach Yourself Books, 1992.
- Akmajian, et al. (1995), *Linguistics: An Introduction to Language and Communication*. Prentice Hall of India: New Delhi.
- Balasubramaniam, T. *A Text book of English Phonetics for Indian Students*. Macmillan, 1981.
- Bansal, R. K. and J. B. Harrison. *Spoken English for India: A Manual of Speech and Phonetics*. New Delhi : Orient Longman,1972. 4th edition 2000.
- Cutting, Joan. *Pragmatics: A Resource Book for Students* (3rd Edition) Routledge, 2015.
- Leech, G. N. *Principles of Pragmatics*, London: Longman, 1983.
- Leech, Geoffrey, Margaret Deuchar, Robert Hoogenraad. *English Grammar for Today: A New Introduction* 2nd ed. Palgrave, 2005.
- Levinson, S. C. *Pragmatics*, Cambridge: CUP, 1983.
- Quirk, R, & S. Greenbaum. *A University Grammar of English* London: Longman, 1973.
- Sethi J and PV Dhamija. *A Course in Phonetics and Spoken English*. Prentice Hall of India, 1989.
- Syal, Pushpinder and D Jindal. V. *An Introduction to Linguistics: Language Grammar and Semantics*. Prentice Hall of India, 2001.
- Thakur, Damodar. *Linguistics Simplified : Syntax*. Bharati Bhawan : Patna, 1998.
- Verma and Krishnaswamy. *Modern Linguistics: An Introduction*. Oxford: OUP, 1989.
- Yule, George *Pragmatics*, Oxford : OUP, 1996.
- Yule, George. *The Study of Language* (4th edition). Cambridge University Press, 2010.

SECONDARY SOURCES

- Anderson, W. L. and Stageberg, N. C. *Introductory Readings on Language*. Holt, Rinehart & Wilson (4th edn.): New York, 1975.
- Brown, G. and Levinson, S. C. *Politeness: Some Universals in Usage*. Cambridge: CUP, 1987.
- Brown, Gillian & George Yule. *Discourse Analysis*. CUP, 1983.
- Chomsky, Noam. *Aspects of the Theory of Syntax*, Cambridge, Mass: MIT,1965.

- Chomsky, Noam. *New Horizons in the Study of Language and Mind*. CUP, 2000.
- Cook, Guy. *Discourse*, Oxford : OUP, 1989.
- Crystal, David. *The Cambridge Encyclopaedia of the English Language*, CUP, 1969.
- Crystal, David. *A Dictionary of Linguistics and Phonetics*. Cambridge: Blackwell, 1980 rpt. 2008.
- Crystal, David. *Linguistics*. Second edition. Penguin, 1985.
- Crystal, David. *Language Death*. Cambridge: Cambridge University Press, 2000.
- Crystal, David. *English as a Global Language*. CUP, 2009.
- Giegerich, Heinz. *English Phonology: An Introduction*. CUP, 1992.
- Gimson, A. C. *An Introduction to The Pronunciation of English*. Hodder Arnold; 4 edition 1996.
- Hudson, R. A. *Sociolinguistics*. Cambridge: CUP, 2003.
- Kennedy, Graeme. *Structure and Meaning in English*. New Delhi: Pearson, 2011.
- Laver, John. *Principles of Phonetics*. CUP, 1994.
- Lyons, J. *Language and Linguistics*. Cambridge: CUP, 1981.
- Lyons, J. *Language, Meaning and Context*. Cambridge: CUP, 1981.
- Lyons, J. *Semantics*. Vols. 1 & 2. Cambridge: CUP, 1977.
- Meyer, Charles. *Introducing English Linguistics*. CUP, 2009.
- Mohan, Krishna and Banerjee Meera. *Developing Communication Skills*. Madras: Macmillan, 1990.
- Neill, Smith. *Chomsky: Ideas and Ideals*. CUP, 1999.
- O'Connor, J. D. *Better English Pronunciation* (New Edition), New Delhi: Universal Book Stall, 1980, rpt. 1992.
- Palmer, Frank. *Semantics*, Cambridge : CUP, 1982.
- Plag, Ingo. *Word-formation in English*. CUP, 2003.
- Prasad, Tarni. *A Course in Linguistics*. New Delhi: Prentice Hall of India, 2008.
- Radford, Andrew. *Syntax: A Minimalist Introduction*. CUP, 1997.
- Radford, Atkinson, et al. *Linguistics: An Introduction*. CUP, 1999.

Richards, Jack C. and Richard W. Schmidt, ed. *Language and Communication*. Longman, 1993.

Saeed, John. *Semantics*. Oxford: Blackwell, 1997.

Saussure, Ferdinand De. *A Course in General Linguistics* (with introduction by Jonathan Culler), Fontana: Collins, 1974.

Trask, R. L. *Language : The Basics*. Routledge, 2003.

Trudgill, Peter. *Sociolinguistics: An Introduction to Language and Society*. Rev. edn. Penguin, 1983.

Valin, Robert. *An Introduction to Syntax*. CUP, 2001.

Verschueren, Jeff. *Understanding Pragmatics*. London: Edward Arnold, 1999.

Paper – 1.4: Literary Criticism and Theory

1) OBJECTIVES

- 1) To introduce students to the nature, function and relevance of literary criticism and theory
- 2) To introduce them to various important critical approaches and their tenets
- 3) To encourage them to deal with highly intellectual and radical content and thereby develop their logical thinking and analytical ability
- 4) To develop sensibility and competence in them for practical application of critical approach to literary texts

2) ALLOTMENT OF CREDITS

One credit is equal to 16 clock hours per unit for both semesters. This also includes the completion of the background survey and basics of critical approaches. The allotment is as below:

Semester-I

Background survey and basics of critical approaches: 6 clock hours

Unit I: Classical Criticism- 12 clock hours (6 clock hours to each essay)

Unit II: Neoclassical Criticism-12 clock hours (6 clock hours to each essay)

Unit III: Romanticism and Victorian Criticism-18 clock hours (6 clock hours to each essay)

Unit IV: Modernism and New Criticism- 12 clock hours (6 clock hours to each essay)

Semester-II

Background survey and basics of critical approaches: 6 clock hours

Unit I: Structuralism and Poststructuralism-12 clock hours (6 clock hours to each essay)

Unit II: Psychoanalysis and Reader Response Criticism-12 clock hours (6 clock hours to each essay)

Unit III: Marxist Criticism and Cultural Studies - 18 clock hours (6 clock hours to each essay)

Unit IV: Feminist Criticism and Postcolonialism-12 clock hours (6 clock hours to each essay)

3) COURSE CONTENT

Teachers are expected to discuss the background contexts to critical approaches, basics, important theorists and critics in the beginning of their course teaching. There shall be a separate question on the critical background.

Semester-I

Unit-I: Classical Criticism

i) Aristotle- Poetics (Chapter 6 to 10)

ii) The Theory of Rasa- S. N. Dasgupta (from Indian Aesthetics: An Introduction, ed. by V. S. Seturaman, Macmillan, 1992)

Unit-II: Neoclassical Criticism

i) Aphra Behn- Preface to The Lucky Chance

ii) Samuel Johnson- Preface to Shakespeare

(both texts from The Norton's Anthology of Theory & Criticism) **

Unit-III: Romanticism and Victorian Criticism

i) S. T. Coleridge- Biographia Literaria (Chapter 13 & 14)

ii) Mary Wollstonecraft- Vindication of the Rights of Women (Chapter II)

(both texts from The Norton's Anthology of Theory & Criticism)

ii) Matthew Arnold- The Study of Poetry

Unit-IV: Modernism and New Criticism

i) T. S. Eliot- The Function of Criticism

ii) Cleanth Brooks- The Language of Paradox

Paper – 2.4: Literary Criticism and Theory

Semester-II

Unit-I: Structuralism and Poststructuralism

i) Tzvetan Todorov- Structural Analysis of Narrative

ii) Michel Foucault- What is an Author?

Unit-II: Psychoanalysis and Reader Response Criticism

i) Lionel Trilling- Freud and Literature

ii) Wolfgang Iser- Interaction between Text and Reader

Unit-III: Marxist Criticism and Cultural Studies

i) Terry Eagleton- Marxism and Literary Criticism (Chapters 1&2)

ii) Stuart Hall- Cultural Studies and Its Theoretical Legacies

iii) Susan Sontag: Against Interpretation (the title essay)

Unit-IV: Feminist Criticism and Postcolonialism

i) Simone de Beauvoir: Woman's Situation and Character, Chapter 6 (from The Second Sex)

ii) Postcolonialism (Chapter no. 10 from Literary Criticism: An Introduction to Theory and Practice by Charles E. Bressler, 5th Edition, Pearson, 2011)

** (Vincent B. Leitch (General Editor). The Norton's Anthology of Theory & Criticism, W. W. Norton & Company, New York, 2001)

4) SUGGESTIONS FOR TEACHERS

Though not thoroughly representative, the course content strives to cover the mammoth range of major critical approaches from the ancient to the poststructural period. Given the vast range and profundity of literary theory, it is advisable that teachers introduce the characteristics and basics of all major approaches along with brief summary of the contexts that necessitated their emergence and made them relevant. The explanation of the broad differences between the traditional and the modern criticism and between criticism and theory can greatly help students know views in larger perspectives. The critical terms generally used as the critical short hands need to be introduced in clear and simple words possible. It is important to explain the relevance of these approaches to the present literature and language study and this can be done

by applying the approaches to texts. Teachers can encourage students to take efforts to understand the approaches and apply them to texts of their choice.

5) REFERENCES

Adams, Hazard, ed. *Critical Theory since Plato*. 2nd ed. Fort-Worth: Harcourt Brace Jovanovich, 1992.

Antony, Easthope. *The Unconscious*. Routledge, 1999.

Ashcroft, B., Griffiths, G. and Tiffin H. *The Empire Writes Back: Theory and Practice in Post-colonial Literatures*. London: Routledge. 2nd Edition, 2002.

Ashcroft, B., Griffiths, G. and Tiffin, H. *The Post-Colonial Studies Reader*. London: Routledge, 1995.

Beckson, Karl, ed. *Great Theories in Literary Criticism*. New York: Noonday, 1963.

Belsey, Catherine. *Critical Practice*. London: Methuen. 1980.

Bennett Andrew and Royle Nicholas. *Introduction to Literature, Criticism and Theory*. Pearson-Longman. IIIrd edition, 2004.

Blamires Harry. *A History of Literary Criticism*. Macmillan. 2000 (reprinted)

Bloom, Harold, ed. *The Art of The Critic: Literary Theory and Criticism from the Greek to the Present*. Vol. I, Classical and Medieval. New York: Chelsea House, 1985.

Bloom, Harold. ed. *The Art of The Critic: Literary Theory and Criticism from the Greek to the Present*. Vol. II, Early Renaissance. New York: Chelsea House, 1986

Bloom, Harold. ed. *The Art of The Critic: Literary Theory and Criticism from the Greek to the Present*. Vol. 5, Early Romantics. New York: Chelsea House, 1988

Brooker, Peter, and Peter Widdowson, eds. *A Practical Reader in Contemporary Literary Theory*. New York: Prentice Hall/Harvester Wheatsheaf, 1996.

Burgum, Edwln R, ed. *The New Criticism*. New York: Prentice Hall, 1930.

Castle Gregory. *The Blackwell Guide to Literary Theory*. Blackwell, 2007.

Charles E. Bressler. *Literary Criticism: An Introduction to Theory and Practice*. 5th Edition, Pearson, 2011

Coyle, Martin, Peter Garside, Malcolm Kelsall and John Peck, eds. *Encyclopedia of Literature and Criticism*. London and New York: Routledge, 1990.

Cuddon, J.A., ed. *The Penguin Dictionary of Literary Terms and Literary Theory*. Harmondsworth: Penguin, 1992.

- Culler, Jonathan. *Literary Theory: A Very Short Introduction*. Oxford: Oxford University Press 1997.
- Culler, Jonathan. *On Deconstruction: Theory and Criticism after Structuralism*. London: Methuen. 1983.
- Davis, Robert Con, and Laurle Finke, eds. *Literary Criticism and Theory: The Greeks to the Present*. New York: Longman, 1989.
- Davll, Robert Con, and Ronald Schleifer, ed. *Contemporary Literary Criticism: Literary and Cultural Studies*. 4th ed: New York: Longman, 1998.
- During, Simon. *The Cultural Studies Reader*. Routledge, 1993.
- Eagleton, Terry. *Literary Theory: An Introduction*. 2nd edn. Oxford: Basil Blackwell 1996.
- Evans, Dylan. *An Introductory Dictionary of Lacanian Psychoanalysis*. London: Routledge, 1996.
- Gray, Martin. *A Dictionary of Literary Terms*. 2nd edn. Harlow, Essex and Beirut: Longman York Press, 1992.
- Groden, Michael and Martin Kreiswirth, eds. *The Johns Hopkins Guide to Literary Theory and Criticism*. Baltimore: Johns Hopkins University Press. Makaryk, 1994.
- Habib M. A. R. *A History of Literary Criticism: from Plato to the Present*. Blackwell, 2005.
- Hall, Vernon. *Literary Criticism: Plato through Johnson*. New York: Appleton- Century-•Crofts, 1970.
- Irena R., ed. *Encyclopaedia of Contemporary Literary Theory: Approaches, Scholars, Terms*. Toronto: University of Toronto Press, 1993.
- Jefferson, Ann and David Robey. *Modern Literary Theory: A Comparative Introduction*. 2nd edn. London: Batsford. 1986.
- Kulkarni Anand and Chaskar Ashok. *Introduction to Literary Theory and Criticism*. Orient Blackswan, 2013.
- Leitch Vincent. B. (ed.): *The Norton Anthology of Theory and Criticism*. W. W. Norton & Company, Inc. 2001.
- Lentricchia, Frank and Thomas McLaughlin, eds. *Critical Terms for Literary Study*. 2nd edn. London and Chicago: Chicago University Press 1995.
- Mure William: *Critical History: Language and Literature of the Ancient Greece*. London: Longman.1850.
- Murray Penelope & Dorsch T. S. (trans.) *Classical Literary Criticism*. Penguin Books, 2004 edition.

Newton, K. M., ed. *Twentieth-Century Literary Theory: A Reader*. New York: St. Martin's, 1997.

Patai, Daphne and Corral, eds. *Theory's Empire*. Columbia, 2005.

Plain, Gill and Sellers Susan, ed. *History of Feminist Literary Criticism*. Cambridge University Press: 2007.

Selden, Raman, Peter Widdowson and Peter Brooker. *A Reader's Guide to Contemporary Literary Theory*. 4th edn. Hemel Hempstead: Prentice Hall 1997.

Seturaman V. S. (ed.) *Contemporary Criticism: An Anthology*. Macmillan, 2011 edition.

Seturaman V. S. (ed.) *Indian Aesthetics: An Introduction*. Macmillan, 1992.

Sim, Stuart. *The A-Z Guide to Modern Literary and Cultural Theorists*. Hemel Hempstead: Prentice Hall/Harvester Wheatsheaf, 1995.

Susan Sontag. *Against Interpretation*. Farrar, Straus and Giroux, 1966

Talis Raymond. *Theorrhoea and After*. London: Macmillan Press, 1999.

Vincent B. Leitch, ed. *The Norton's Anthology of Theory & Criticism*. W. W. Norton & Company, New York, 2001

Viswanathan, Gauri. *Masks of Conquest: Literary Study and British Rule in India*. New York: Columbia University Press, 1989.

Wellek, Rene and Austin Warren. *Theory of Literature*. 3d ed. New York: Harcourt, 1962.

Wolfreys, Julian, ed. *The Edinburgh Encyclopaedia of Modern Criticism and Theory*. Edinburgh: Edinburgh University Press, 2002.

Wright, Elizabeth, ed. *Feminism and Psychoanalysis: A Critical Dictionary*. Oxford and Cambridge, Mass.: Basil Blackwell, 1992.

QUESTION PAPER PATTERN

Paper 1.1 English Literature from 1550 to 1798

Question paper format (Semester-I)

(wef 2019-20)

Time: 3 hours

Max. Marks: 50

Qn. 1 Background questions on the background and features of literary schools, movements, comparison of the schools/movements/prescribed authors (one out of two) **10 Marks**

Qn. 2 Long answer questions on Christopher Marlowe's *Edward II* (any one out of three) **10 Marks**

Qn. 3 Long answer questions on William Shakespeare's *The Tempest* (any one out of three) **10 Marks**

Qn. 4 Short notes on the prescribed poems of Philip Sidney, Edmund Spenser, Walter Raleigh and Robert Herrick (any two out of four) Short notes of comparative type will be ideal. **10 Marks**

Qn. 5 Short notes on the prescribed poems of John Donne, Andrew Marvell, George Herbert and Edmund Waller (any two out of four) Short notes of comparative type will be ideal . **10 Marks**

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Paper 2.1 English Literature from 1550 to 1798

Question paper format (Semester-II)

(w e f 2019-20)

Time: 3 hours

Max. Marks: 50

Qn. 1 Background questions on the background and features of literary schools, movements, comparison of the schools/movements/prescribed authors (one out of two) **10 Marks**

Qn. 2 Long answer questions on Ben Jonson's *Volpone*

OR

Comparative questions on the essays of Richard Steele and Joseph Addison **10 Marks** (any one out of three)

Qn. 3 Long answer questions on Jonathan Swift's *Gulliver's Travels* (any one out of three) **10 Marks**

Qn. 4 Short notes on the prescribed poem of John Milton's (any two out of four) **10 Marks**

Qn. 5 Short notes on the prescribed poems of John Dryden, Alexander Pope and William Blake. Short notes of comparative type will be ideal (any two out of four) **10 Marks**

Paper 1.2 English Literature from 1798 to the Present

Question paper format (Semester-I)

(w e f 2019-20)

Time: 3 hours

Max. Marks: 50

Qn. 1 Background questions on the background and features of literary schools, movements, comparison of the schools/movements/prescribed authors (one out of two) **10 Marks**

Qn. 2 Long answer questions on Mary Shelley's *Frankenstein* (any one out of three) **10 Marks**

Qn. 3 Long answer questions on Jane Austen's *Persuasion* (any one out of three) **10 Marks**

Qn. 4 Short notes on the prescribed poems of ST Coleridge and William Wordsworth (any two out of four) **10 Marks**

Qn. 5 Short notes on the prescribed poems of John Keats, PB Shelley and Felicia Hemans (any two out of four) Short notes of comparative type will be ideal. **10 Marks**

Paper 2.2 English Literature from 1798 to the Present

Question paper format (Semester II)

(w e f 2019-20)

Time: 3 hours

Max. Marks: 50

Qn. 1 Background questions on the background and features of literary schools, movements, comparison of the schools/movements/prescribed authors (one out of two) **10 Marks**

Qn. 2 Long answer questions on Jean Rhys' *Wide Sargasso Sea* (any one out of three) **10 Marks**

Qn. 3 Long answer questions on Tom Stoppard's *Rosencrantz and Guildenstern are Dead* (any one out of three) **10 Marks**

Qn. 4 Short notes on the prescribed poems of Elizabeth Barrett Browning, Alfred Tennyson, Robert Browning and Seamus Heaney (any two out of four). **10 Marks**

[The short notes in question 4 must be comparative. The comparison can be between the poets' thematic and stylistic concerns, social/cultural differences reflected in the poems written at different times, use of symbols, images, forms, techniques, etc. In each question the comparison can be between two or three poets.]

Qn. 5 Short notes on the prescribed poems of TS Eliot, WB Yeats and Siegfried Sassoon, Anthony Thwaite and Kathryn Simmonds (any two out of four). **10 Marks**

[The short notes in question 4 should be comparative. The comparison can be between the poets' thematic and stylistic concerns, social/cultural differences reflected in the poems written at different times, use of symbols, images, forms, techniques, etc. In each question the comparison can be between two or three poets.]

Paper - I.3: Contemporary Studies in English Language

Question Paper Format (Semester I)

(w e f 2019-20)

Time: 3 hours

Max. Marks: 50

Qn. 1 Short Answer questions on Contemporary Theories/Views of Language (2 out of 4) **Marks – 10**

Qn. 2 Short Answer questions on Phonology (2 out of 4) **Marks – 10**

Qn. 3 Short Answer questions on Morphology (2 out of 4) **Marks – 10**

Qn. 4 Short Answer questions on Syntax

(2 out of 4) **Marks – 10**

Qn. 5 Practical questions on all the four components above

(10 out of 15) **Marks – 10**

Paper - 2.3: Contemporary Studies in English Language

Question Paper Format (Semester- II)

Time: 3 Hours

Max. Marks: 50

Qn. 1 Short Answer questions on Sociolinguistics

(2 out of 4) **Marks – 10**

Qn. 2 Short Answer questions on Semantics (two out of four) **Marks – 10**

Qn. 3 Short Answer questions on Syntax (2 out of 4) **Marks – 10**

Qn. 4 Short Answer questions on Speech Act Theory and Discourse

Analysis (2 out of 4) **Marks – 10**

Qn. 5 Practical questions on all the four components above

(10 out of 15) **Marks 10**

Paper 1.4: Literary Criticism and Theory

Question Paper Format (Semester I)

(w e f 2019-20)

Time: 3 Hours

Marks: 50

Q. 1) Long answer questions on the background and tenets of critical approaches and/or on comparative study of relevant approaches, isms and critics

(Any one out of three in 150 words)-

Marks 10

Q.2) Long answer questions on the prescribed texts of Aristotle & The Theory of Rasa

(Any one out of three in 150 words)- **Marks 10**

Q.3) Long answer questions on the prescribed texts of Behn & Johnson

(Any one out of three in 150 words)- **Marks 10**

Q.4) A) Short note on the prescribed text of Coleridge & Wollstonecraft

(Any one out of two in 100 words)- **Marks 05**

B) Short note on the prescribed text of Arnold & Wollstonecraft (Any one out of two in 100 words)- **Marks 05**

Q.5) A) Short note on the prescribed text of Eliot

(Any one out of two in 100 words): **Marks 05**

B) Short note on the prescribed text of Brooks

(Any one out of two in 100 words): **Marks 05**

Paper 2.4: Literary Criticism and Theory

Question Paper Format (Semester II)

(w e f 2019-20)

Time: 3 Hours

Marks: 50

Q. 1) Long answer questions on the background and tenets of critical approaches and/or on comparative study of relevant approaches, isms and critics

(Any one out of three in 150 words)- **Marks 10**

Q. 2) Long answer questions on the prescribed texts of Todorov & Foucault

(The nature of questions may be comparative- for example comparing the structuralist/narratological approach of Todorov with the poststructuralist/deconstructive approach of Foucault)

(Any one out of three in 150 words each)- **Marks 10**

Q.3) Questions on the prescribed texts of Trilling & Iser

(Any one out of three in 150 words each) **Marks 10**

Q.4) A) Short notes on the prescribed text of Eagleton & Sontag

(Any one out of two in 100 words)

Marks 05

B) Short notes on the prescribed text of Hall & Sontag

(Any one out of two in 100 words each)-

Marks 05

Q.5) A) Short notes on the prescribed text of Beauvoir

(Any one out of two in 100 words)

Marks 05

B) Short notes on the prescribed text of Postcolonialism

(Any one out of two in 100 words)

Marks 05

Savitribai Phule Pune University, Pune

Revised Syllabus M.A. (Persian) Part-I (For the Academic Year 2019-2020-2021-2022)

Title of the Course: **Persian**

Title of the Paper: **Classical Prose and Poetry Text**

A) **Aims and Objectives:**

- I) To improve knowledge and understanding of Persian Languages and Literature.
- II) To improve knowledge and understanding of Historical, Political and social conditions of Various periods of Iran .
- III) To understanding to literary trends in Persian various Literature.

B) **SEMESTER - I**

Title of the Paper: **Classical Prose Text**

1) Gulistan-e-Saadi, Chapter –III & VII BY Shaikh Saadi

Sr. No.	Units	No. Of Credits
1	Literary trends and various Type of prose writing in Ghaznavi period	4
2	Life Sketch Literary Trends , Style and Literary Works of Saadi	6
3	Critical Study of Guistan-e- Saadi	6
4	Contemporary prose writers of Saadi	4
5	Study of the Text Chapter III	6
6	Study of the Text Chapter VII	6

2) Jawameul Hikayat

By Noor-ul-din Md. Auafi

Sr. No.	Units	No. Of Credits
1	Literary trends and various Type of prose writing in Ghuklaman period	4
2	Life Sketch Literary Trends , Style and Literary Works of Auafi	4
3	Critical Study of Jawameul Hikayat	6
4	Contemporary prose writers of Auafi	4
5	Study of the selected Hikayat of the Text (From Page No. 19 to 99)	12

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Library Notes	10
3	Assignments	10
Total		50

Pattern of Question paper for End Semester Examination for Semester-I

Duration: Two Hours

Maximum Marks : 50

Number of Questions: Five

- Q.1: Development of Persian prose writing. 10
- Q.2: Translation of the Passages (Two out of Three) 10
- Q.3: Questions on text book (Gulistan e Saadi: Chapt 3rd and 7th) 10
- Q.4: Questions on text book (Jawameul Hikayat) 10
- Q.5: Short note on authors. (Two out of Four) 10

Total 50 Marks

Semester - II: Classical Poetry Text

A) Qasaaed:

- i) Dar Madah Ameer Abu Muzaffar Ahamad Bin Mohammad By Furkhi
ii) Qaseeda No. 2 and 5 By Qaani

Sr. No.	Units	No. Of Credits
1	Chronological Development of Qaseeda in Persian Poetry	2
2	Qaseeda as a Form of Literature	2
3	Life Sketch, Literary Trends , Literary Works and Style of Furkhi	3
4	Life Sketch, Literary Trends , Literary Works and Style of Qaani	3
5	Explanation and Translation on the selected Qaseeda's	6

B) Ghazlyat

- i) Ghazlyat e Khusrao Dehelvi
From Intekhab e Adbyat e Farsi (First Five Ghazals)
Edited by: Mohd. ZakiulHaq
Published by: LalaRaamNaraenLal, Allahabad.
- ii) Kulliyat- e -Ghalib
Edited by : Ameer Hasan Noorani
Published: Raja Ram Kumar Book Depo.
Waris press, MunshiNawalKishorLakhnau
RadeefAlif, First Five Ghazals
- iii) Hafiz: First fifteen(15) Ghazals, Radeef Alif.

Sr. No.	Units	No. Of Credits
1	Ghazal as a Form of literature	2
2	Life Sketch, Literary Trends and Works and Style of Aamir Khusrao	2
3	Life Sketch, Literary Trends , Literary Works and Style of Ghalib	2
4	Life Sketch, Literary Trends , Literary Works and Style of Hafiz	2
5	Explanation and Translation on the selected Ghazals	8

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Short Quizzes	10
3	Extension Work	10
Total		50

Pattern of Question Paper for End Semester Examination for Semester-II

Duration: Two hours

Maximum marks: 50

Number of Questions: Five

Q.1:	Questions on Qaseeda.	10
Q.2:	Questions on poets	10
Q.3:	Questions on Ghazal.	10
Q.4:	Short questions.(Two out of Three)	10
Q.5:	Explanation and Translation of the couplets. (Five out of Seven)	10

Total 50 marks

*List of reference books

1)Qaani -wa-QaseedaNigari-e-Ou	By	Dr.NaseerAhemadSiddiqui
2)Tareekh-e-Adbiyat-e-Iran	By	RazaZadehShafaque
3) Hindustani Farsi AdabKalrtequa	By	SayyadAmeerHasanAbidi
4)Khusrov Ki Kamaliyat	By	Shaeelurrahman
5) AmeerKhusrov	By	SayyadSulemanMadni

SavitribaiPhule Pune University, Pune

Revised Syllabus

نصاب برائے ایم اے سالِ اول
(w.e.f 2019-2020-2021-2022)

M.A Urdu Part I

Paper- I, [پرچہ اول]

SEMESTER – I, {حصہ اول}

Aims and Objectives:

- I) To develop the skills of prose writing.
- II) To develop the thought provoking, analytical and critical abilities among the pupils.
- III) To acquaint the pupils with modern trends of literature.
- IV) To enable students to explain the couplets.

Title of the paper: **Modern Prose Text (Selected two Prose Texts from Modern Urdu Literature)**

جدید اردو ادب و نثر نگاری

1) Hayat-e-Jaweed By Maulana Altaf Husain Hali

۱۔ حیاتِ جاوید از مولانا الطاف حسین حالی

Sr. No.	Units	No. Of Credits
1	Effects of Aligarh Literary Movement on Urdu Literature	4
2	Chronological Development of Autobiography Writing in Urdu	2
3	Life Sketch Literary Trends , Style and Literary Works of Hali	4
4	Critical Study of Hayat-e-Jaweed	6

2) Godaan By Munshi Prem Chand گنودان از منشی پریم چند

Sr. No.	Units	No. Of Credits
1	Chronological Development of Urdu Novel	4
2	Kinds, Techniques of Urdu Novel	2
3	Life Sketch Literary Trends , Style and Literary Works of Munshi Prem Chand	4
4	Critical Study of Novel Godaan	6

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Library Notes	10
3	Assignments	10
Total		50

Pattern of Question paper for End Semester Examination for Semester - I

Duration: Two Hours

Maximum marks: 50

Number of Questions: five

- Q.1: One Question on the author with internal choice. (MaulanaAltaf Husain Hali) 10
- Q.2: One critical question on the text with internal choice. (Hayat-e-Jaweed) 10
- Q.3: One question on author with internal choice. (MunshiPrem Chand) 10
- Q.4: One critical question on the text with internal choice. (Godaan) 10
- Q.5: Short Notes on both texts 2 out of four. 10

Total Marks 50

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Revised Syllabus

نصاب برائے ایم اے سالِ اول
(w.e.f 2019-2020-2021-2022)

M.A Urdu Part I

Paper- I, [پرچہ اول]

SEMESTER –II, {حصہ دوم}

Title of the paper: **Modern Poetry Texts** (Selected two Poetry texts from Modern Urdu Literature)

۱- ضربِ کلیم از ڈاکٹر علامہ اقبال Allama Iqbal by Zarb-e Kleem
(Part "Taleem o Tarbiyat"- 20 Poems (Form First to Twenty)
حصہ "تعلیم و تربیت" ۲۵ نظمیں [ایک سے پچیس تک]

Sr. No.	Units	No. Of Credits
1	Chronological Development of Urdu Nazm	3
2	Life Sketch Literary Trends , Style and Literary Works of Allama Iqbal	4
3	Critical Study of Zarb-e- Kaleem	4
4	Explanation of Couplets	6

2)Ghazals By Majrooh-Sultanpuri

۲- غزل مجموعہ کلام از مجروح سلطانپوری {ایک سے بیس}

Sr. No.	Units	No. Of Credits
1	Chronological Development of Urdu Ghazal	2
2	Life Sketch Literary Trends , Style and Literary Works of Majrooh-Sultanpuri	4
3	Critical Study of Collection Ghazal	4
4	Explanation of Couplets	6

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Short Quizzes	10
3	Extension Work	10
Total		50

Pattern of Question paper for End Semesters Examination for semester –II

Duration: Three Hours

Maximum marks : 50

Number of Questions: five

Q1. One question on the poet with internal choice. (AllamaIqbal)	10
Q2. One critical question on the poetry text with internal choice. (Zarb-e-Kaleem)	10
Q.3 Critical question on the poet with internal choice. (Majrooh-Sultanpuri)	10
Q.4. One critical question on poetry text with internal choice.(Collection Ghazal)	10
Q.5: Explanation of couplets from both Text Books (Five out of Seven)	10

Total Marks 50

Reference Books

حوالیاتِ کتب

Hayat-e-Jaweed	by	AltafHussainHali
Ghazal(Collection)	by	Majrooh-Sultanpuri
Urdu Nasr ka Tanquidi Mutala	by	Dr. SumbulNigar
Urdu Novel KitareekhwaTanqueed	by	Ali Abbas Husaini
Godaan KaTanquidi Mutala	by	Anwar Kamal Hussaini
Toqiyate Premchand	by	ManikTaala
Prem Chand katanquidi Mutala	by	Dr. QamarRaees
Haali Number	by	Fiqr O Nazar Aligarh
Zarb-e- Kaleem (mae Sharah)	by	Prof. Yusuf Saleem Chishti
Urdu Mein Fun-e- Sawaneh Nigari ka Irtequa	by	MumtazFakhera
Urdu Adab Mein Fun-e- Sawaneh Nigari ka Irtequa	by	Altaf Fatimah

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نصاب برائے ایم اے سالِ اول
(w.e.f 2019-2020-2021-2022)

M.A Urdu Part I

Paper- II, [پرچہ دوم]
SEMESTER – I, {حصہ اول}

Title of the course: **Urdu**

Title of the paper: **Mass Media, Classical Prose and Poetry Texts** و ذرائع ابلاغ، کلاسیکی نثر و شاعری

Aims and Objectives:

- I) To curb the sense of hesitations among the pupils.
- II) To develop the delivering skills through writing and speaking among the pupils.
- III) To improve the knowledge and understanding peculiarities and importance of classical literature with special study of Deccani literature.
- IV) To develop the critical, analytical and comparison abilities among the pupils.

SEMESTER -I

Title of the paper: **Mass Media (Print Media and Electronic Media)** Unit I : Print Media

ذرائع ابلاغ {طباعتی صحافت اور برقی صحافت}

Sr. No.	Units	No. Of Credits
1	News –Sources of News, Various types of News i.e. Local, National and International Levels, on current events, Sport News, Criminal News etc.	6
2	Interview, Reportaz, Dialogue writing , Script writing, Editorial, Column Writing	8
3	Evolutionary Development of TV in India – TV, Drama , Telefilm, Filmdrama, FilmSerial, Advertisement, use and importance of computers and Internet	6
4	Translation - As an Art, its important and utility	6
5	Film Industries – Evolutionary development of film industry in India. Effects of film on culture and morality. Types of Film – Documentary Educational , criminal, Feature etc	6

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Library Notes	10
3	Assignments	10
Total		50

Pattern of Question paper for End Semester Examination for Semester - I

Duration: Three Hours

Maximum marks: 50

Number of Questions: Five

- Q1. Critical question on TV with internal choice. 10
- Q2. One critical question on Translation as an Art, Importance and utility 10
With internal choice.
- Q3. One critical question Print media with internal choice. 10
- Q4. One question on Film industry with internal choice. 10
- Q.5 Short Note on various branches of Mass Media.(Two out Four) 10

Total Marks 50

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(w.e.f 2019-2020-2021-2022)

M.A Urdu Part I

Paper- II, [پرچہ دوم]

SEMESTER –II, {حصہ دوم}

Title of the course: Urdu

Title of the Paper: Classical Prose and Poetry Texts کلاسیکی نثر و شاعری

1) Fasana-e-Ajaeb By Rajab Ali BaigSuroor {فسانہ عجائب {رَجَب علی بیگ سرور}}

Sr. No.	Units	No. Of Credits
1	Importance of Dastan Writing in Literature	2
2	Techniques of Dastan Writing and Silent feature of LucknawiDabistan	4
3	Life Sketch Literary Trends , Style and Literary Works of Rajab Ali BaigSuroor	4
4	Critical Study of Fasana-e-Ajaeb	6

Kullyat-e- Dagh By MirzaDaaghDehlvi {کلیاتِ داغ از مرزا داغ دہلوی}

2) (RadeefAleef 1 to 20) {ردیف الف ایک سے بیس} - ۲

Sr. No.	Units	No. Of Credits
1	Importants and Techniques of Urdu Ghazal	2
2	Life Sketch Literary Trends , Style and Literary Works of MirzaDaaghDehlvi	4
3	Poetic Art of MirzaDaaghDehlvi	4
4	Explanation of Couplets	6

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Short Quizzes	10
3	Extension Work	10
Total		50

Pattern of Question paper for End Semester Examination for semester - II

Duration: Three Hours

Maximum marks : 50

Number of Questions: Five

Q.1 Critical question on author with internal choice.(Rajab Ali BaigSuroor)	10
Q.2 Critical question on the text with internal choice. (Fasana- e -Ajaeb)	10
Q.3 Question on the poet with internal choice. (MirzaDaaghDehlvi)	10
Q.4 Critical question on the poeticartof MirzaDaagh Dehlviwith internal choice.	10
Q.5 Explanation of Couplets.(Five out of Seven)	10

Total Marks 50

Reference Books

حوالیاتِ کتب

TarjumaKa Fan AurRewat	By	Dr.Qamar Raees
Urdu DastaanTareekh-wa-Tanquid	By	Dr.Qamrulhuda Fareedi
Deccani Adab Ki Tareekh	By	Dr.Mohiyuddin Qadir Zor
Urdu MasnaviKalrtequa	By	Abdul Qadri Sarvari
Urdu Naser-Asnaf-wa-Asaalib	By	Qamrulhuda Fareedi
LucknowKaAdabiMahol(BisiwienSadiKeNisf-e-Awwal)	By	Md. Ali Johar
DastanKa Fan	By	Dr.Athar Pervez
Kullyat-e- Dagh	By	Mirza Daagh Dehlvi
Dagh Dehlvi Hayat wo karname	By	Urdu Academy Dehli

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نصاب برائے ایم اے سالِ اول
(w.e.f 2019-2020-2021-2022)

M.A Urdu Part I

پرچہ سوم] Paper- III,
SEMESTER – I, {حصہ اول}

Aims and Objectives:

- I) To increase the aesthetic sense among the pupils.
- II) To develop the skill of scansion the couplet among the pupils.
- III) To develop the skill of Essay writing.
- IV) To develop the analytical sense of the pupil.

SEMESTER - I

Title of the paper: **Essay, Rhetoric, Prosody and Translation**

مضمون نویسی، اسلوب نگارش، عروض اور ترجمہ نگاری

Sr. No.	Units	No. Of Credits
1	Essay on General	4
2	Literary Topics	4
3	Study of Figures of Speech	8
4	Parts of Speech	8
5	Scansion	8

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Library Notes	10
3	Assignments	10
Total		50

Pattern of Question paper for End Semester Examination for semester - I

Duration: Three Hours

Maximum marks : 50

Number of Questions: Five

Q1: Question on an essay on current and literary topics. (One out of Five)	10
Q2: Question on Figures of speech. (Five out of Seven)	10
Q3: Question on Parts of speech. (Five out of Seven)	10
Q4: Scansion the couplets. (Two out of Four)	10
Q5: Translate from English to Urdu.	10

Total Marks 50

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نصاب برائے ایم اے سال اول
(w.e.f 2019-2020-2021-2022)

M.A Urdu Part I

Paper- III, [پرچہ سوم]
SEMESTER –II, {حصہ دوم}

Title of the paper: **Philology**

لسانیات

Sr. No.	Units	No. Of Credits
1	Chronological Development of Urdu Language	6
2	Thoughts of Schools about Origin of Urdu Language	6
3	Correlation between Urdu Language and other Subjects	4
4	Importance and kinds of Phonetics	6
5	The Role of Sufi's in the Development of Urdu Language	4
6	Origin of Urdu Language	6

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Short Quizzes	10
3	Extension Work	10
Total		50

Pattern of Question paper for End Semester Examination for Semester - II

Duration: Three Hours

Maximum marks 50

Number of Questions: Five

All Question carry equal marks (10 marks)

Four questions on philology with internal choice.

One question on Short Note with internal choice.(Two out of Four)

Reference Books

حوالیاتِ کتب

Tafheem-ul-Blagat	By	Prof. WahabAshrafi
Urdu Sarf	By	Dr.Mohd. Ansari Ullah
Urdu Nauh	By	Dr.Mohd. Ansari Ullah
Qawaed-e-Urdu	By	Dr.MoulviAdbulHaque
MoqadmaTareekZaban-e-Urdu	By	Prof. Masood Husain Khan
Urdu Zaban Ki Tareekh	By	Prof. Mirza Khalil AhemadBaig
Urdu Ki LesaniTashkeel	By	Prof. Mirza Khalil AhemadBaig
Hindustani Lesaniyat	By	SayyadMohinuddinQadriZor
Urdu Lesaniyat	By	ShawkatSabzwari

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نصاب برائے ایم اے سالِ اول
(w.e.f 2019-2020-2021-2022)

M.A Urdu Part I

Paper- IV, [پرچہ چہارم]
SEMESTER – I, {حصہ اول}

Aims and Objectives:

- I) To develop the skill of prose writing.
- II) To develop the thought provoking and critical abilities among the pupils.
- III) To acquaint the pupils with modern trends of literature.

SEMESTER - I

Title of the paper: **Special Study of a Prose Writer** رخصوصی مطالعہ نثر نگار

Maulana Shibli Naumani

مولانا شبلی نعمانی

Sr. No.	Units	No. Of Credits
1	Effects of Aligarh Literary Movement on Urdu Literature	8
2	Life Sketch Literary Trends , Style and Literary Works of Shibli Naumani	8
3	Contemporary Prose Writers of Shibli Naumani	8
4	Critical Study of Shibli Naumanias a Prose Writer	8

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Library Notes	10
3	Assignments	10
Total		50

Pattern of Question paper for End Semester Examination for Semester -I

Duration: Three Hours

Maximum marks: 50

Number of Questions: Five

All Question carry equal marks (10 marks)

Four questions on prose writer, his art and literary works with internal choice.

One question on Short Note. (Two out of four)

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(w.e.f 2019-2020-2021-2022)

M.A Urdu Part I

Paper- IV, [پرچہ چہارم]
SEMESTER –II, {حصہ دوم}

Title of the paper: **Special Study of a Poet** خصوصی مطالعہ و شاعر

Makhdoom Mohiuddin

مخدوم محی الدین

Sr. No.	Units	No. Of Credits
1	Effects of Progressive Writers' Movement on Urdu Literature	6
2	Ghazal as poetic form of literature	6
3	Life Sketch Literary Trends , Style and Literary Works of Makhdoom Mohiuddin	6
4	Poetic art of Makhdoom Mohiuddin	8
5	Contemporary Ghazal of Makhdoom Mohiuddin	6

In semester Assessment		
Sr. No.	Details	Marks
1	Two Written Test	30
2	Short Quizzes	10
3	Extension Work	10
Total		50

Pattern of Question paper for End Semester Examination for semester - II

Duration: ThreeHours

Maximum marks: 50

Number of Questions: Five

All Question carry equal marks (10 marks)

Four question on poet his poetic art and literary works with internal choice.

One question on Short Note with internal choice. (Two out of four)

Reference Books

حوالیآ كٓب

Urdu Adab ki Tahreekein	By	Anwar Sadeed
Maulana Shibli Bahaiyyat Seerat Nigar	By	Zafar Ahmed Siddiqui
Urdu Nasr ka Tanquidi Mutala	By	Dr. SumbulNigar
Urdu Mein Taraqqi Pasand Adabi Tahreekh	By	Khalil-ur-RahmanAzmi
Shibli (MaandanaTanquidkiRoshni Mein)	By	Sayyed Shahabuddin Dasnavi
Urdu Tanquid ka Irtequa	By	Ibadat Barelvi
Makhdoom Mohiuddin ki Gazliat	BY	Rekhta.com
Makhdoom Mohiuddin Hyat aur Karname	By	Shaz Tamkinat



SAVITRIBAI PHULE PUNE UNIVERSITY

Revised Syllabus of Master of Commerce (M.Com.) Semester Pattern with Credit System with effect from June 2019

The M. Com. Syllabus for regular students is being revised from the academic year 2019-20. The course structure is as below:-

1. Objectives :

- To equip and train Post Graduate students to accept the challenges of business world by providing opportunities for study and analysis of advanced commercial and business methods and processes.
- To develop independent logical thinking and facilitate personality development.
- To equip the students to seek suitable careers in management and entrepreneurship.
- To acquaint students with significance of research in business.
- To impart skills regarding methods of data collection and their interpretations.
- To develop communication and analytical skills among students.

2. Duration :

The M.Com. Course will be of Two Years duration consisting of two part. I.e. Part I and Part II. Each part is having Two Semesters.

Thus, the M.Com. Course is of Four Semesters. For each Semester, there will be Four Papers of 100 marks each. M.Com. Degree will be of 1600 marks in aggregate.

3. Duration and Structure of Programme:

The M.Com (Semester pattern with Credit System) degree Programme shall be of 2 years' duration divided into two parts, Part I and Part II, and 4 semesters.

4. Eligibility :

The student who has passed any Bachelors degree of this University or any other recognized University shall be held eligible to be admitted to M.Com. Course.

5. Course Structure:

The M.Com. degree course will be of two year duration consisting of four semesters and of minimum 64 credits as below:

Sr. No.	Semester	Total Credits
1	Semester I	16
2	Semester II	16
3	Semester III	16
4	Semester IV	16
	Grand Total	64

Four extra credits for project work at 4th Semester (This will include credits for fieldwork, data presentation and report writing)

In each Semester, there will be four papers of 100 marks each out of which **40 marks will be for Internal Assessment** (attendance, home assignments, class tests, long term papers, classroom presentation and **60 marks for University Examination**. Thus M.Com. degree examination, four Semesters shall be of 1600 marks.

In addition to the above, students are required to secure following ten credits. These credits are compulsory in nature.

Semester	Human Rights	Introduction to cyber security / information security	Skill development	Total Credits
I	1 credit	1 credit	--	2 credits
II	1 credit	1 credit	--	2 credits
III	--	1 credit	2 credits	3 credits
IV	--	1 credit	2 credits	3 credits
Total Credits	2 credits	4 credits	4 credits	10 credits

- Syllabus and other details regarding 'Human Rights' has been displayed on the home page of the university website.
- Syllabus and other details regarding '**Introduction to cyber security / information security**' has been displayed on the 'syllabi' page of the university website.

6. **The Scheme of Papers:** The following will be the Scheme of papers:

The List of Courses

Semester I

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester I	Core Compulsory	101	Management Accounting	04	04	03	40	60	100	
		102	Strategic Management	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		Group A (Advanced Accounting & Taxation)								
		103	Advanced Accounting	04	04	03	40	60	100	
		104	Income Tax	04	04	03	40	60	100	
		Group B (Commercial Laws & Practices)								
		105	Information system and E-Commerce Practices	04	04	03	40	60	100	
		106	Intellectual Property Laws	04	04	03	40	60	100	
		Group C (Advanced Cost Accounting & Cost system)								
		107	Advanced Cost Accounting	04	04	03	40	60	100	
		108	Costing Technique Examination s and Responsibility Accounting	04	04	03	40	60	100	
		Group D (Co-operation & Rural Development)								
		109	Co-operative Movement in India	04	04	03	40	60	100	
		110	Rural Development	04	04	03	40	60	100	
		Group E (Business Practices & Environment)								
		111	Organized Traders and Markets	04	04	03	40	60	100	
		112	Business Environment and Policy	04	04	03	40	60	100	
		Group F (Business Administration)								
		113	Production and Operation Management	04	04	03	40	60	100	
114	Financial Management	04	04	03	40	60	100			
Group G (Advanced Banking & Finance)										
115	Legal Framework of Banking	04	04	03	40	60	100			
116	Central Banking	04	04	03	40	60	100			
Group H (Advanced Marketing)										
117	Marketing Techniques	04	04	03	40	60	100			
118	Consumer Behaviour	04	04	03	40	60	100			

Semester II

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks		
							Internal	Univ.	Total
Semester II	Core Compulsory	201	Financial Analysis and Control/ Principals of Financial Accounting	04	04	03	40	60	100
		202	A. Industrial Economics B. Business Statistics	04	04	03	40	60	100
Semester II	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>							
		Group A (Advanced Accounting & Taxation)							
		203	Specialized Areas in Accounting	04	04	03	40	60	100
		204	Business Tax Assessment & Planning	04	04	03	40	60	100
		Group B (Commercial Laws & Practices)							
		205	E- Security & Cyber Laws	04	04	03	40	60	100
		206	Laws Regulating to Copyrights & Design	04	04	03	40	60	100
		Group C (Advanced Cost Accounting & Cost system)							
		207	Application Cost Accounting	04	04	03	40	60	100
		208	Cost Control & Cost System	04	04	03	40	60	100
		Group D (Co-operation & Rural Development)							
		209	International Co-operative Movement	04	04	03	40	60	100
		210	Management of Co-operative Business	04	04	03	40	60	100
		Group E (Business Practices & Environment)							
		211	Modern Business Practices	04	04	03	40	60	100
		212	Business Environment Analysis	04	04	03	40	60	100
		Group F (Business Administration)							
		213	Business Ethics & Professional Value	04	04	03	40	60	100
		214	Elements of Knowledge Management	04	04	03	40	60	100
		Group G (Advanced Banking & Finance)							
215	Banking Law & Practices	04	04	03	40	60	100		
216	Monetary Policy	04	04	03	40	60	100		
Group H (Advanced Marketing)									
217	Customer Relationship Management & Retailing	04	04	03	40	60	100		
218	Services Marketing	04	04	03	40	60	100		

7. Scheme of Examination:

The examination of regular students of M.Com. degree course of the University of Pune admitted in the academic session 2019-20 and after shall be based on:

- (a) Semester Examination
- (b) Continuous Assessment
- (c) Choice Based Credit System, and
- (d) Semester Grade Point Average and Cumulative Grade Point Average System

For each paper of 100 marks, there will be an Internal Assessment (1A) of 40 marks and the University Examination (UE) of 60 marks/ 3 hours duration at the end of each semester. A candidate who will secure at least 40% marks allotted to each paper will be given 4 credits. A candidate who does not pass the examination in any subject or subjects in one semester will be permitted to appear in such failed subject or subjects along with the papers of following semesters.

The Internal Assessment for each paper will be 40 marks, which will be carried out by the department during the term. The Internal Assessment may be in the forms of written test, seminars, term papers, presentations, assignments, orals or any such others. The distribution of internal assessment marks shall be as follows:

Midterm Test	20
Presentation/Role Play	10
Case studies/ Group Discussion	10

There shall be four semester examinations: first semester examination at the middle of the first academic year and the second semester examination at the end of the first academic year. Similarly, the third and fourth semester examinations shall be held at the middle and the end of the second academic year, respectively.

The candidates shall be permitted to proceed from the first semester up to final semester irrespective of their failure in any of the semester examinations subject to the condition that the candidates should register for all the arrear subjects of earlier semesters along with current (Subsequent) semester subjects.

8. Research project work:

There will be a Research Project to be prepared by a student during the fourth semester. The objective of the project work is to introduce students to research methodology in the subject and prepare them for pursuing research in theoretical or experimental or computational areas of the subject. The project work is to be undertaken under guidance of a teacher allotted to a student by the department.

Division of marks	Marks
Synopsis with working bibliography (Internal Assessment)	40 marks
A full project Report (Minimum 50-80 pages)	40 marks
Viva Voce	20 marks

Total	100 marks
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As the Research Project is based on the self-study done by the candidate and evaluated for 100 marks altogether, having four credits. The project may be evaluated by two examiners one internal and one external, selected from the panel of PG examiners of the University. The Viva voce must be conducted by the teachers selected out of the panel of PG examiners maintained by the University.

The candidates have to submit the project 15 days before the commencement of the fourth semester university examination. The project report shall be type-written and submitted in duplicate. A candidate who fails to submit the project may resubmit the same in the subsequent semester examination for evaluation. The project work activities must be duly supported by documentary evidence to be endorsed by the Head or Guide.

9. Standard of passing:

A candidate shall be declared to have passed in the paper provided he/she has secured minimum GP of 4.5 in the UNIVERSITY EXAMINATION and GRADE POINT AVERAGE of 4.0 in aggregate of UNIVERSITY GRADE and INTERNAL ASSESSMENT taken together.

10. Classification of successful candidates:

Candidates who secured not less than 60% of aggregate marks (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) in the whole examination shall be declared to have passed the examination in the first class. All other successful candidates shall be declared to have passed in second class. Candidates who obtain 70% of the marks in the aggregate (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) shall be deemed to have passed the examination in first class with distinction.

A student who passes in all the courses will be declared to have passed the M.Com. degree with the following honors.

CGPA in (4.00, 4.99)	- Pass Class
CGPA in (5.00, 5.49)	- Second Class
CGPA in (5.50, 5.99)	- Higher Second Class
CGPA in (6.00, 7.99)	- First Class
CGPA in (8.00, 10,00)	- First Class with Distinction

11. Scheme of Credits:

Sixty (60) hours of teaching will lead to four credits (which mean four hours per week teaching in one semester) and long term paper as well as presentation will carry one credit. Each semester shall offer 16 credits or more.

12. Grade Points Scheme:

The term grading system indicates a 10 – points scale of evaluation of the performance of students in terms of marks obtained in the Internal and External Examination, grade points and letter grade. The total performance within a semester and continuous performance starting from the first semester are indicated respectively by Grade Point

Average (GPA) and Cumulative Grade Point Average (CGPA). Candidates who pass all the examinations prescribed for the course in the first appearance itself alone are eligible for Ranking.

The 10-point scale would be used to convert marks out of 100 to grades and grade points according to the following table:

Marks as Percentage	Grade	Grade Point
[75.0, 100]	O	10.0
[70.0, 74.9]	A+	9.0
[65.0, 69.9]	A	8.0
[60.0, 64.9]	B+	7.0
[55.0, 59.9]	B	6.0
[50.0, 54.9]	C+	5.5
[45.0, 49.9]	C	5.0
[40.0, 44.9]	D	4.5
[00.0, 39.9]	F	0.0

13. Structure of Transcript:

At the end of each semester, student will be given a transcript showing the performance and result in each course. The transcript shows, for each course the title of the course, credit values, grade in UNIVERSITY EXAMINATION , grade in INTERNAL ASSESSMENT , grade point index, result as pass or fail. Also, the semester grade point average (SGPA) and cumulative grade point average (CPGA) will be shown. Further the equivalent percentage of marks corresponding to SGPG or CGPA to equivalent percentage is given by:

$$\text{Equivalent percentage marks} = \begin{cases} 10 \times \text{CGPA} & \text{if CGPA /SGPA is in [4.00, 6.00]} \\ 05 \times \text{CGPA} + 30 & \text{if CGPA /SGPA is in [6.00, 9.00]} \\ 25 \times \text{CGPA} - 150 & \text{if CGPA /SGPA is in [9.00, 10.00]} \end{cases}$$

The above formula computes to the following table:

Range in % of Marks	Range of CGRADE POINT AVERAGE	Letter Grade	Division
[75.0, 100]	[9.00, 10.00]	O	First Class with Distinction
[70.0, 74.9]	[8.00, 8.99]	A+	
[65.0, 67.9]	[7.00, 7.99]	A	First Class
[60.0, 64.9]	[6.00,6.99]	B+	
[55.0, 59.9]	[5.50, 5.99]	B	Higher Second Class
[50.0, 54.9]	[5.00,5.49]	C+	Second Class
[45.0, 49.9]	[4.50, 4.99]	C	Pass Class
[40.0, 44.9]	[4.00, 4.49]	D	
[00.0, 39.9]	[0.00, 3.99]	F	Fail

Thus the percentage of Marks can be obtained by using the following table:

CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks
4.0	40.0	5.5	55.0	7.0	65.0	8.5	72.5
4.1	41.0	5.6	56.0	7.1	65.0	8.6	73.0
4.2	42.0	5.7	57.0	7.2	66.0	8.7	73.5
4.3	43.0	5.8	58.0	7.3	66.0	8.8	74.0
4.4	44.0	5.9	59.0	7.4	67.0	8.9	74.5
4.5	45.0	6.0	60.0	7.5	67.0	9.0	75.0
4.6	46.0	6.1	60.0	7.6	68.0	9.1	77.5
4.7	47.0	6.2	61.0	7.7	68.0	9.2	80.0
4.8	48.0	6.3	61.0	7.8	69.0	9.3	82.5
4.9	49.0	6.4	62.0	7.9	69.5	9.4	85.5
5.0	50.0	6.5	62.0	8.0	70.0	9.5	87.5
5.1	51.0	6.6	63.0	8.1	70.0	9.6	90.0
5.2	52.0	6.7	63.0	8.2	71.5	9.7	92.5
5.3	53.0	6.8	64.0	8.3	71.0	9.8	95.0
5.4	54.0	6.9	64.0	8.4	72.0	9.9	97.5
						10.0	100.0

14. Distribution of Periods:

There shall be 60 periods for each subject to cover the entire teaching of 4 credits. This will be distributed as follows:

Particulars	Periods
Teaching session per programme	48
Assignment/ Test	04
Role play/ Group Discussion	04
Case studies and presentation	04
Total	60

15. Standard of Passing.

Regular students: - A candidate is required to obtain 40% marks in each of course in both Mid Semesters and Semester end. It means passing separately at Mid-Semester and semester Examinations is compulsory.

16. Award of Class.

- The class in respect of M.Com. Examination will be awarded on the basis of aggregate marks obtained by the candidates in all the sixteen papers at the Semester I, II, III, and IV together.

The Award of class shall be as under:-

Marks Obtained	Class
70% and above	First Class with Distinction.
60% and above but less than 70%	First Class.
55% and above but less than 60%	Higher Second Class.

50% and above but less than 55%	Second Class.
40% and above but less than 50%	Pass Class.
Less than 40%	Fail.

- b. Improvement: - A candidate having passed M.Com. Examination will be allowed to improve the performance. The same is termed as 'Class Improvement Scheme' under which improvement of performance shall be allowed only at the Semester end Examination.
- c. A candidate after passing M.Com. Examination will be allowed to appear in the additional Special Subject after keeping necessary terms in the concerned special subject only, for which a passing certificate will be issued.

17. Medium of Instruction :

The use of Marathi is allowed for writing answers in the examination except for following courses:

- a. Management Accounting
- b. Financial Analysis & Control
- c. Business Statistics,
- d. Advanced Accounting and Taxation
- e. Advanced Cost Accounting and Cost Systems.

18. Qualification of the Teachers :

The Teachers recognized to teach the subjects as per Old Course shall be deemed to be recognized in the corresponding equivalent subjects under Revised Course.

In case of: A) Business Statistics, B) Industrial Economics, C) Co-operation and Rural Development, D) Advanced Banking and Finance and E) Research Methodology and Project Work- Paper-IV of each Special Subject, the following qualifications be made applicable.

- A. Business Statistics :** M.Com, M.Phil with Statistics or Research Methodology as one of the Papers at M.Com /B.Com /M. Phil examination with 5 years degree teaching experience or M.A./M.Sc. With Statistics having 5 years degree teaching experience.
- B. Industrial Economics:** M.Com., M. Phil with Business Economics/Economics of Industries or Economics as one of the papers at B. Com/ M.Com Examination with 5 years degree teaching experience or M.A. Economics with 5 years degree teaching experience.
- C. Co-operation and Rural Development:** M. Com, M. Phil. With 5 years degree teaching experience or M.A. Economics (with Co-operation Rural Economics)
- D. Advanced Banking and Finance:** M. Com., M. Phil., with Banking as one of the papers at B.Com/M.Com examination 5 years degree teaching experience.
- E. Research Methodology and Project Work:** M.Com. M.A (Eco.) M.Phil./Ph.D. with 5 years degree teaching experience.
- F.** Similarly all the changes in qualification as per U.G.C norms and guidelines shall also be applicable as and when the changes come into force (If applicable)

Revised syllabi (2019 Pattern) for two years M. Com. Course (CBCS)

Semester: I

Subject: Management Accounting

Course Code: 101

Depth of the programme: Basic Knowledge with recent advancement and its applicability

Objectives of the Programme:

1. To enhance the abilities of learners to develop the concept of management accounting and its significance in the business.
2. To enhance the abilities of learners to analyze the financial statements.
3. To enable the learners to understand, develop and apply the techniques of management accounting in the financial decision making in the business corporates.
4. To make the students develop competence with their usage in managerial decision making and control.

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Accounting for Emerging Sectors	<ol style="list-style-type: none"> 1. Limitations of conventional Financial Accounting 2. Emergence of Management Accounting and Cost Accounting 3. Advantages of Management Accounting and Cost Accounting 4. Distinction between Management Accounting and Cost Accounting 5. Management Accounting as a decision making tool 	To understand the concept of Financial Accounting and its limitations, emergence of Management Accounting and Cost Accounting, its advantages and distinction between Management Accounting and Cost Accounting.
2	Application of Management Accounting Techniques	<ol style="list-style-type: none"> 1. Marginal Costing and Cost-Volume Profit (CVP) Analysis, Key Factors 2. Decision Making through Managerial Cost Accounting (Make or Buy Decision) Purchasing and Leasing 3. Techniques and Managerial Cost Accounting 4. Standardization of Accounting System <ol style="list-style-type: none"> a. Fixed and Variable Cost Analysis b. Application of Fixed and Variable Cost Analysis technique in decision making process 	To understand the concept of Marginal Costing, its applications, different techniques of managerial cost accounting and Fixed and Variable Cost Analysis in decision making process.

3.	Budgets as a tool for Decision Making	<ol style="list-style-type: none"> 1. Budget Manual 2. Budget Committee and Budgetary Control 3. Preparation of Budget 4. Master Budget 5. Purchase and Sales Budgets 6. Fixed and Flexible Budget 7. Cash Budget 	To understand the concept of budget and budgetary control, types of budgets and preparation of functional budgets in an organization.
4.	Working Capital Management	<ol style="list-style-type: none"> 1. Concept and definition of working capital, 2. Determination of Working capital, Assessment of Working 3. Capital needs - Study of components of working capital such as cash management 4. Accounts receivable management and inventory management. 	To understand the concept of Working Capital Management, determination of working capital, components of working capital and accounts receivable and inventory management.

References

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Management Accounting	P.C. Tulsian	Tata McGraw Hill Publishing Company	New Delhi
2.	Management Accounting	A.Mukharji & M. Hanif	Tata McGraw Hill Publishing Company	New Delhi
3.	Management Accounting	S. N. Maheshwari & S.K. Maheshwari	Vikas Publishing House Pvt. Ltd.	New Delhi
4.	Advanced Accounting	M. C. Shukla & S.P. Gerwal	S. Chand and Co. Ltd.	New Delhi
5.	Advanced Accountancy	S.P. Jain & K.N. Narang	Kalyani Publishers	New Delhi

6.	Advanced Accountancy	R.L. Gupta & M. Radhaswamy	S. Chand and Co. Ltd.	New Delhi
7.	Advanced Accounting	Dr. Sadashiv Sirgave	Success Publications	Pune
8.	Principles of Management Accounting	S. N. Maheshwari	Vikas Publishing House Pvt. Ltd.	New Delhi
9.	Management Accounting	I.M. Pandey	Vikas Publishing House Pvt. Ltd.	New Delhi
10.	Advanced Management Accounting	Ravi Kishore	Taxman	New Delhi
11.	Management Accounting	Dr. Arun Gaikwad	Success Publications	Pune
12.	Management Accounting	Dr. Yashodhan Mithare	Success Publications	Pune

Suggested references
Web reference

Sr. No	Lectures	PPTs	Articles
1	Introduction to Cost & Management Accounting: CA Raj K. Agarwal (On youtube)	Management Accounting: An Introduction to concept and Methods: Igor Baranov	How do managers react to a Peer's situation? The influence of environmental similarity on budgetary reporting: James N. Cannon (https://www.sciencedirect.com/science/article/pii/S1044500518300659)
2	Decision Making	Management	The role of cognitive frames in combined decisions about risk and effort: Karla Oblak, Mina Licen and others (https://www.sciencedirect.com/science/article/pii/S1044500517300239)

	in Cost and Management Accounting: CA Naresh Agarwal (On youtube)	Accounting: James T. Mocky and Others	
3	Budget and Budgetary Control: CA Naresh Agarwal (On youtube)	Managerial Accounting: Maher, Stickney and Weil	Identity conflict and the paradox of embedded agency in the management accounting profession: Adding a new piece to the theoretical jigsaw: Kate E. Horton (https://www.sciencedirect.com/science/article/pii/S1044500516300245)
4	Working Capital Management: Shivansh Sharama (On youtube)	Study Material PPT: ICMAL,	Regulation and adaptation of management accounting innovations: The case of economic value added in Thai state-owned enterprises: Pimsiri Chiwamit and others (https://www.sciencedirect.com/science/article/pii/S1044500517300100)

Revised syllabi (2019 Pattern) for two years M.Com. Degree course (CBCS)

Semester : - I (M.Com Part – I)

Subject : - Strategic Management

Course Code - 102

Objectives of the course

- To introduce the students to the emerging changes in the modern business environment
- To develop the analytical , technical and managerial skills of students in the various areas of Business Administration
- To empower to students with necessary skill to become effective future managers and leaders
- To develop Technical skills among the students for designing and developing effective Functional strategies for growth and sustainability of business

Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Introduction to Strategic Management	Strategy - Concept and its evolution Strategic Management Characteristics , dimensions and Approaches to strategic Decision Making Strategic Management Process Components of Strategic Management Model – Policies , Role of Top Management Strategic implications of Social and Ethical Issues	Understanding of the concept of Strategic management To understand the process of Strategic Management
2	Strategy Formulation , Strategic Analysis and	Organizational Goals, Mission and Social Responsibility	Understanding the External and Internal Business Environment for effective Strategy

	<p>Strategic Planning</p>	<p>Analysis of Business Environment Internal analysis for Strategic Advantage – Strategic Planning – meaning, steps, alternatives, advantages and Disadvantages. Designing an effective Strategic Plan</p>	<p>formulation analytical skills Strategic Plan</p> <p>Development of Strategic Skills to design an effective</p>
<p>3</p>	<p>Strategic Choices and Strategy Implementation</p>	<p>Generating Strategic Alternatives for Stability, Growth and Sustainable Strategies Evaluation of Strategic Alternatives for developing Product portfolio Models and selection of Suitable Corporate Strategy Implementation issues Planning and allocation of resources Organizational Structures – factors affecting the choice , Degree of Flexibility and Autonomy</p>	<p>Development of Applicability skills for effective plan implementation Developing Technical skills for evaluation of alternatives and analytical skills for choice among alternatives</p>
<p>4</p>	<p>Functional Strategy and Strategic Review</p>	<p>Knowledge and Formulation of Functional Strategy for Marketing Environment Sustainability CSR (Corporate Social Responsibility) Human Resource Finance Logistics Evaluation of Strategic Performance – Criteria and Problems Concept of Corporate Restructuring ,Business Process Reengineering , Benchmarking , TQM and Six Sigma Chankeyaniti - A Case study approach</p>	<p>Development of Technical and Analytical abilities for formulation of sound functional Strategy in various areas of business Development of Analytical and Managerial Abilities for critical evaluation</p>

Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Power Point Presentation	PPT Online Videos	Report writing	Conceptual Clarity on Strategic management
2	12	PPT and Case Study	Case Study of any Organization	Report writing	Development effective Strategy formulation and analytical ability and Skills to design Strategic Plan
3	12	Guest Lectures by Experts from corporate	--	--	Development of Applicability skills and Technical skills
4	12	PPT , Educational Videos	Online Videos	--	Development of Technical and Analytical abilities

References :

List of Books Recommended :-

1. Strategic Management : the Indian Context – By R.Srivivasan
2. Strategic Management – By Dinesh Madan
3. Concepts in Strategic Management and Business Policy – By Thomas L. Wheelen, J. David Hunger, Alan Hoffman, Charles E. Bamford
4. Strategic Management – By Fred R. David , Forest R. David
5. Strategic Management – By Dr.C.B.Gupta
6. Introduction to Strategic Management – Dr. Arun Ingale, Success Publications.

Revised syllabi (2019Pattern) M. Com. Degree course (CBCS)

Syllabus for M.Com Part I .Semester – II

Subject Name :- Financial Analysis & Control

Compulsory Subject

Course code :- 201

Objectives of the course

- a. To enable the students to acquire knowledge of financial analysis and control tools
- b. To Make appropriate application and uses of financial analysis and control

Depth of the program – fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Fundamentals of financial analysis and control	Meaning of financial analysis and control, importance, advantages limitations& uses	Understanding basics of financial analysis.
2	Comparative and common size statement	Meaning,, importance, advantages, limitations, uses, Problems on Intra & Inter Company Comparison	To gain knowledge of practically comparing financial results of different years and different companies.
3.	Cash flow and fund flow statements	Meaning,, importance, advantages limitations, uses, Problems on Cash flow and fund flow statements	To understand the importance of cash liquidity in an organization. To understand the computation of cash and fund flows under operating, investing and financing categories.
4.	Ratio analysis and trend analysis	Meaning,, importance, advantages, limitations, uses, Problems on Ratio analysis and Trend analysis	To develop the skill of appropriate use of different ratios to evaluate the financial performance of entities.

Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Project	Expected Outcome
1	06	PowerPoint presentations		Application of IT for financial analysis
2	14	Use of MS Excel	Financial analysis of any sector (eg: Software) using common size and comparative statements as a tool of analysis.	Generate interest among students to use and apply Excel as a tool for financial analysis.
3	14	Application through money control, PPT and MS Excel	Financial analysis of any five companies using fund flow and cash flow statement as a tool of analysis	Learn to analyze and identify financially strong and weak companies
4	14		Financial analysis of peer companies using ratio analysis as a tool of analysis	Develop needed understanding and use of various ratios for financial analysis.

Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Assignment use of PowerPoint, group discussion	100% based on theory	Functioning of National Stock Exchange
Unit – II	MCQ test	30% theory 70% problems	Financial statement analysis
Unit – III	Problem solving	30% theory 70% problems	
Unit – IV	Case study	30% theory 70% problems	

References

Sr. No.	Author/s	Title of the Book	Publication	Place
1.	Ravi Kishore	Advanced Management Accounting	Taxman	New Delhi
2.	Ravi M. Kishore	Management Accounting & Financial Analysis	Taxman	New Delhi
3.	Dr.Jawahar Lal Dr. Sucheta Guaba	Financial Reporting and Analysis	Himalaya Publication House	New Delhi
4.	P Perm Chand and Madna Mohan	Financial Accounting and Analysis	Himalaya Publishing	Mumbai
5.	M.Y.Khan&P.K.Jain	Management Accounting & Financial Analysis	(Tata McGraw hill)	New Delhi
6.	Advanced Accounting	Dr. Sadashiv Sirgave	Success Publications	Pune
7.	Management Accounting	Dr. Arun Gaikwad	Success Publications	Pune
8.	Management Accounting	Dr. YashodhanMithare	Success Publications	Pune

Suggested references
Web reference

Sr. no	Lectures	Films
1	Financial Statement	https://docs.google.com/spreadsheets/d/e/2PACX-1vRgBO0bXtb52Ocx-aT7yy6j5twA-3GcgWiN5RCGboG3XTD6P5hWpG_jbz8PZA1Aw5YPI2MeEPziCyKm/pubhtml?gid=0&single=true
2	Cash Flow	https://www.investopedia.com/terms/c/cashflowfromfinancing.asp
3	Ratio Analysis	https://www.investopedia.com/financial-edge/0910/6-basic-financial-ratios-and-what-they-tell-you.aspx

M. Com. Part I (Semester II)

Compulsory Subject

Subject :- Industrial Economics
Compulsory Subject
Course Code - 202 A

Objectives of the Course

1. To provide the knowledge to the students about the basic issues of industrial economics.
2. To make aware the students about the industrial profile of India and the industrial policy of government of India.

Depth of the Program – Fundamental Knowledge

Objectives of the Program

1. To make the students understand concepts of industrial economics
2. To help the students know theories of industrial economics
3. To impart students' knowledge about sources of industrial finance and Indian industrial growth

Unit No.	Unit Title	Contents	Purpose skills to be developed
1	Introduction and Concepts	1.1 Meaning, Nature, Scope, Need and Significance of Industrial Economics 1.2 Industrial Combinations- causes, mergers and amalgamations, industrial monopoly-control of monopolies 1.3 Sellers' Concentration, Economies of Scale 1.4 Product Pricing – theories and evidence	<ul style="list-style-type: none">• To give students an overview of industrial economics• To make the students know about the concepts used in industrial economics Skills : Analytical skills, writing skills
2	Industrial Location	2.1 Factors Affecting Location of Industries 2.2 Theories of Industrial Location- Alfred Weber's theory, Sargent Florence Theory 2.3 Industrial Imbalance –Need for balanced regional industrial development-Causes and Measures of Industrial imbalance	<ul style="list-style-type: none">• To make the students understand the theories of industrial location• To impart knowledge about industrial imbalance in India Skills: Problem solving skills, ability to apply knowledge

		2.4 Regional Industrial Imbalance in India – Extent and Government Policy Measures for Balanced Regional Industrial Development	
3	Industrial Productivity, Efficiency and Size of Firm	<p>3.1 Industrial Productivity and Efficiency- Meaning, Norm, Tools and measurement of Industrial Productivity and Efficiency</p> <p>3.2 Factors Affecting Industrial Productivity and Efficiency</p> <p>3.3 Industrial Productivity in India</p> <p>3.4 Causes of Low Industrial Productivity</p> <p>3.5 Remedial measures by the government to improve industrial productivity</p> <p>3.6 Size of Firm- Determinants of Size of Firm</p> <p>3.7 Optimum Size of Firm- Meaning and its Determinants</p>	<ul style="list-style-type: none"> • To help the students know about industrial productivity and efficiency • To know about industrial productivity, size of firms etc. <p>Skills: Understand complex theories and concepts, writing skills, mathematical aptitude</p>
4	Industrial Finance and Indian Industrial Growth	<p>1 Meaning, Scope, Importance of Industrial Finance</p> <p>4.2. Sources of Industrial Finance- private, public and cooperative sector, shares, debentures, bonds, deposits, loans etc.</p> <p>4.3. Foreign Capital- need, government’s policy, direct investment, foreign institutional investment,</p>	<ul style="list-style-type: none"> • To impart knowledge about industrial finance and its sources • To help the students understand problems of small and micro industries in India <p>Skills: Critical thinking, analytical thinking, writing skills</p>

		<p>4.4 Form of Foreign Capital : Euro issues, GDR, ADR, External commercial borrowings</p> <p>4.5 Industrial policy : Trends in Industrial Growth since 1991</p> <p>4.6 Performance and Problems of Micro, Small, Medium Enterprises</p>	
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Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	<ul style="list-style-type: none"> • Open Book Discussion • Case study 		<ul style="list-style-type: none"> • Mergers and amalgamation of industries • Product pricing practices in India 	<ul style="list-style-type: none"> • Will get an overview of industrial economics • Will know about the concepts used in industrial economics
2	10	<ul style="list-style-type: none"> • Digital lectures • Group discussion 		<ul style="list-style-type: none"> • Extent of regional imbalance in India • Policies to solve industrial imbalance in India 	<ul style="list-style-type: none"> • Students will understand the theories of industrial location • Students will know about industrial imbalance in India
3	14	<ul style="list-style-type: none"> • Teacher driven power point presentation • Jigsaw reading 		<ul style="list-style-type: none"> • Study of productivity in Indian industries • Study of effect of scale 	<ul style="list-style-type: none"> • Students will know about industrial productivity and efficiency • Students will know about industrial productivity,

					size of firms etc.
4	14	<ul style="list-style-type: none"> • Case studies • Interactive learning • Pair learning 		<ul style="list-style-type: none"> • Growth of medium and small enterprises in India • Impact of Industrial policy 1991 	<ul style="list-style-type: none"> • Students will know about industrial finance and its sources • Students will understand problems of small and micro industries in India

Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	11	11	Business or industrial economics course
Unit – II	11	11	
Unit – III	14	14	
Unit – IV	14	14	

References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Industrial Economics: Indian Perspective	Cherunilam, F.	Himalaya Publishing house.	Mumbai
2	Industrial Economy of India	Sivaya, K.V. and Das	VBM (latest Edition), Sultan Chand	Mumbai

3	Industrial Ecoomics	Sing, A. and A.N.Sadhu	Himalaya Publishing House	Mumbai
4	Industrial Growth in India - Stagnation since Mid-sixties	Ahluwalia, I.J.	Oxford University Press	New Delhi
5	Performance Appraisal of PEs in India: Conceptual Approach", in Public Enterprises in India	Jyotsna and Narayan B	Chug Publications	Allahabad
6	Industrial Economics,	Burthwal, R.R	Wiley Eastern Ltd	New Delhi

Suggested references Web reference

Sr. no	Lectures	PPTs	Articles
1	https://www.economicsnetwork.ac.uk/teaching/Lecture%20Slides/Industrial%20Economics	http://www.powershow.com/view/26979b-MGI2M/INDUSTRIAL_ECONOMICS_powerpoint_ppt_presentation	https://onlinelibrary.wiley.com/journal/14676451
2	https://www.studocu.com/en/document/university-of-nottingham/industrial-economics/lecture-notes/lecture-notes-lectures-1-10/594973/view	http://www.staff.city.ac.uk/~sj355/INDUSTRIAL%20intro.ppt	https://onlinelibrary.wiley.com/loi/14676451
3	https://www.hse.ru/data/2010/10/22/1224130267/BSc4_industrial_en.pdf	https://slideplayer.com/slide/11650124/	https://econpapers.repec.org/article/blajindec/

M. Com. Part I (Semester II)

Compulsory Subject



SAVITRIBAI PHULE PUNE UNIVERSITY

Revised Syllabus of Master of Commerce (M.Com.) Semester Pattern with Credit System with effect from June 2019

The M. Com. Syllabus for regular students is being revised from the academic year 2019-20. The course structure is as below:-

1. Objectives :

- To equip and train Post Graduate students to accept the challenges of business world by providing opportunities for study and analysis of advanced commercial and business methods and processes.
- To develop independent logical thinking and facilitate personality development.
- To equip the students to seek suitable careers in management and entrepreneurship.
- To acquaint students with significance of research in business.
- To impart skills regarding methods of data collection and their interpretations.
- To develop communication and analytical skills among students.

2. Duration :

The M.Com. Course will be of Two Years duration consisting of two part. I.e. Part I and Part II. Each part is having Two Semesters.

Thus, the M.Com. Course is of Four Semesters. For each Semester, there will be Four Papers of 100 marks each. M.Com. Degree will be of 1600 marks in aggregate.

3. Duration and Structure of Programme:

The M.Com (Semester pattern with Credit System) degree Programme shall be of 2 years' duration divided into two parts, Part I and Part II, and 4 semesters.

4. Eligibility :

The student who has passed any Bachelors degree of this University or any other recognized University shall be held eligible to be admitted to M.Com. Course.

5. Course Structure:

The M.Com. degree course will be of two year duration consisting of four semesters and of minimum 64 credits as below:

Sr. No.	Semester	Total Credits
1	Semester I	16
2	Semester II	16
3	Semester III	16
4	Semester IV	16
	Grand Total	64

Four extra credits for project work at 4th Semester (This will include credits for fieldwork, data presentation and report writing)

In each Semester, there will be four papers of 100 marks each out of which **40 marks will be for Internal Assessment** (attendance, home assignments, class tests, long term papers, classroom presentation and **60 marks for University Examination**. Thus M.Com. degree examination, four Semesters shall be of 1600 marks.

In addition to the above, students are required to secure following ten credits. These credits are compulsory in nature.

Semester	Human Rights	Introduction to cyber security / information security	Skill development	Total Credits
I	1 credit	1 credit	--	2 credits
II	1 credit	1 credit	--	2 credits
III	--	1 credit	2 credits	3 credits
IV	--	1 credit	2 credits	3 credits
Total Credits	2 credits	4 credits	4 credits	10 credits

- Syllabus and other details regarding 'Human Rights' has been displayed on the home page of the university website.
- Syllabus and other details regarding '**Introduction to cyber security / information security**' has been displayed on the 'syllabi' page of the university website.

6. The Scheme of Papers: The following will be the Scheme of papers:

The List of Courses

Semester I

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester I	Core Compulsory	101	Management Accounting	04	04	03	40	60	100	
		102	Strategic Management	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		Group A (Advanced Accounting & Taxation)								
		103	Advanced Accounting	04	04	03	40	60	100	
		104	Income Tax	04	04	03	40	60	100	
		Group B (Commercial Laws & Practices)								
		105	Information system and E-Commerce Practices	04	04	03	40	60	100	
		106	Intellectual Property Laws	04	04	03	40	60	100	
		Group C (Advanced Cost Accounting & Cost system)								
		107	Advanced Cost Accounting	04	04	03	40	60	100	
		108	Costing Technique Examination s and Responsibility Accounting	04	04	03	40	60	100	
		Group D (Co-operation & Rural Development)								
		109	Co-operative Movement in India	04	04	03	40	60	100	
		110	Rural Development	04	04	03	40	60	100	
		Group E (Business Practices & Environment)								
		111	Organized Traders and Markets	04	04	03	40	60	100	
		112	Business Environment and Policy	04	04	03	40	60	100	
		Group F (Business Administration)								
		113	Production and Operation Management	04	04	03	40	60	100	
114	Financial Management	04	04	03	40	60	100			
Group G (Advanced Banking & Finance)										
115	Legal Framework of Banking	04	04	03	40	60	100			
116	Central Banking	04	04	03	40	60	100			
Group H (Advanced Marketing)										
117	Marketing Techniques	04	04	03	40	60	100			
118	Consumer Behaviour	04	04	03	40	60	100			

Semester II

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester II	Core Compulsory	201	Financial Analysis and Control/ Principals of Financial Accounting	04	04	03	40	60	100	
		202	A. Industrial Economics B. Business Statistics	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		Group A (Advanced Accounting & Taxation)								
		203	Specialized Areas in Accounting	04	04	03	40	60	100	
		204	Business Tax Assessment & Planning	04	04	03	40	60	100	
		Group B (Commercial Laws & Practices)								
		205	E- Security & Cyber Laws	04	04	03	40	60	100	
		206	Laws Regulating to Copyrights & Design	04	04	03	40	60	100	
		Group C (Advanced Cost Accounting & Cost system)								
		207	Application Cost Accounting	04	04	03	40	60	100	
		208	Cost Control & Cost System	04	04	03	40	60	100	
		Group D (Co-operation & Rural Development)								
		209	International Co-operative Movement	04	04	03	40	60	100	
		210	Management of Co-operative Business	04	04	03	40	60	100	
		Group E (Business Practices & Environment)								
		211	Modern Business Practices	04	04	03	40	60	100	
		212	Business Environment Analysis	04	04	03	40	60	100	
		Group F (Business Administration)								
		213	Business Ethics & Professional Value	04	04	03	40	60	100	
214	Elements of Knowledge Management	04	04	03	40	60	100			
Group G (Advanced Banking & Finance)										
215	Banking Law & Practices	04	04	03	40	60	100			
216	Monetary Policy	04	04	03	40	60	100			
Group H (Advanced Marketing)										
217	Customer Relationship Management & Retailing	04	04	03	40	60	100			
218	Services Marketing	04	04	03	40	60	100			

7. Scheme of Examination:

The examination of regular students of M.Com. degree course of the University of Pune admitted in the academic session 2019-20 and after shall be based on:

- (a) Semester Examination
- (b) Continuous Assessment
- (c) Choice Based Credit System, and
- (d) Semester Grade Point Average and Cumulative Grade Point Average System

For each paper of 100 marks, there will be an Internal Assessment (1A) of 40 marks and the University Examination (UE) of 60 marks/ 3 hours duration at the end of each semester. A candidate who will secure at least 40% marks allotted to each paper will be given 4 credits. A candidate who does not pass the examination in any subject or subjects in one semester will be permitted to appear in such failed subject or subjects along with the papers of following semesters.

The Internal Assessment for each paper will be 40 marks, which will be carried out by the department during the term. The Internal Assessment may be in the forms of written test, seminars, term papers, presentations, assignments, orals or any such others. The distribution of internal assessment marks shall be as follows:

Midterm Test	20
Presentation/Role Play	10
Case studies/ Group Discussion	10

There shall be four semester examinations: first semester examination at the middle of the first academic year and the second semester examination at the end of the first academic year. Similarly, the third and fourth semester examinations shall be held at the middle and the end of the second academic year, respectively.

The candidates shall be permitted to proceed from the first semester up to final semester irrespective of their failure in any of the semester examinations subject to the condition that the candidates should register for all the arrear subjects of earlier semesters along with current (Subsequent) semester subjects.

8. Research project work:

There will be a Research Project to be prepared by a student during the fourth semester. The objective of the project work is to introduce students to research methodology in the subject and prepare them for pursuing research in theoretical or experimental or computational areas of the subject. The project work is to be undertaken under guidance of a teacher allotted to a student by the department.

Division of marks	Marks
Synopsis with working bibliography (Internal Assessment)	40 marks
A full project Report (Minimum 50-80 pages)	40 marks
Viva Voce	20 marks

Total	100 marks
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As the Research Project is based on the self-study done by the candidate and evaluated for 100 marks altogether, having four credits. The project may be evaluated by two examiners one internal and one external, selected from the panel of PG examiners of the University. The Viva voce must be conducted by the teachers selected out of the panel of PG examiners maintained by the University.

The candidates have to submit the project 15 days before the commencement of the fourth semester university examination. The project report shall be type-written and submitted in duplicate. A candidate who fails to submit the project may resubmit the same in the subsequent semester examination for evaluation. The project work activities must be duly supported by documentary evidence to be endorsed by the Head or Guide.

9. Standard of passing:

A candidate shall be declared to have passed in the paper provided he/she has secured minimum GP of 4.5 in the UNIVERSITY EXAMINATION and GRADE POINT AVERAGE of 4.0 in aggregate of UNIVERSITY GRADE and INTERNAL ASSESSMENT taken together.

10. Classification of successful candidates:

Candidates who secured not less than 60% of aggregate marks (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) in the whole examination shall be declared to have passed the examination in the first class. All other successful candidates shall be declared to have passed in second class. Candidates who obtain 70% of the marks in the aggregate (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) shall be deemed to have passed the examination in first class with distinction.

A student who passes in all the courses will be declared to have passed the M.Com. degree with the following honors.

CGPA in (4.00, 4.99)	- Pass Class
CGPA in (5.00, 5.49)	- Second Class
CGPA in (5.50, 5.99)	- Higher Second Class
CGPA in (6.00, 7.99)	- First Class
CGPA in (8.00, 10.00)	- First Class with Distinction

11. Scheme of Credits:

Sixty (60) hours of teaching will lead to four credits (which mean four hours per week teaching in one semester) and long term paper as well as presentation will carry one credit. Each semester shall offer 16 credits or more.

12. Grade Points Scheme:

The term grading system indicates a 10 – points scale of evaluation of the performance of students in terms of marks obtained in the Internal and External Examination, grade points and letter grade. The total performance within a semester and continuous performance starting from the first semester are indicated respectively by Grade Point

Average (GPA) and Cumulative Grade Point Average (CGPA). Candidates who pass all the examinations prescribed for the course in the first appearance itself alone are eligible for Ranking.

The 10-point scale would be used to convert marks out of 100 to grades and grade points according to the following table:

Marks as Percentage	Grade	Grade Point
[75.0, 100]	O	10.0
[70.0, 74.9]	A+	9.0
[65.0, 69.9]	A	8.0
[60.0, 64.9]	B+	7.0
[55.0, 59.9]	B	6.0
[50.0, 54.9]	C+	5.5
[45.0, 49.9]	C	5.0
[40.0, 44.9]	D	4.5
[00.0, 39.9]	F	0.0

13. Structure of Transcript:

At the end of each semester, student will be given a transcript showing the performance and result in each course. The transcript shows, for each course the title of the course, credit values, grade in UNIVERSITY EXAMINATION , grade in INTERNAL ASSESSMENT , grade point index, result as pass or fail. Also, the semester grade point average (SGPA) and cumulative grade point average (CPGA) will be shown. Further the equivalent percentage of marks corresponding to SGPG or CGPA to equivalent percentage is given by:

$$\text{Equivalent percentage marks} = \begin{cases} 10 \times \text{CGPA} & \text{if CGPA /SGPA is in } [4.00, 6.00] \\ 05 \times \text{CGPA} + 30 & \text{if CGPA /SGPA is in } [6.00, 9.00] \\ 25 \times \text{CGPA} - 150 & \text{if CGPA /SGPA is in } [9.00, 10.00] \end{cases}$$

The above formula computes to the following table:

Range in % of Marks	Range of CGRADE POINT AVERAGE	Letter Grade	Division
[75.0, 100]	[9.00, 10.00]	O	First Class with Distinction
[70.0, 74.9]	[8.00, 8.99]	A+	
[65.0, 67.9]	[7.00, 7.99]	A	First Class
[60.0, 64.9]	[6.00,6.99]	B+	
[55.0, 59.9]	[5.50, 5.99]	B	Higher Second Class
[50.0, 54.9]	[5.00,5.49]	C+	Second Class
[45.0, 49.9]	[4.50, 4.99]	C	Pass Class
[40.0, 44.9]	[4.00, 4.49]	D	
[00.0, 39.9]	[0.00, 3.99]	F	Fail

Thus the percentage of Marks can be obtained by using the following table:

CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks
4.0	40.0	5.5	55.0	7.0	65.0	8.5	72.5
4.1	41.0	5.6	56.0	7.1	65.0	8.6	73.0
4.2	42.0	5.7	57.0	7.2	66.0	8.7	73.5
4.3	43.0	5.8	58.0	7.3	66.0	8.8	74.0
4.4	44.0	5.9	59.0	7.4	67.0	8.9	74.5
4.5	45.0	6.0	60.0	7.5	67.0	9.0	75.0
4.6	46.0	6.1	60.0	7.6	68.0	9.1	77.5
4.7	47.0	6.2	61.0	7.7	68.0	9.2	80.0
4.8	48.0	6.3	61.0	7.8	69.0	9.3	82.5
4.9	49.0	6.4	62.0	7.9	69.5	9.4	85.5
5.0	50.0	6.5	62.0	8.0	70.0	9.5	87.5
5.1	51.0	6.6	63.0	8.1	70.0	9.6	90.0
5.2	52.0	6.7	63.0	8.2	71.5	9.7	92.5
5.3	53.0	6.8	64.0	8.3	71.0	9.8	95.0
5.4	54.0	6.9	64.0	8.4	72.0	9.9	97.5
						10.0	100.0

14. Distribution of Periods:

There shall be 60 periods for each subject to cover the entire teaching of 4 credits. This will be distributed as follows:

Particulars	Periods
Teaching session per programme	48
Assignment/ Test	04
Role play/ Group Discussion	04
Case studies and presentation	04
Total	60

15. Standard of Passing.

Regular students: - A candidate is required to obtain 40% marks in each of course in both Mid Semesters and Semester end. It means passing separately at Mid-Semester and semester Examinations is compulsory.

16. Award of Class.

- The class in respect of M.Com. Examination will be awarded on the basis of aggregate marks obtained by the candidates in all the sixteen papers at the Semester I, II, III, and IV together.

The Award of class shall be as under:-

Marks Obtained	Class
70% and above	First Class with Distinction.
60% and above but less than 70%	First Class.
55% and above but less than 60%	Higher Second Class.

Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)

Semester: - I

Group – F (Business Administration)

Subject Name - Business Administration Special Paper I

Subject Title: - Production & Operation Management

Course Code - 113

Objectives of the course

- To understand and develop deep insight of Production & Operation Management.
- To understand & identify business problems involving operational function, planning and control, design development and quality management.
- Demonstrate awareness and importance of application, operation and supply chain management.
- To develop skills necessary to effectively analyze and synthesize the many inter relationships inherent in complex socio-economic productive systems.
- To increase the knowledge and perspective to gain from emerging trends in production and operation management.

Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Production and Operation Management : An Overview	<p>a. <u>Production and Operation Management</u> : Meaning ,importance , Functions , Types of Production Systems – Mass Production /Flow Line , Continuous, Intermittent , Batch Production , Job Lots etc.</p> <p>b. Service Systems – Recent trends in production and service systems</p> <p>c. Plant Layout – Objectives , basic principles and types</p> <p>d. Safety Considerations and environmental aspects</p>	<ul style="list-style-type: none"> • Acquaint the students knowledge about Production and Operation Management. • Recognize the inherent conflict of interest in many business decisions relating to safety consideration and environmental aspects.
2	Supply Chain Management	<p>a. Supply chain Management : Introduction , Scope, Components, Process of Supply Chain Management.</p> <p>b. Tools and Techniques of Supply Chain Management , Performance Measurement and implementation.</p> <p>c. Career opportunities in Supply Chain Management</p>	<ul style="list-style-type: none"> • Understanding the scope and Process of Supply Chain Management • Knowledge on various career opportunities in
3	Production Planning and Control	<p>a. Production Planning : Meaning , Objectives , Importance and its components</p> <p>b. Production Control : Meaning , Objectives, Significance and factors affecting Production Control.</p> <p>c. Product Design and Development – Concept , Process and factors affecting product development</p>	<ul style="list-style-type: none"> • Acquaint the students with knowledge of Production Planning and Control. • Motivate the students to develop and innovate ideas for Product Design and Development

<p style="text-align: center;">4</p>	<p style="text-align: center;">Total Quality Management and Emerging Issues</p>	<p>a. Total Quality Management – Meaning, Dimensions , Objectives and importance</p> <p>b. Emerging Issues in Production and Operations Management –</p> <ol style="list-style-type: none"> i. Mobile Accessibility ii. Atomization of Operational Processes iii. Employee empowerment iv. Outsourcing v. Waste Management 	<ul style="list-style-type: none"> • Recognize the importance of Total Quality Management • Identification of emerging issues in Production and operation Management
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Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Article Review , Group Discussion , Quiz	Documentary	Report on the Review of Article	Conceptual Clarity
2	12	Survey Report , Poster Presentation , Guest Lecture	Documentary	Survey Report / Poster Presentation	Awareness on Career opportunities in Supply Chain Management Introduction to Alternative Career opportunities
3	12	Interview , Game , PPT , Narrating	Documentary	Report Writing	Development of Innovative abilities and Application oriented skills
4	12	Project making , street Play , Jingles making	Documentary	Project	Awareness on the recent and emerging areas Change in overall perception towards quality enhancement

Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Continuous Evaluation	Written exam	Related Short Term Course/ Seminar/ Workshop
Unit – II	Continuous Evaluation	Written exam	Related Short Term Course/ Seminar/ Workshop
Unit – III	Continuous Evaluation	Written exam	Related Short Term Course/ Seminar/ Workshop
Unit – IV	Continuous Evaluation	Written exam	Related Short Term Course/ Seminar/ Workshop

References :

List of Books Recommended :-

1. Production and Operation Management – By B.S.Goel (Pragati Prakashan)
2. Production and Operation Management – By S.N. Chary (Tata Mcgraw Hill)
3. Modern Production and Operation Management – By Elword Buffa
4. Production Planning and Inventory Control – By Magee Budman (Tata Mcgraw Hill)
5. Essentials of Business Administration – By K.A. Shantappa
6. A Key of Production Management – By Kalyani Publication

Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)

Semester: - I

Group – F (Business Administration)

Subject Name - Business Administration Special Paper II

Subject Title: - Financial Management

Course Code - 114

Objectives of the course

- To acquaint the student with knowledge of various Financial Management terminologies (Investment ,Credit Planning , Working Capital Management
 - To understand the concepts relating to Financing & Financial Statement Analysis
 - To utilize the information gathered to reach an optimum conclusion by a process of reasoning
 - To enable the students to use their learning to evaluate , make decisions and provide recommendations
- Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Introduction	Meaning and objectives of Financial Management , Financial systems in India – RBI , SEBI. New trends in Financial Management	<ul style="list-style-type: none">• Understanding Financial Management• Recognizing the Financial System of India.
2	Financial Statements & Financial Analysis	Concept of Financial Statements – Income and Balance Statements Financial Analysis – Types and Techniques	<ul style="list-style-type: none">• Understanding Financial Statements• Analyzing the Financial Statements
3	Investment Decisions	Capital Expenditure, Capital Budgeting, Investment techniques of Capital Budgeting, Investment	<ul style="list-style-type: none">• To enable the students to make Investment Decisions

	Decision Methods – Payback , Net Present Value , A.R.R and I.R.R	<ul style="list-style-type: none"> To study the Capital Budgeting Techniques
4	Working Capital & Credit Management Meaning and Nature of Working Capital and Factors affecting Working Capital Formulation of Credit Policy , Collection Policy , Accounts Receivable Management, Factoring and Lease Financing	<ul style="list-style-type: none"> To understand the meaning and nature of Working Capital To enable the students to formulate Credit and Collection policy

Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Project	Expected Outcome
1	08	Lecture Methods	Individual assignment report	Developing understanding on Financial Management
2	14	Lectures Method Guest Lectures by subject Experts	Case analysis and Discussions	Developing Financial Statement analysis skills
3	14	Case analysis Internet Research	Article Review Survey analysis	Developing Decision making Skills
4	12	Survey analysis , Assignments , Field Visits	Field Visit Article Review	Developing skills for effective Credit and Working Capital Management

Suggested Add on Course
Add on course on share market
Basic Statistical Analysis Certificate Course
Short term course on Capital Budgeting Techniques
Certificate course on Working Capital Management

References :

List of Books Recommended :-

7. Financial Management – By M.Y.Khan and P.K. Jain (Tata Mcgraw Hill)
8. Financial Management – By I.M.Pandey (Vikas Publishing House)
9. Financial Management – By Prasanna Chnadra (Tata Mcgraw Hill)
10. Financial Management – By P. V. Kulkarni (Himalaya Publishing House)
11. Financial Management – By Prasanna Chnadra (Tata Mcgraw Hill)
12. The Indian Financial System – By Bharati Pathak (Dorling Kindersley Pvt. Ltd.)
13. Financial Policy and Management Accountant – By Bhabatosh Banerjee(PHI Learning Pvt. Ltd.)
14. Introduction to Lease Financing – By Rajas Parchure , N. Ashok(Time Research Foundation)
15. Credit Management – By Herbert Edwards (Coles Publishing Co. Ltd.)
16. Financial Management – Dr. Parag Kalkar, Success Publications.



SAVITRIBAI PHULE PUNE UNIVERSITY

Revised Syllabus of Master of Commerce (M.Com.) Semester Pattern with Credit System with effect from June 2019

The M. Com. Syllabus for regular students is being revised from the academic year 2019-20. The course structure is as below:-

1. Objectives :

- To equip and train Post Graduate students to accept the challenges of business world by providing opportunities for study and analysis of advanced commercial and business methods and processes.
- To develop independent logical thinking and facilitate personality development.
- To equip the students to seek suitable careers in management and entrepreneurship.
- To acquaint students with significance of research in business.
- To impart skills regarding methods of data collection and their interpretations.
- To develop communication and analytical skills among students.

2. Duration :

The M.Com. Course will be of Two Years duration consisting of two part. I.e. Part I and Part II. Each part is having Two Semesters.

Thus, the M.Com. Course is of Four Semesters. For each Semester, there will be Four Papers of 100 marks each. M.Com. Degree will be of 1600 marks in aggregate.

3. Duration and Structure of Programme:

The M.Com (Semester pattern with Credit System) degree Programme shall be of 2 years' duration divided into two parts, Part I and Part II, and 4 semesters.

4. Eligibility :

The student who has passed any Bachelors degree of this University or any other recognized University shall be held eligible to be admitted to M.Com. Course.

5. Course Structure:

The M.Com. degree course will be of two year duration consisting of four semesters and of minimum 64 credits as below:

Sr. No.	Semester	Total Credits
1	Semester I	16
2	Semester II	16
3	Semester III	16
4	Semester IV	16
	Grand Total	64

Four extra credits for project work at 4th Semester (This will include credits for fieldwork, data presentation and report writing)

In each Semester, there will be four papers of 100 marks each out of which **40 marks will be for Internal Assessment** (attendance, home assignments, class tests, long term papers, classroom presentation and **60 marks for University Examination**. Thus M.Com. degree examination, four Semesters shall be of 1600 marks.

In addition to the above, students are required to secure following ten credits. These credits are compulsory in nature.

Semester	Human Rights	Introduction to cyber security / information security	Skill development	Total Credits
I	1 credit	1 credit	--	2 credits
II	1 credit	1 credit	--	2 credits
III	--	1 credit	2 credits	3 credits
IV	--	1 credit	2 credits	3 credits
Total Credits	2 credits	4 credits	4 credits	10 credits

- Syllabus and other details regarding 'Human Rights' has been displayed on the home page of the university website.
- Syllabus and other details regarding '**Introduction to cyber security / information security**' has been displayed on the 'syllabi' page of the university website.

6. The Scheme of Papers: The following will be the Scheme of papers:

The List of Courses

Semester I

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester I	Core Compulsory	101	Management Accounting	04	04	03	40	60	100	
		102	Strategic Management	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		Group A (Advanced Accounting & Taxation)								
		103	Advanced Accounting	04	04	03	40	60	100	
		104	Income Tax	04	04	03	40	60	100	
		Group B (Commercial Laws & Practices)								
		105	Information system and E-Commerce Practices	04	04	03	40	60	100	
		106	Intellectual Property Laws	04	04	03	40	60	100	
		Group C (Advanced Cost Accounting & Cost system)								
		107	Advanced Cost Accounting	04	04	03	40	60	100	
		108	Costing Technique Examination s and Responsibility Accounting	04	04	03	40	60	100	
		Group D (Co-operation & Rural Development)								
		109	Co-operative Movement in India	04	04	03	40	60	100	
		110	Rural Development	04	04	03	40	60	100	
		Group E (Business Practices & Environment)								
		111	Organized Traders and Markets	04	04	03	40	60	100	
		112	Business Environment and Policy	04	04	03	40	60	100	
		Group F (Business Administration)								
		113	Production and Operation Management	04	04	03	40	60	100	
114	Financial Management	04	04	03	40	60	100			
Group G (Advanced Banking & Finance)										
115	Legal Framework of Banking	04	04	03	40	60	100			
116	Central Banking	04	04	03	40	60	100			
Group H (Advanced Marketing)										
117	Marketing Techniques	04	04	03	40	60	100			
118	Consumer Behaviour	04	04	03	40	60	100			

Semester II

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester II	Core Compulsory	201	Financial Analysis and Control/ Principals of Financial Accounting	04	04	03	40	60	100	
		202	A. Industrial Economics B. Business Statistics	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		Group A (Advanced Accounting & Taxation)								
		203	Specialized Areas in Accounting	04	04	03	40	60	100	
		204	Business Tax Assessment & Planning	04	04	03	40	60	100	
		Group B (Commercial Laws & Practices)								
		205	E- Security & Cyber Laws	04	04	03	40	60	100	
		206	Laws Regulating to Copyrights & Design	04	04	03	40	60	100	
		Group C (Advanced Cost Accounting & Cost system)								
		207	Application Cost Accounting	04	04	03	40	60	100	
		208	Cost Control & Cost System	04	04	03	40	60	100	
		Group D (Co-operation & Rural Development)								
		209	International Co-operative Movement	04	04	03	40	60	100	
		210	Management of Co-operative Business	04	04	03	40	60	100	
		Group E (Business Practices & Environment)								
		211	Modern Business Practices	04	04	03	40	60	100	
		212	Business Environment Analysis	04	04	03	40	60	100	
		Group F (Business Administration)								
		213	Business Ethics & Professional Value	04	04	03	40	60	100	
214	Elements of Knowledge Management	04	04	03	40	60	100			
Group G (Advanced Banking & Finance)										
215	Banking Law & Practices	04	04	03	40	60	100			
216	Monetary Policy	04	04	03	40	60	100			
Group H (Advanced Marketing)										
217	Customer Relationship Management & Retailing	04	04	03	40	60	100			
218	Services Marketing	04	04	03	40	60	100			

7. Scheme of Examination:

The examination of regular students of M.Com. degree course of the University of Pune admitted in the academic session 2019-20 and after shall be based on:

- (a) Semester Examination
- (b) Continuous Assessment
- (c) Choice Based Credit System, and
- (d) Semester Grade Point Average and Cumulative Grade Point Average System

For each paper of 100 marks, there will be an Internal Assessment (1A) of 40 marks and the University Examination (UE) of 60 marks/ 3 hours duration at the end of each semester. A candidate who will secure at least 40% marks allotted to each paper will be given 4 credits. A candidate who does not pass the examination in any subject or subjects in one semester will be permitted to appear in such failed subject or subjects along with the papers of following semesters.

The Internal Assessment for each paper will be 40 marks, which will be carried out by the department during the term. The Internal Assessment may be in the forms of written test, seminars, term papers, presentations, assignments, orals or any such others. The distribution of internal assessment marks shall be as follows:

Midterm Test	20
Presentation/Role Play	10
Case studies/ Group Discussion	10

There shall be four semester examinations: first semester examination at the middle of the first academic year and the second semester examination at the end of the first academic year. Similarly, the third and fourth semester examinations shall be held at the middle and the end of the second academic year, respectively.

The candidates shall be permitted to proceed from the first semester up to final semester irrespective of their failure in any of the semester examinations subject to the condition that the candidates should register for all the arrear subjects of earlier semesters along with current (Subsequent) semester subjects.

8. Research project work:

There will be a Research Project to be prepared by a student during the fourth semester. The objective of the project work is to introduce students to research methodology in the subject and prepare them for pursuing research in theoretical or experimental or computational areas of the subject. The project work is to be undertaken under guidance of a teacher allotted to a student by the department.

Division of marks	Marks
Synopsis with working bibliography (Internal Assessment)	40 marks
A full project Report (Minimum 50-80 pages)	40 marks
Viva Voce	20 marks

Total	100 marks
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As the Research Project is based on the self-study done by the candidate and evaluated for 100 marks altogether, having four credits. The project may be evaluated by two examiners one internal and one external, selected from the panel of PG examiners of the University. The Viva voce must be conducted by the teachers selected out of the panel of PG examiners maintained by the University.

The candidates have to submit the project 15 days before the commencement of the fourth semester university examination. The project report shall be type-written and submitted in duplicate. A candidate who fails to submit the project may resubmit the same in the subsequent semester examination for evaluation. The project work activities must be duly supported by documentary evidence to be endorsed by the Head or Guide.

9. Standard of passing:

A candidate shall be declared to have passed in the paper provided he/she has secured minimum GP of 4.5 in the UNIVERSITY EXAMINATION and GRADE POINT AVERAGE of 4.0 in aggregate of UNIVERSITY GRADE and INTERNAL ASSESSMENT taken together.

10. Classification of successful candidates:

Candidates who secured not less than 60% of aggregate marks (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) in the whole examination shall be declared to have passed the examination in the first class. All other successful candidates shall be declared to have passed in second class. Candidates who obtain 70% of the marks in the aggregate (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) shall be deemed to have passed the examination in first class with distinction.

A student who passes in all the courses will be declared to have passed the M.Com. degree with the following honors.

CGPA in (4.00, 4.99)	- Pass Class
CGPA in (5.00, 5.49)	- Second Class
CGPA in (5.50, 5.99)	- Higher Second Class
CGPA in (6.00, 7.99)	- First Class
CGPA in (8.00, 10.00)	- First Class with Distinction

11. Scheme of Credits:

Sixty (60) hours of teaching will lead to four credits (which mean four hours per week teaching in one semester) and long term paper as well as presentation will carry one credit. Each semester shall offer 16 credits or more.

12. Grade Points Scheme:

The term grading system indicates a 10 – points scale of evaluation of the performance of students in terms of marks obtained in the Internal and External Examination, grade points and letter grade. The total performance within a semester and continuous performance starting from the first semester are indicated respectively by Grade Point

Average (GPA) and Cumulative Grade Point Average (CGPA). Candidates who pass all the examinations prescribed for the course in the first appearance itself alone are eligible for Ranking.

The 10-point scale would be used to convert marks out of 100 to grades and grade points according to the following table:

Marks as Percentage	Grade	Grade Point
[75.0, 100]	O	10.0
[70.0, 74.9]	A+	9.0
[65.0, 69.9]	A	8.0
[60.0, 64.9]	B+	7.0
[55.0, 59.9]	B	6.0
[50.0, 54.9]	C+	5.5
[45.0, 49.9]	C	5.0
[40.0, 44.9]	D	4.5
[00.0, 39.9]	F	0.0

13. Structure of Transcript:

At the end of each semester, student will be given a transcript showing the performance and result in each course. The transcript shows, for each course the title of the course, credit values, grade in UNIVERSITY EXAMINATION , grade in INTERNAL ASSESSMENT , grade point index, result as pass or fail. Also, the semester grade point average (SGPA) and cumulative grade point average (CPGA) will be shown. Further the equivalent percentage of marks corresponding to SGPG or CGPA to equivalent percentage is given by:

$$\text{Equivalent percentage marks} = \begin{cases} 10 \times \text{CGPA} & \text{if CGPA /SGPA is in } [4.00, 6.00] \\ 05 \times \text{CGPA} + 30 & \text{if CGPA /SGPA is in } [6.00, 9.00] \\ 25 \times \text{CGPA} - 150 & \text{if CGPA /SGPA is in } [9.00, 10.00] \end{cases}$$

The above formula computes to the following table:

Range in % of Marks	Range of CGRADE POINT AVERAGE	Letter Grade	Division
[75.0, 100]	[9.00, 10.00]	O	First Class with Distinction
[70.0, 74.9]	[8.00, 8.99]	A+	
[65.0, 67.9]	[7.00, 7.99]	A	First Class
[60.0, 64.9]	[6.00,6.99]	B+	
[55.0, 59.9]	[5.50, 5.99]	B	Higher Second Class
[50.0, 54.9]	[5.00,5.49]	C+	Second Class
[45.0, 49.9]	[4.50, 4.99]	C	Pass Class
[40.0, 44.9]	[4.00, 4.49]	D	
[00.0, 39.9]	[0.00, 3.99]	F	Fail

Thus the percentage of Marks can be obtained by using the following table:

CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks
4.0	40.0	5.5	55.0	7.0	65.0	8.5	72.5
4.1	41.0	5.6	56.0	7.1	65.0	8.6	73.0
4.2	42.0	5.7	57.0	7.2	66.0	8.7	73.5
4.3	43.0	5.8	58.0	7.3	66.0	8.8	74.0
4.4	44.0	5.9	59.0	7.4	67.0	8.9	74.5
4.5	45.0	6.0	60.0	7.5	67.0	9.0	75.0
4.6	46.0	6.1	60.0	7.6	68.0	9.1	77.5
4.7	47.0	6.2	61.0	7.7	68.0	9.2	80.0
4.8	48.0	6.3	61.0	7.8	69.0	9.3	82.5
4.9	49.0	6.4	62.0	7.9	69.5	9.4	85.5
5.0	50.0	6.5	62.0	8.0	70.0	9.5	87.5
5.1	51.0	6.6	63.0	8.1	70.0	9.6	90.0
5.2	52.0	6.7	63.0	8.2	71.5	9.7	92.5
5.3	53.0	6.8	64.0	8.3	71.0	9.8	95.0
5.4	54.0	6.9	64.0	8.4	72.0	9.9	97.5
						10.0	100.0

14. Distribution of Periods:

There shall be 60 periods for each subject to cover the entire teaching of 4 credits. This will be distributed as follows:

Particulars	Periods
Teaching session per programme	48
Assignment/ Test	04
Role play/ Group Discussion	04
Case studies and presentation	04
Total	60

15. Standard of Passing.

Regular students: - A candidate is required to obtain 40% marks in each of course in both Mid Semesters and Semester end. It means passing separately at Mid-Semester and semester Examinations is compulsory.

16. Award of Class.

- The class in respect of M.Com. Examination will be awarded on the basis of aggregate marks obtained by the candidates in all the sixteen papers at the Semester I, II, III, and IV together.

The Award of class shall be as under:-

Marks Obtained	Class
70% and above	First Class with Distinction.
60% and above but less than 70%	First Class.
55% and above but less than 60%	Higher Second Class.

M. Com. Part I (Semester II)
Group F (Business Administration) - Special Paper III

Subject : - Business Ethics & Professional Values

Course Code No: 213

Objectives of the course

1. To raise the students general awareness on the ethical dilemmas at work place
2. To understand the differing perceptions of interest in business related solutions
3. To present the concept of Corporate Social Responsibility and explore its relevance to ethical obligations and ethical ideals present in the relationship between employers and employees
4. To investigate whether ethics set any boundaries on competition , marketing, sales and advertising
5. To enable students to validate or correct , personal ideas about various ethical perspectives
6. To enable students to develop their own considered judgment about issues in Business Ethics
7. To foster more careful, disciplined thinking in trying to resolve issues in business ethics
8. To prepare students to play a constructive role in improving the sustainable development with which they may become involved

Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Business Ethics and Professional Values	a. Business Ethics – Introduction, Meaning, Scope , Principles , importance , Code of Ethics and Theories b. Professional Values – Meaning , Significance , Scope and Human Values c. Ethical Decision Making – Meaning, determinants, process of ethical decision making	1. Understanding Knowledge of established methodologies of solving ethical problems 2. Recognizing significance of Professional Values
2	Corporate Social Responsibility and Corporate Governance	a. CSR – Introduction , advantages , scope for CSR in India , Legal provisions for CSR, Forms of CSR and Indian Corporations b. Corporate Governance – concept Objectives , features , advantages , code whistle blowing , types arguments and justification c. Value Based Management – meaning, benefits and methods =, Vedic Management for business ethics	1. Knowing CSR and its scope and forms 2. Analysis of Corporate Governance and Value Based Management
3	Indian Ethical Practices	a. Indian Ethical Practices Finance b. Indian Ethical Practices Marketing c. Indian Ethical Practices Information Technology d. Ethics at work place e. Indian Ethical Practices HRM	Recognizing the unethical issues in Finance , Marketing , IT , HRM and at workplace
4	Emerging issues in Business Ethics and Environmental issues	a. Ethics in Environment – environmental crisis , issues relating to environmental degradation , natural resources depletion and pollution b. Sustainable Development – Meaning, Principles. Goals of Sustainable Development, Strategy to achieve Sustainable	1. Recognizing environmental issues and its impact on Business 2. Achieving Sustainable Development

		Development	
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Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Case study for Ethical Values and Decision making	PPT and examples of Indian and Foreign Companies	Collect Cases of Ethical Value Decisions	To understand How companies ethically operate
2	12	PPT and Comparative study of CSR practices and Corporate governance	Case Study of any Organization	Collection of Data and information on CSR practices and Corporate Governance of a company	To understand how CSR activities help the society for better living
3	12	Guest Lectures by Experts from corporate	PPT on possible ethical practices in different areas of Business Administration	Case study of ethical practices adopted by a company	To understand how ethical practices can be adopted in different areas

					of business
4	12	How Business Administration can be environment friendly (case study with examples)	Video Clippings of different corporate organizations working towards sustainable development and environment protection	Case study on Sustainable Development Project undertaken by an organization	Awareness on the importance of environmental issues and Sustainable Development

Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Internal Class Room Test for Conceptual understanding	As per University structure	Library assignment for conceptual understanding
Unit – II	Case Study presentation	As per University structure	15 days course on CSR including Visit to an organization
Unit – III	Paper Presentation	As per University structure	Listing out the various unethical practices in

			different areas of Business Administration
Unit – IV	Report on work of an organization for Sustainable Development OR Visit to an organization to study the consideration of Sustainable Development	As per University structure	One month Certificate course on Sustainable Development

References :

List of Books Recommended :-

1. Ethics in Management – By S.S.Sherlekar (Himalaya Publication)
2. Business Ethics and Corporate Governance – By S.S.Khanka(S.Chand Publication)
3. Business Ethics and Corporate Governance – By S.K.Bhatia (Deep and Deep sons)
4. Management by Values – By S.K.Chakraborti(Oxford University Press)
5. E- Commerce – A study in Business Etics – By Rituparna Raj (Himalaya Publication).
6. E- Commerce and It's Applications – By Dr. U.S. Pandey , Rahul Srivastava and Saurabh Shukla.(S.Chand Publication)

7. The age of Sustainable goals – By Jeffery D. Saches and Ki Moon Ban(Columbia University Press)
8. Atlas of Sustainable Development Goals 2017: from World Development Indicators – by World Bank(World Bank Publication)
9. Business Ethics and Corporate Governance – By A.C.Fernando (Dorling Kindersly)
10. Corporate Governance: Principle , Policies and Practices – By Bob Tricker (Oxford University Press)

M. Com. Part I (Semester II)
Group F (Business Administration) - Special Paper IV

Subject : - Elements of Knowledge Management

Course Code – 214

Objectives of the course

- 1 To develop Analytical and Research oriented skills among the students.
- 2 To understand value application and relevance of Knowledge management in today's corporate world.
- 3 To promote research and innovation ideas based on Knowledge Management.
- 4 To enhance knowledge level and practice of linking theoretical background with applied Social Science.

Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Introduction to Knowledge Management	a Knowledge Management - Concept , Meaning , Definition , Nature and Relevance of it in today's Business world. b Knowledge Management Process c Approaches to Knowledge Management d. Difference between information and knowledge	Developing Conceptual Skill and Improving analytical Ability .
2	Tools and Techniques of Knowledge Management	a Concept , Meaning , Types of Knowledge sharing b System of Presenting Knowledge c Role of Knowledge Management in Management of Change d. Measurement of Knowledge e. Role of a Leader in Knowledge Management	Technical and Practical Oriented Skills
3	Cross Functional areas and Knowledge	a. Finance and Knowledge Management b. Marketing and Knowledge Management c. E- Commerce and Knowledge Management d. TQM and Knowledge Management	Value based and Application Oriented Skills

	Management	<ul style="list-style-type: none"> e. CRM and Knowledge Management f. Human Resource and Knowledge Management 	
4	Knowledge Strategies	<ul style="list-style-type: none"> a. Meaning , Nature , Scope and knowledge strategy creation b. Using Knowledge Management to safeguard Intellectual Property c. Knowledge engineering for IT based services d. Future Prospects of Knowledge Intensive Business Services and its impact on the economy 	Administrative and Management skills

Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Case Study and PPT	PPT	Home Assignment	Conceptual Clarity
2	14	Group Discussion	Corporate Cases and Discussions on it	Written Test	Analytical ability
3	10	Multiple Choice Question and Interview	Online Multiple Choice Question Test	Report Writing	Application Oriented Skills
4	12	Report Writing	Referring to various websites	Discussion with exercises	Managerial skills

Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Home Assignment	Written exam	Visit to Corporates
Unit – II	Continuous Evaluation/PPT	Written exam	Report on Field Visit
Unit – III	Continuous Evaluation/ MCQ	Written exam	Interaction with experts
Unit – IV	Continuous Evaluation/Case Study	Written exam	Guest lectures on concerned topics

References :List of Books Recommended :-

- 1 Knowledge Management – By Elias and Hassan Gazai (Pearson Publication)
- 2 E-World Emerging Education Pvt. Ltd. – By Arpita Gopal and Chandranil Singh
- 3 Knowledge Management Toolkit – By Amrit Tiwan
- 4 Knowledge Management Field Work – By Bukowitz W. R. and Williams R. I.
- 5 Building the Knowledge Management Network – By Egaallo C.F.
- 6 Change Management for Competitive Success – By Pettigrwe A., Whipp R.,(Infinity Books)



SAVITRIBAI PHULE PUNE UNIVERSITY

Revised Syllabus of Master of Commerce (M.Com.) Semester Pattern with Credit System with effect from June 2019

The M. Com. Syllabus for regular students is being revised from the academic year 2019-20. The course structure is as below:-

1. Objectives :

- To equip and train Post Graduate students to accept the challenges of business world by providing opportunities for study and analysis of advanced commercial and business methods and processes.
- To develop independent logical thinking and facilitate personality development.
- To equip the students to seek suitable careers in management and entrepreneurship.
- To acquaint students with significance of research in business.
- To impart skills regarding methods of data collection and their interpretations.
- To develop communication and analytical skills among students.

2. Duration :

The M.Com. Course will be of Two Years duration consisting of two part. I.e. Part I and Part II. Each part is having Two Semesters.

Thus, the M.Com. Course is of Four Semesters. For each Semester, there will be Four Papers of 100 marks each. M.Com. Degree will be of 1600 marks in aggregate.

3. Duration and Structure of Programme:

The M.Com (Semester pattern with Credit System) degree Programme shall be of 2 years' duration divided into two parts, Part I and Part II, and 4 semesters.

4. Eligibility :

The student who has passed any Bachelors degree of this University or any other recognized University shall be held eligible to be admitted to M.Com. Course.

5. Course Structure:

The M.Com. degree course will be of two year duration consisting of four semesters and of minimum 64 credits as below:

Sr. No.	Semester	Total Credits
1	Semester I	16
2	Semester II	16
3	Semester III	16
4	Semester IV	16
	Grand Total	64

Four extra credits for project work at 4th Semester (This will include credits for fieldwork, data presentation and report writing)

In each Semester, there will be four papers of 100 marks each out of which **40 marks will be for Internal Assessment** (attendance, home assignments, class tests, long term papers, classroom presentation and **60 marks for University Examination**. Thus M.Com. degree examination, four Semesters shall be of 1600 marks.

In addition to the above, students are required to secure following ten credits. These credits are compulsory in nature.

Semester	Human Rights	Introduction to cyber security / information security	Skill development	Total Credits
I	1 credit	1 credit	--	2 credits
II	1 credit	1 credit	--	2 credits
III	--	1 credit	2 credits	3 credits
IV	--	1 credit	2 credits	3 credits
Total Credits	2 credits	4 credits	4 credits	10 credits

- Syllabus and other details regarding 'Human Rights' has been displayed on the home page of the university website.
- Syllabus and other details regarding '**Introduction to cyber security / information security**' has been displayed on the 'syllabi' page of the university website.

6. The Scheme of Papers: The following will be the Scheme of papers:

The List of Courses

Semester I

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester I	Core Compulsory	101	Management Accounting	04	04	03	40	60	100	
		102	Strategic Management	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		Group A (Advanced Accounting & Taxation)								
		103	Advanced Accounting	04	04	03	40	60	100	
		104	Income Tax	04	04	03	40	60	100	
		Group B (Commercial Laws & Practices)								
		105	Information system and E-Commerce Practices	04	04	03	40	60	100	
		106	Intellectual Property Laws	04	04	03	40	60	100	
		Group C (Advanced Cost Accounting & Cost system)								
		107	Advanced Cost Accounting	04	04	03	40	60	100	
		108	Costing Technique Examination s and Responsibility Accounting	04	04	03	40	60	100	
		Group D (Co-operation & Rural Development)								
		109	Co-operative Movement in India	04	04	03	40	60	100	
		110	Rural Development	04	04	03	40	60	100	
		Group E (Business Practices & Environment)								
		111	Organized Traders and Markets	04	04	03	40	60	100	
		112	Business Environment and Policy	04	04	03	40	60	100	
		Group F (Business Administration)								
		113	Production and Operation Management	04	04	03	40	60	100	
114	Financial Management	04	04	03	40	60	100			
Group G (Advanced Banking & Finance)										
115	Legal Framework of Banking	04	04	03	40	60	100			
116	Central Banking	04	04	03	40	60	100			
Group H (Advanced Marketing)										
117	Marketing Techniques	04	04	03	40	60	100			
118	Consumer Behaviour	04	04	03	40	60	100			

Semester II

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks		
							Internal	Univ.	Total
Semester II	Core Compulsory	201	Financial Analysis and Control/ Principals of Financial Accounting	04	04	03	40	60	100
		202	A. Industrial Economics B. Business Statistics	04	04	03	40	60	100
Semester II	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>							
		Group A (Advanced Accounting & Taxation)							
		203	Specialized Areas in Accounting	04	04	03	40	60	100
		204	Business Tax Assessment & Planning	04	04	03	40	60	100
		Group B (Commercial Laws & Practices)							
		205	E- Security & Cyber Laws	04	04	03	40	60	100
		206	Laws Regulating to Copyrights & Design	04	04	03	40	60	100
		Group C (Advanced Cost Accounting & Cost system)							
		207	Application Cost Accounting	04	04	03	40	60	100
		208	Cost Control & Cost System	04	04	03	40	60	100
		Group D (Co-operation & Rural Development)							
		209	International Co-operative Movement	04	04	03	40	60	100
		210	Management of Co-operative Business	04	04	03	40	60	100
		Group E (Business Practices & Environment)							
		211	Modern Business Practices	04	04	03	40	60	100
		212	Business Environment Analysis	04	04	03	40	60	100
		Group F (Business Administration)							
		213	Business Ethics & Professional Value	04	04	03	40	60	100
		214	Elements of Knowledge Management	04	04	03	40	60	100
		Group G (Advanced Banking & Finance)							
215	Banking Law & Practices	04	04	03	40	60	100		
216	Monetary Policy	04	04	03	40	60	100		
Group H (Advanced Marketing)									
217	Customer Relationship Management & Retailing	04	04	03	40	60	100		
218	Services Marketing	04	04	03	40	60	100		

7. Scheme of Examination:

The examination of regular students of M.Com. degree course of the University of Pune admitted in the academic session 2019-20 and after shall be based on:

- (a) Semester Examination
- (b) Continuous Assessment
- (c) Choice Based Credit System, and
- (d) Semester Grade Point Average and Cumulative Grade Point Average System

For each paper of 100 marks, there will be an Internal Assessment (1A) of 40 marks and the University Examination (UE) of 60 marks/ 3 hours duration at the end of each semester. A candidate who will secure at least 40% marks allotted to each paper will be given 4 credits. A candidate who does not pass the examination in any subject or subjects in one semester will be permitted to appear in such failed subject or subjects along with the papers of following semesters.

The Internal Assessment for each paper will be 40 marks, which will be carried out by the department during the term. The Internal Assessment may be in the forms of written test, seminars, term papers, presentations, assignments, orals or any such others. The distribution of internal assessment marks shall be as follows:

Midterm Test	20
Presentation/Role Play	10
Case studies/ Group Discussion	10

There shall be four semester examinations: first semester examination at the middle of the first academic year and the second semester examination at the end of the first academic year. Similarly, the third and fourth semester examinations shall be held at the middle and the end of the second academic year, respectively.

The candidates shall be permitted to proceed from the first semester up to final semester irrespective of their failure in any of the semester examinations subject to the condition that the candidates should register for all the arrear subjects of earlier semesters along with current (Subsequent) semester subjects.

8. Research project work:

There will be a Research Project to be prepared by a student during the fourth semester. The objective of the project work is to introduce students to research methodology in the subject and prepare them for pursuing research in theoretical or experimental or computational areas of the subject. The project work is to be undertaken under guidance of a teacher allotted to a student by the department.

Division of marks	Marks
Synopsis with working bibliography (Internal Assessment)	40 marks
A full project Report (Minimum 50-80 pages)	40 marks
Viva Voce	20 marks

Total	100 marks
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As the Research Project is based on the self-study done by the candidate and evaluated for 100 marks altogether, having four credits. The project may be evaluated by two examiners one internal and one external, selected from the panel of PG examiners of the University. The Viva voce must be conducted by the teachers selected out of the panel of PG examiners maintained by the University.

The candidates have to submit the project 15 days before the commencement of the fourth semester university examination. The project report shall be type-written and submitted in duplicate. A candidate who fails to submit the project may resubmit the same in the subsequent semester examination for evaluation. The project work activities must be duly supported by documentary evidence to be endorsed by the Head or Guide.

9. Standard of passing:

A candidate shall be declared to have passed in the paper provided he/she has secured minimum GP of 4.5 in the UNIVERSITY EXAMINATION and GRADE POINT AVERAGE of 4.0 in aggregate of UNIVERSITY GRADE and INTERNAL ASSESSMENT taken together.

10. Classification of successful candidates:

Candidates who secured not less than 60% of aggregate marks (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) in the whole examination shall be declared to have passed the examination in the first class. All other successful candidates shall be declared to have passed in second class. Candidates who obtain 70% of the marks in the aggregate (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) shall be deemed to have passed the examination in first class with distinction.

A student who passes in all the courses will be declared to have passed the M.Com. degree with the following honors.

CGPA in (4.00, 4.99)	- Pass Class
CGPA in (5.00, 5.49)	- Second Class
CGPA in (5.50, 5.99)	- Higher Second Class
CGPA in (6.00, 7.99)	- First Class
CGPA in (8.00, 10.00)	- First Class with Distinction

11. Scheme of Credits:

Sixty (60) hours of teaching will lead to four credits (which mean four hours per week teaching in one semester) and long term paper as well as presentation will carry one credit. Each semester shall offer 16 credits or more.

12. Grade Points Scheme:

The term grading system indicates a 10 – points scale of evaluation of the performance of students in terms of marks obtained in the Internal and External Examination, grade points and letter grade. The total performance within a semester and continuous performance starting from the first semester are indicated respectively by Grade Point

Average (GPA) and Cumulative Grade Point Average (CGPA). Candidates who pass all the examinations prescribed for the course in the first appearance itself alone are eligible for Ranking.

The 10-point scale would be used to convert marks out of 100 to grades and grade points according to the following table:

Marks as Percentage	Grade	Grade Point
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[70.0, 74.9]	A+	9.0
[65.0, 69.9]	A	8.0
[60.0, 64.9]	B+	7.0
[55.0, 59.9]	B	6.0
[50.0, 54.9]	C+	5.5
[45.0, 49.9]	C	5.0
[40.0, 44.9]	D	4.5
[00.0, 39.9]	F	0.0

13. Structure of Transcript:

At the end of each semester, student will be given a transcript showing the performance and result in each course. The transcript shows, for each course the title of the course, credit values, grade in UNIVERSITY EXAMINATION , grade in INTERNAL ASSESSMENT , grade point index, result as pass or fail. Also, the semester grade point average (SGPA) and cumulative grade point average (CPGA) will be shown. Further the equivalent percentage of marks corresponding to SGPG or CGPA to equivalent percentage is given by:

$$\text{Equivalent percentage marks} = \begin{cases} 10 \times \text{CGPA} & \text{if CGPA /SGPA is in } [4.00, 6.00] \\ 05 \times \text{CGPA} + 30 & \text{if CGPA /SGPA is in } [6.00, 9.00] \\ 25 \times \text{CGPA} - 150 & \text{if CGPA /SGPA is in } [9.00, 10.00] \end{cases}$$

The above formula computes to the following table:

Range in % of Marks	Range of CGRADE POINT AVERAGE	Letter Grade	Division
[75.0, 100]	[9.00, 10.00]	O	First Class with Distinction
[70.0, 74.9]	[8.00, 8.99]	A+	
[65.0, 67.9]	[7.00, 7.99]	A	First Class
[60.0, 64.9]	[6.00,6.99]	B+	
[55.0, 59.9]	[5.50, 5.99]	B	Higher Second Class
[50.0, 54.9]	[5.00,5.49]	C+	Second Class
[45.0, 49.9]	[4.50, 4.99]	C	Pass Class
[40.0, 44.9]	[4.00, 4.49]	D	
[00.0, 39.9]	[0.00, 3.99]	F	Fail

Thus the percentage of Marks can be obtained by using the following table:

CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks
4.0	40.0	5.5	55.0	7.0	65.0	8.5	72.5
4.1	41.0	5.6	56.0	7.1	65.0	8.6	73.0
4.2	42.0	5.7	57.0	7.2	66.0	8.7	73.5
4.3	43.0	5.8	58.0	7.3	66.0	8.8	74.0
4.4	44.0	5.9	59.0	7.4	67.0	8.9	74.5
4.5	45.0	6.0	60.0	7.5	67.0	9.0	75.0
4.6	46.0	6.1	60.0	7.6	68.0	9.1	77.5
4.7	47.0	6.2	61.0	7.7	68.0	9.2	80.0
4.8	48.0	6.3	61.0	7.8	69.0	9.3	82.5
4.9	49.0	6.4	62.0	7.9	69.5	9.4	85.5
5.0	50.0	6.5	62.0	8.0	70.0	9.5	87.5
5.1	51.0	6.6	63.0	8.1	70.0	9.6	90.0
5.2	52.0	6.7	63.0	8.2	71.5	9.7	92.5
5.3	53.0	6.8	64.0	8.3	71.0	9.8	95.0
5.4	54.0	6.9	64.0	8.4	72.0	9.9	97.5
						10.0	100.0

14. Distribution of Periods:

There shall be 60 periods for each subject to cover the entire teaching of 4 credits. This will be distributed as follows:

Particulars	Periods
Teaching session per programme	48
Assignment/ Test	04
Role play/ Group Discussion	04
Case studies and presentation	04
Total	60

15. Standard of Passing.

Regular students: - A candidate is required to obtain 40% marks in each of course in both Mid Semesters and Semester end. It means passing separately at Mid-Semester and semester Examinations is compulsory.

16. Award of Class.

- The class in respect of M.Com. Examination will be awarded on the basis of aggregate marks obtained by the candidates in all the sixteen papers at the Semester I, II, III, and IV together.

The Award of class shall be as under:-

Marks Obtained	Class
70% and above	First Class with Distinction.
60% and above but less than 70%	First Class.
55% and above but less than 60%	Higher Second Class.

Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)

Semester: - I

Group – H (Advanced Marketing)

Subject Name - Advanced Marketing Special Paper I

Subject Title:- Marketing Techniques

Course Code :- 117

Objectives of the course

1. To expose the students to various approaches to the study of marketing
2. To create awareness about environmental factors which are affecting marketing environment
3. To provide in-depth knowledge about marketing mix
4. To acquaint students with the importance of public relation in the field marketing
5. To help students understand stake-holders role in marketing mix

Depth of the program – Detailed Knowledge

Objective of the Program

- a. To equip and train Post Graduate students to accept the challenges in the field of marketing by providing opportunities to study and analyze advanced marketing techniques.
- b. To develop students' independent logical thinking and facilitate personality development.
- c. To prepare the students for seeking suitable careers in the field of marketing.
- d. To impart the knowledge about how to collect the data and interpret it.
- e. To develop among students Communication and Analytical skills

Unit No	Unit Title	Contents	Purpose Skills to be developed
01	Marketing Introduction & Marketing Environment	<p>Marketing : Meaning ,Definition,Elements, Objectives, Importance, Advantages and limitations, Evolution and Scope Approaches to the study of Marketing</p> <p>Marketing Environment: Meaning and Definition, Internal and external</p> <p>Environmental factors influencing the marketing environment</p>	To impart the students about Marketing & marketing environment
02	Product Mix and Price Mix	<p>Marketing Mix : Meaning, Definition,Elements,</p> <p>Product Mix:</p> <p>Concept of Product, Product Lines, Product line length, depth, width. Product Mix Width. Product Simplification diversification and elimination</p> <p>Product Management: New product development and Product Life Cycle</p> <p>Brand Management: concept definition and history of brand/branding</p> <p>Brand Creation, Rebranding, Brand Positioning, Brand Equity Brand Contract, Brand Factory</p> <p>Labelling: Meaning and importance</p> <p>Price Mix:</p> <p>Price—Meaning, Definition and Elements of price mix. Need, importance and objectives of pricing. Factors influencing pricing. Various Pricing Strategies.</p>	To impart to the students about Product mix and place mix techniques.
03	Place Mix and Promotion Mix	<p>Place – Types of Distribution Channels , Advantages & Limitations, factors affecting selection of channel.</p> <p>Promotion Mix :</p> <p>Meaning, Elements of Promotion Mix,</p>	To impart to the students about place mix and promotion mix technique

		<p>Advertising – Concept, Classification, functions, benefits of advertising, Economic, Social & ethical issues, evaluating advertising effectiveness, Recent trends in advertising,</p> <p>Personal Selling – concept and importance, theories of selling, process of personal selling. Selling Methods, Limitations of personal selling.</p> <p>Publicity: Meaning, difference between advertising and publicity</p> <p>Sales Promotion: Meaning, Objectives and importance. Tools or techniques, Evaluation of sales promotion.</p>	
04	<p>Public Relations, People Process and Physical Evidence</p>	<p>Public Relations— Concept, History, Tools of public relations, Role of Public Relation Officer</p> <p>E- Marketing Promotion – E mails, different types of Web advertising, blog spots, Online Sponsorships. Social Media Marketing,</p> <p>People, Process and Physical Evidence -- People as a part of Marketing Mix, customer interaction, customer service Process as part of the Marketing Mix, Physical evidence/ Packaging</p>	<p>To impart the students to develop public relation skill in marketing</p>

Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
01	12	Guest Lecture, Presentation of the students and Lectures available on Youtube	Videos on Youtube	N.A	Students will understand various approaches to study marketing and also get sufficient knowledge about the factors which influencing marketing environment.

02	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will get in-depth knowledge about Product Mix and Price Mix
03	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will understand about Place Mix and Promotion Mix
04	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will aware about various tools of Public Relation and also e-marketing promotion

Method of Evaluation

Subject	Internal Evaluation	External Evaluation
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination

References

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Marketing Management	Arun Kumar, Rachana Sharma.	Atlantic Publishers & Distributors	New Delhi
2.	Marketing Management	Amar Jyoti	Gennext Publishers	New Delhi
3.	Marketing Management	Ranjan Saxena	Tata Mc-Graw Hill Publishers	New Delhi
4.	International Marketing Mix Management	Tobias Richter	Noyos	Berlin
5.	Marketing Management	Russell Winer	Pearson Education	Delhi
6.	Public Relation in Marketing Mix	Jordan Goldman,	NTC Business Books	New York
7.	Public Relation for Marketing Management	Frank Jefkins	The MACMILLAN Press Ltd	London
8.	Marketing Management	Prin. Dr. Babasaheb Sangale	Success Publications	Pune

Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)

Semester: - I

Group – H (Advanced Marketing)

Subject Name - Advanced Marketing Special Paper II

Subject Title:- Consumer Behaviour

Course Code -: 118

Objectives of the course

1. To help students understand the various models of Consumer Behaviour
2. To facilitate students 'awareness about consumer motivation & how to overcome motivational problem
3. To provide in-depth knowledge about consumer personality
4. To acquaint the students with the culture and Social Influences on Consumer Behaviour

Depth of the program – Detailed Knowledge

Objective of the Program

- d. To equip and train Post Graduate students to accept the challenges in the field of marketing by providing opportunities to study and analyze advanced marketing techniques.
- e. To develop students' independent logical thinking and facilitate personality development.
- f. To prepare the students for seeking suitable careers in the field of marketing.
- d. To impart the knowledge about how to collect the data and interpret it.
- e. To develop among students Communication and Analytical skills

Unit No	Unit Title	Content	Skills to be developed
01	Consumer Behavior	Meaning and Definition of Consumer Behaviour. Need and Advantages to Study Consumer Behaviour. Models of Consumer Behaviour—Economic, Learning, Sociological and Psychological Models and other relevant Models.	To identify various consumer behavioural traits and patterns.
02	Consumer Motivation.	Introduction , needs , objectives and Scope of Consumer Motivation. Overcoming Problems of Motivational Conflict. Defense Mechanism. Motive arousal, Motivational theories	To discern the motivational gaps among consumers and to use the right type of motivational techniques to fill / reduce the gap.
03	Consumer Personality: Learning Memory and Involvement	Consumer attitudes, beliefs, feelings and Behaviour Consumer Learning attitudes and components of learning Memory system , memory process, concept of involvement , dimensions of involvement	To identify the consumer personality, with regard to attitude, learning , memory and involvement
04	Cultural and Social Influences on Consumer Behaviour	Characteristics of Culture, values, sub cultures, cross cultural and multi-cultural influences on Consumer Behaviour. Social Class and Group influences on Consumer Behaviour with regard to money and other status symbols, conformity to group norms behavior and Influence, family life influences, standard of life and living Influences.	To specifically Identify differences in Consumer Behaviour based on Cultural and Social Influences.

Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
01	12	Guest Lecture, Presentation of the students and Lectures available on Youtube	Videos on Youtube	N.A	Students will understand various approaches to study marketing and also get sufficient knowledge about the factors which influencing marketing environment.
02	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will get in-depth knowledge about Product Mix and Price Mix
03	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will understand about Place Mix and Promotion Mix
04	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will aware about various tools of Public Relation and also e-marketing promotion

Method of Evaluation

Subject	Internal Evaluation	External Evaluation
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination

References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Consumer Behaviour	Leon G Schiffman, Joseph Wisenblit and S. Ramesh Kumar	Pearson	USA
2	Consumer Behaviour – Insights from Indian Market	RamanujMajumdar	PHI Learning Pvt Ltd	New Delhi
3	Consumer Behaviour—The Indian	S. Ramesh Kumar	Pearson	USA

	Context (Concept and Cases)			
4	Consumer Behaviour	Rodger D Blackwell, Paul W Miniard, James F Engel and Zillur Rahman	Cengage Learning India Pvt Ltd	Delhi
5	International Marketing Mix Management	Tobias Richter	Noyos	Berlin
6	Marketing Management	Russell Winer	Pearson Education	Delhi
7	Public Relation in Marketing Mix	Jordan Goldman,	NTC Business Books	New York
8	Public Relation for Marketing Management	Frank Jenkins	The MACMILLAN Press Ltd	London



SAVITRIBAI PHULE PUNE UNIVERSITY

Revised Syllabus of Master of Commerce (M.Com.) Semester Pattern with Credit System with effect from June 2019

The M. Com. Syllabus for regular students is being revised from the academic year 2019-20.
The course structure is as below:-

1. Objectives :

- a. To equip and train Post Graduate students to accept the challenges of business world by providing opportunities for study and analysis of advanced commercial and business methods and processes.
- b. To develop independent logical thinking and facilitate personality development.
- c. To equip the students to seek suitable careers in management and entrepreneurship.
- d. To acquaint students with significance of research in business.
- e. To impart skills regarding methods of data collection and their interpretations.
- f. To develop communication and analytical skills among students.

2. Duration :

The M.Com. Course will be of Two Years duration consisting of two part. I.e. Part I and Part II. Each part is having Two Semesters.

Thus, the M.Com. Course is of Four Semesters. For each Semester, there will be Four Papers of 100 marks each. M.Com. Degree will be of 1600 marks in aggregate.

3. Duration and Structure of Programme:

The M.Com (Semester pattern with Credit System) degree Programme shall be of 2 years' duration divided into two parts, Part I and Part II, and 4 semesters.

4. Eligibility :

The student who has passed any Bachelors degree of this University or any other recognized University shall be held eligible to be admitted to M.Com. Course.

5. Course Structure:

The M.Com. degree course will be of two year duration consisting of four semesters and of minimum 64 credits as below:

Sr. No.	Semester	Total Credits
1	Semester I	16
2	Semester II	16
3	Semester III	16
4	Semester IV	16
	Grand Total	64

Four extra credits for project work at 4th Semester (This will include credits for fieldwork, data presentation and report writing)

In each Semester, there will be four papers of 100 marks each out of which **40 marks will be for Internal Assessment** (attendance, home assignments, class tests, long term papers, classroom presentation and **60 marks for University Examination**. Thus M.Com. degree examination, four Semesters shall be of 1600 marks.

In addition to the above, students are required to secure following ten credits. These credits are compulsory in nature.

Semester	Human Rights	Introduction to cyber security / information security	Skill development	Total Credits
I	1 credit	1 credit	--	2 credits
II	1 credit	1 credit	--	2 credits
III	--	1 credit	2 credits	3 credits
IV	--	1 credit	2 credits	3 credits
Total Credits	2 credits	4 credits	4 credits	10 credits

- Syllabus and other details regarding 'Human Rights' has been displayed on the home page of the university website.
- Syllabus and other details regarding '**Introduction to cyber security / information security**' has been displayed on the 'syllabi' page of the university website.

6. The Scheme of Papers: The following will be the Scheme of papers:

The List of Courses

Semester I

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester I	Core Compulsory	101	Management Accounting	04	04	03	40	60	100	
		102	Strategic Management	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		Group A (Advanced Accounting & Taxation)								
		103	Advanced Accounting	04	04	03	40	60	100	
		104	Income Tax	04	04	03	40	60	100	
		Group B (Commercial Laws & Practices)								
		105	Information system and E-Commerce Practices	04	04	03	40	60	100	
		106	Intellectual Property Laws	04	04	03	40	60	100	
		Group C (Advanced Cost Accounting & Cost system)								
		107	Advanced Cost Accounting	04	04	03	40	60	100	
		108	Costing Technique Examination s and Responsibility Accounting	04	04	03	40	60	100	
		Group D (Co-operation & Rural Development)								
		109	Co-operative Movement in India	04	04	03	40	60	100	
		110	Rural Development	04	04	03	40	60	100	
		Group E (Business Practices & Environment)								
		111	Organized Traders and Markets	04	04	03	40	60	100	
		112	Business Environment and Policy	04	04	03	40	60	100	
		Group F (Business Administration)								
		113	Production and Operation Management	04	04	03	40	60	100	
114	Financial Management	04	04	03	40	60	100			
Group G (Advanced Banking & Finance)										
115	Legal Framework of Banking	04	04	03	40	60	100			
116	Central Banking	04	04	03	40	60	100			
Group H (Advanced Marketing)										
117	Marketing Techniques	04	04	03	40	60	100			
118	Consumer Behaviour	04	04	03	40	60	100			

Semester II

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester II	Core Compulsory	201	Financial Analysis and Control/ Principals of Financial Accounting	04	04	03	40	60	100	
		202	A. Industrial Economics B. Business Statistics	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		Group A (Advanced Accounting & Taxation)								
		203	Specialized Areas in Accounting	04	04	03	40	60	100	
		204	Business Tax Assessment & Planning	04	04	03	40	60	100	
		Group B (Commercial Laws & Practices)								
		205	E- Security & Cyber Laws	04	04	03	40	60	100	
		206	Laws Regulating to Copyrights & Design	04	04	03	40	60	100	
		Group C (Advanced Cost Accounting & Cost system)								
		207	Application Cost Accounting	04	04	03	40	60	100	
		208	Cost Control & Cost System	04	04	03	40	60	100	
		Group D (Co-operation & Rural Development)								
		209	International Co-operative Movement	04	04	03	40	60	100	
		210	Management of Co-operative Business	04	04	03	40	60	100	
		Group E (Business Practices & Environment)								
		211	Modern Business Practices	04	04	03	40	60	100	
		212	Business Environment Analysis	04	04	03	40	60	100	
		Group F (Business Administration)								
		213	Business Ethics & Professional Value	04	04	03	40	60	100	
		214	Elements of Knowledge Management	04	04	03	40	60	100	
		Group G (Advanced Banking & Finance)								
		215	Banking Law & Practices	04	04	03	40	60	100	
		216	Monetary Policy	04	04	03	40	60	100	
Group H (Advanced Marketing)										
217	Customer Relationship Management & Retailing	04	04	03	40	60	100			
218	Services Marketing	04	04	03	40	60	100			

7. Scheme of Examination:

The examination of regular students of M.Com. degree course of the University of Pune admitted in the academic session 2019-20 and after shall be based on:

- (a) Semester Examination
- (b) Continuous Assessment
- (c) Choice Based Credit System, and
- (d) Semester Grade Point Average and Cumulative Grade Point Average System

For each paper of 100 marks, there will be an Internal Assessment (1A) of 40 marks and the University Examination (UE) of 60 marks/ 3 hours duration at the end of each semester. A candidate who will secure at least 40% marks allotted to each paper will be given 4 credits. A candidate who does not pass the examination in any subject or subjects in one semester will be permitted to appear in such failed subject or subjects along with the papers of following semesters.

The Internal Assessment for each paper will be 40 marks, which will be carried out by the department during the term. The Internal Assessment may be in the forms of written test, seminars, term papers, presentations, assignments, orals or any such others. The distribution of internal assessment marks shall be as follows:

Midterm Test	20
Presentation/Role Play	10
Case studies/ Group Discussion	10

There shall be four semester examinations: first semester examination at the middle of the first academic year and the second semester examination at the end of the first academic year. Similarly, the third and fourth semester examinations shall be held at the middle and the end of the second academic year, respectively.

The candidates shall be permitted to proceed from the first semester up to final semester irrespective of their failure in any of the semester examinations subject to the condition that the candidates should register for all the arrear subjects of earlier semesters along with current (Subsequent) semester subjects.

8. Research project work:

There will be a Research Project to be prepared by a student during the fourth semester. The objective of the project work is to introduce students to research methodology in the subject and prepare them for pursuing research in theoretical or experimental or computational areas of the subject. The project work is to be undertaken under guidance of a teacher allotted to a student by the department.

Division of marks	Marks
Synopsis with working bibliography (Internal Assessment)	40 marks
A full project Report (Minimum 50-80 pages)	40 marks
Viva Voce	20 marks

Total	100 marks
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As the Research Project is based on the self-study done by the candidate and evaluated for 100 marks altogether, having four credits. The project may be evaluated by two examiners one internal and one external, selected from the panel of PG examiners of the University. The Viva voce must be conducted by the teachers selected out of the panel of PG examiners maintained by the University.

The candidates have to submit the project 15 days before the commencement of the fourth semester university examination. The project report shall be type-written and submitted in duplicate. A candidate who fails to submit the project may resubmit the same in the subsequent semester examination for evaluation. The project work activities must be duly supported by documentary evidence to be endorsed by the Head or Guide.

9. Standard of passing:

A candidate shall be declared to have passed in the paper provided he/she has secured minimum GP of 4.5 in the UNIVERSITY EXAMINATION and GRADE POINT AVERAGE of 4.0 in aggregate of UNIVERSITY GRADE and INTERNAL ASSESSMENT taken together.

10. Classification of successful candidates:

Candidates who secured not less than 60% of aggregate marks (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) in the whole examination shall be declared to have passed the examination in the first class. All other successful candidates shall be declared to have passed in second class. Candidates who obtain 70% of the marks in the aggregate (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) shall be deemed to have passed the examination in first class with distinction.

A student who passes in all the courses will be declared to have passed the M.Com. degree with the following honors.

CGPA in (4.00, 4.99)	- Pass Class
CGPA in (5.00, 5.49)	- Second Class
CGPA in (5.50, 5.99)	- Higher Second Class
CGPA in (6.00, 7.99)	- First Class
CGPA in (8.00, 10.00)	- First Class with Distinction

11. Scheme of Credits:

Sixty (60) hours of teaching will lead to four credits (which mean four hours per week teaching in one semester) and long term paper as well as presentation will carry one credit. Each semester shall offer 16 credits or more.

12. Grade Points Scheme:

The term grading system indicates a 10 – points scale of evaluation of the performance of students in terms of marks obtained in the Internal and External Examination, grade points and letter grade. The total performance within a semester and continuous performance starting from the first semester are indicated respectively by Grade Point

Average (GPA) and Cumulative Grade Point Average (CGPA). Candidates who pass all the examinations prescribed for the course in the first appearance itself alone are eligible for Ranking.

The 10-point scale would be used to convert marks out of 100 to grades and grade points according to the following table:

Marks as Percentage	Grade	Grade Point
[75.0, 100]	O	10.0
[70.0, 74.9]	A+	9.0
[65.0, 69.9]	A	8.0
[60.0, 64.9]	B+	7.0
[55.0, 59.9]	B	6.0
[50.0, 54.9]	C+	5.5
[45.0, 49.9]	C	5.0
[40.0, 44.9]	D	4.5
[00.0, 39.9]	F	0.0

13. Structure of Transcript:

At the end of each semester, student will be given a transcript showing the performance and result in each course. The transcript shows, for each course the title of the course, credit values, grade in UNIVERSITY EXAMINATION , grade in INTERNAL ASSESSMENT , grade point index, result as pass or fail. Also, the semester grade point average (SGPA) and cumulative grade point average (CPGA) will be shown. Further the equivalent percentage of marks corresponding to SGPG or CGPA to equivalent percentage is given by:

$$\text{Equivalent percentage marks} = \begin{cases} 10 \times \text{CGPA} & \text{if CGPA /SGPA is in [4.00, 6.00]} \\ 05 \times \text{CGPA} + 30 & \text{if CGPA /SGPA is in [6.00, 9.00]} \\ 25 \times \text{CGPA} - 150 & \text{if CGPA /SGPA is in [9.00, 10.00]} \end{cases}$$

The above formula computes to the following table:

Range in % of Marks	Range of CGRADE POINT AVERAGE	Letter Grade	Division
[75.0, 100]	[9.00, 10.00]	O	First Class with Distinction
[70.0, 74.9]	[8.00, 8.99]	A+	
[65.0, 67.9]	[7.00, 7.99]	A	First Class
[60.0, 64.9]	[6.00,6.99]	B+	
[55.0, 59.9]	[5.50, 5.99]	B	Higher Second Class
[50.0, 54.9]	[5.00,5.49]	C+	Second Class
[45.0, 49.9]	[4.50, 4.99]	C	Pass Class
[40.0, 44.9]	[4.00, 4.49]	D	
[00.0, 39.9]	[0.00, 3.99]	F	Fail

Thus the percentage of Marks can be obtained by using the following table:

CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks	CGRADE POINT AVERAGE	% of Marks
4.0	40.0	5.5	55.0	7.0	65.0	8.5	72.5
4.1	41.0	5.6	56.0	7.1	65.0	8.6	73.0
4.2	42.0	5.7	57.0	7.2	66.0	8.7	73.5
4.3	43.0	5.8	58.0	7.3	66.0	8.8	74.0
4.4	44.0	5.9	59.0	7.4	67.0	8.9	74.5
4.5	45.0	6.0	60.0	7.5	67.0	9.0	75.0
4.6	46.0	6.1	60.0	7.6	68.0	9.1	77.5
4.7	47.0	6.2	61.0	7.7	68.0	9.2	80.0
4.8	48.0	6.3	61.0	7.8	69.0	9.3	82.5
4.9	49.0	6.4	62.0	7.9	69.5	9.4	85.5
5.0	50.0	6.5	62.0	8.0	70.0	9.5	87.5
5.1	51.0	6.6	63.0	8.1	70.0	9.6	90.0
5.2	52.0	6.7	63.0	8.2	71.5	9.7	92.5
5.3	53.0	6.8	64.0	8.3	71.0	9.8	95.0
5.4	54.0	6.9	64.0	8.4	72.0	9.9	97.5
						10.0	100.0

14. Distribution of Periods:

There shall be 60 periods for each subject to cover the entire teaching of 4 credits. This will be distributed as follows:

Particulars	Periods
Teaching session per programme	48
Assignment/ Test	04
Role play/ Group Discussion	04
Case studies and presentation	04
Total	60

15. Standard of Passing.

Regular students: - A candidate is required to obtain 40% marks in each of course in both Mid Semesters and Semester end. It means passing separately at Mid-Semester and semester Examinations is compulsory.

16. Award of Class.

- The class in respect of M.Com. Examination will be awarded on the basis of aggregate marks obtained by the candidates in all the sixteen papers at the Semester I, II, III, and IV together.

The Award of class shall be as under:-

Marks Obtained	Class
70% and above	First Class with Distinction.
60% and above but less than 70%	First Class.
55% and above but less than 60%	Higher Second Class.

13) Trends & Progress of Banking in India- R.B.I. Annual

14) Annual Report on Trend and Progress of Banking in India.

M. Com. Part I (Semester II)

Group H (Advanced Marketing) - Special Paper III

Subject: Customer Relationship Management & Retailing

Course Code -: 217

Objectives of the course

- 1 To understand the importance of CRM
- 2 To make students aware of the latest development in CRM
- 3 To get students acquainted about eCRM and its tools
4. To help students understand various issues related with CRM implementation

Depth of the program – Detail Knowledge

Objective of the Program

- a. To equip and train Post Graduate students to accept the challenges in the field of marketing by providing opportunities to study and analyze advanced marketing techniques.
- b. To develop students' independent logical thinking and facilitate personality development.
- c. To prepare the students for seeking suitable careers in the field of marketing.
- d. To impart the knowledge about how to collect the data and interpret it.
- e. To develop among students Communication and Analytical skills

Unit No	Unit Title	Contents	Purpose Skills to be developed
01	Emerging CRM	<p>Introduction: Evolution of Relationship as a Marketing tool, Emergence of CRM Practice/ Factors responsible for the growth of CRM. CRM Cycle, Importance of CRM</p> <p>Emerging CRM Introduction, Customer Development Process, customer Retention, Customer Retention Management, Reasons for Customer Switching and Strategies for Retention, Importance of customer retention, Customer Recall Management, Customer Recall Strategies CRM a Cost benefit analysis.</p>	To identify CRM factors which are responsible for the growth of CRM and also emerging trends in CRM
02	CRM and I.T	eCRMan I.T Tool, e CRM in Business, Features of e- CRM, Technologies of E CRM, Important CRM Softwares—Oracle, Clarify, People Soft and My Sap CRM. Applications of e CRM,	To enable the students about eCRM and IT
03	Latest Development in CRM	Changing Roles of CRM , Customer Experience Management, Customer Profitability, Customer Classification based on Profitability, Customer Profitability as a strategic Management Tool, Customer Profitability and company Value, Customer Experience Management and Customer Profitability Management, Customer Lifetime Value	To get familiar withthe latest development in CRM
04	CRM Implementation Issues & People factor	<p>CRM Implementation Issues : Challenges of CRM Implementation, Essentials of CRM Principle, Customer Satisfaction, Importance of Customer Satisfaction, Customer Expectation, Customer Perception.</p> <p>People factor in CRM— Customer Centric Organisational Structure, Employee Organisation Relationship, Employee Customer Orientation</p>	To get acquainted about CRM implementation issues.

Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
01	14	Guest Lecture, Presentation of the students and also videos which are available on youtube	Videos on Youtube	N.A	Student Will understand the concept & Importance of CRM and also about emerging CRM
02	10	Field visit to IT industry Guest Lecture of IT Expert Case Study Method	Videos on Youtube	Report based on field visit to IT industry	Student will get in depth knowledge about eCRM, it's technologies and also various important softwares
03	10	Guest Lecture, Case Study Method, Group Discussion	Videos on Youtube	N.A	Students will get acquainted about the latest development in CRM
04	14	Guest Lecture, Case Study Method, Presentation	Videos on Youtube	N.A.	Students will understand about the challenges in implementing CRM and people factor in CRM

Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.

References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Customer Relationship Management: Concept & Technologies	Francis Butle	Elsevier	Hungary
2	Customer Relationship Management : A Strategic Approach	LakshmanJha	Global India Publications Pvt Ltd.	New Delhi
3	Customer Relationship Management: A Global Perspective	Gerhard Rabb, RiadAjami, VidyaranaGargeya	Routledge	London
4	Customer Relationship Management:	JagdishSheth, AtulParatiyar	Tata Mc-Graw Hill	New Delhi

	Emerging Concepts, Tools, and Applications		Publication Company	
5	Customer Relationship Management: Concept, Strategy, and Tools	V.Kumar, Werner Reinartz	Elsevier	Hungary
6	Effective Customer Relationship Management	Amy Sauers	Cambria Press	New York
7	Customer Relationship Management	R.K Sungadhi	New Age International Publishers	New Delhi
8	Customer Relationship Management	Subhasish Das	Excel Books	New Delhi
9	Customer Relationship Management Concept & Cases	Alok Kumar Rai	Prentice Hall of India Private Limited,	New Delhi.
10	Customer Relationship Management,	S. Shanmugasundaram	Prentice Hall of India Private Limited,	New Delhi.

M. Com. Part I (Semester II)

Group H (Advanced Marketing) - Special Paper IV

Subject Name :-Service Marketing

Course code :-218

Objectives of the course

1. To train the students in the concept of services and a comparison skills between types of goods and types of services.
2. To familiarize students about how to design services mix with reference to product & price
3. To make students aware about how to design services mix with reference to promotion and distribution
4. To identify consumer perception and how to develop consumer trust, goodwill and loyalty.

Depth of the program – Detailed Knowledge

Objective of the Program

- d. To equip and train Post Graduate students to accept the challenges in the field of marketing by providing opportunities to study and analyze advanced marketing techniques.
- e. To develop students' independent logical thinking and facilitate personality development.
- f. To prepare the students for seeking suitable careers in the field of marketing.
 - d. To impart the knowledge about how to collect the data and interpret it.
 - e. To develop among students Communication and Analytical skills

Unit No	Unit Title	Content	Skills to be developed
01	Introduction to Services	Meaning, Definition and Characteristics of Services, Types of Services, Core and Augmented Services, Difference between goods and Services, Relevance, changes and trends in the present growing service sector.	To develop understanding of the concept of services and a comparison skills between types of goods and types of services.

02	Designing Suitable Services Marketing Mix Part 1	Designing of Services Mix with reference to Product and Price: Service Development Strategies, The Service Delivery Process, Pricing of Services, Service Pricing Strategies	To develop analytical skills related to designing of Product Mix and pricing Mix strategies.
03	Designing Suitable Services Marketing Mix Part 2	Designing The service Mix with reference to Promotion and Distribution: Developing the Services Communication Strategy, challenges associated with the development of the services communication strategy Managing the firms physical evidence, the development of servicescapes, Managing the senses when developing services capes, Defining and Measuring Service Quality	To develop quality consensus of service delivery and to enable them to measure service quality and its flow of delivery of various networking channels.
04	Effective Management of Service Consumer	Managing Service Consumers, Managing Consumer Service Perceptions, Defining and Measuring Consumer Satisfaction. Customer Loyalty and Retentions	To develop skills in identifying consumer perception and how to develop consumer trust, goodwill and loyalty.

Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
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01	12	Guest Lecture, Presentation of the students and Lectures available on Youtube	Videos on Youtube	N.A	Students will understand various approaches to study marketing and also get sufficient knowledge about the factors which influencing marketing environment.
02	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will get in-depth knowledge about Product Mix and Price Mix
03	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will understand about Place Mix and Promotion Mix
04	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will aware about various tools of Public Relation and also e-marketing promotion

Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on

			Course
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.

References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Marketing Management	Arun Kumar, Rachana Sharma.	Atlantic Publishers & Distributors	New Delhi
2	Marketing Management	Amar Jyoti	Gennext Publishers	New Delhi
3	Services Marketing Concepts Applications and Cases	M.K. Rampal and S.L. Gupta	Galgotia Publishing Co	New Delhi
4	Services Marketing	S.M. Jha	Himalaya Publishing House	Delhi
5	Services Marketing Text and Cases	Steve Baron and Kim Harris	MacMillian Business	London
6	Selling the invisible	Harry Beckwith	Business Plus	Boston
7	Services Marketing	Peter Mudie and Anjela Pierrie	Butterworth-Heinemann	Great Britain
8	Services Marketing Concepts Strategies and Cases	K. Douglas Hoffman and John E.G. Bateson	Cengage Learning	USA

M Com Part I (Semester II) Question Paper Pattern for University Exam

Common Paper Pattern for all subjects except Cost Accounting, Management Accounting and Financial Accounting papers.

Instruction for the students:

1. Question 1 and 6 are compulsory.

2. Answer any only three questions from Q no.2 to 5.

Q No	Compulsory/Choice	Nature of Question	Marks	Total Marks
Q1	Compulsory Question	MCQ	6 Marks	6 Marks
Q2	Write any three from Q2 to Q7	Long Answer Question	14 Marks	
Q3	Write any three from Q2 to Q7	Long Answer Question	14 Marks	
Q4	Write any three from Q2 to Q7	Long Answer Question	14 Marks	
Q5	Write any three from Q2 to Q7	Long Answer Question	14 Marks	42 Marks
Q6	Compulsory Question	Write any two short notes	6 Marks X 2Q	12 Marks
			Total	60 Marks

Instruction for the Paper Setters:

1	Q2 to Q5 to have at least two parts.(2+10 or 6+6 or 3+9 or 4+8) as per requirement and suitability.
2	In Q6. Four short notes one from each chapter.
3	Q2 to Q5 Four Long answer questions from each chapter.



Savitribai Phule Pune University

(Formerly University of Pune)

Three Year B.Sc. Degree Program in Botany

(Faculty of Science & Technology)

F.Y.B.Sc. Botany

Choice Based Credit System Syllabus

To be implemented from Academic Year 2019-2020

Title of the Course: B. Sc Botany

1. Structure of Course:

Structure B.Sc. Botany syllabus					
Year	Semester	Course Type	Course code	Course Name	Credits
1	1	Compulsory Course	BO 111	Plant life and utilization I	2
			BO 112	Plant morphology and Anatomy	2
			BO 113	Practical based on BO 111 & BO 112	1.5
	2	Compulsory Course	BO 121	Plant life and utilization II	2
			BO 122	Principles of plant science	2
			BO 123	Practical based on BO 121 & BO 122	1.5
2	3	Compulsory Course	BO 231	Botany Theory Paper 1	2
			BO 232	Botany Theory Paper 2	2
			BO 233	Botany Practical Paper	2
	4	Compulsory Course	BO 241	Botany Theory Paper 1	2
			BO 242	Botany Theory Paper 2	2
			BO 243	Botany Practical Paper	2
3	5	Discipline Specific Elective Course	BO 351	Botany Theory Paper 1	2
			BO 352	Botany Theory Paper 2	2
			BO 353	Botany Theory Paper 3	2
			BO 354	Botany Theory Paper 4	2
			BO 355	Botany Theory Paper 5	2
			BO 356	Botany Theory Paper 6	2
			BO 357	Botany Practical Paper 1	2
			BO 358	Botany Practical Paper 2	2
		Skill Enhancement course	BO 359	Botany Practical Paper 3	2
			BO 3510	Botany Theory Paper 7	2
3	6	Discipline Specific Elective Course	BO 361	Botany Theory Paper 1	2
			BO 361	Botany Theory Paper 2	2
			BO 362	Botany Theory Paper 3	2
			BO 363	Botany Theory Paper 4	2
			BO 364	Botany Theory Paper 5	2
			BO 365	Botany Theory Paper 6	2
			BO 366	Botany Practical Paper 1	2
			BO 367	Botany Practical Paper 2	2
		BO 368	Botany Practical Paper 3	2	
		Skill Enhancement course	BO 3610	Botany Theory Paper 7	2
BO 3611	Botany Theory Paper 8		2		

2. Equivalence of Previous Syllabus:

Old Course (2013 Pattern)	New Course (2019 CBCS Pattern)
Fundamentals of Botany: PAPER – I Term- I: Plant Diversity	BO 111 Plant life and utilization I
Botany Theory Paper II Term I – Industrial Botany	BO 112 Plant morphology and Anatomy
Fundamentals of Botany: PAPER - I Term- II: Morphology and Anatomy	BO 121 Plant life and utilization II
Botany Theory Paper II Term- II – Industrial Botany	BO 122 Principles of plant science
F. Y. B. Sc. Botany Practical Paper - III based on Theory Paper I and Paper II	BO 113 Practical based on BO 111 & BO 112 and BO 123 Practical based on BO 121 & BO 122

SEMESTER-I: PAPER-I**BO-111: PLANT LIFE AND UTILIZATION I (30 Lectures)****CREDIT-I****15 Lectures (15 Hours)****1. INTRODUCTION 3 L**

General outline of plant kingdom (**Lower Cryptogams:** Thallophytes- Algae, Fungi & Lichens; **Higher Cryptogams:** Bryophytes and Pteridophytes; **Phanerogams:** Gymnosperms and Angiosperms- Dicotyledons and Monocotyledons). Distinguishing characters of these groups and mention few common examples from each.

2. ALGAE 9 L

- 2.1: Introduction
- 2.2: General Characters
- 2.3: Classification (Bold and Wynne 1978) up to classes with reasons
- 2.4: Life Cycle of *Spirogyra* w.r.t. Habit, Habitat, Structure of thallus, structure of typical cell, Reproduction- Vegetative, Asexual and Sexual, systematic position with reasons
- 2.5: Utilization of Algae in Biofuel Industry, Agriculture, Pharmaceuticals, Food and Fodder

3. LICHENS 3 L

- 3.1: Introduction
- 3.2: General Characters
- 3.3: Nature of Association, forms- Crustose, Foliose and Fruticose.
- 3.4: Utilization of lichens.

CREDIT-II**15 Lectures (15 Hours)****4. FUNGI 9 L**

- 4.1: Introduction
- 4.2: General Characters
- 4.3: Classification (Ainsworth, 1973)
- 4.4: Life Cycle of Mushroom- *Agaricus bisporus* w.r.t. Habit, Habitat, Structure of thallus, Structure of Sporocarp, Structure of Gill, Reproduction- Asexual and sexual, Systematic position.
- 4.5: Utilization of Fungi in Industry, Agriculture, Food and Pharmaceuticals.

5. BRYOPHYTES 6 L

- 5.1: Introduction
- 5.2: General Characters
- 5.3: Classification (G.M. Smith 1955)
- 5.4: Life Cycle of *Riccia* w.r.t. Habit, habitat, external and internal structure of thallus, Reproduction- vegetative, asexual and sexual- Structure of sex organs, fertilization, structure of mature sporophyte, structure of spore, systematic position with reasons.
- 5.5: Utilization: Bryophytes as ecological indicators, agriculture, fuel, industry and medicine.

(Development of sex organs not expected for all the above mentioned life cycles).

REFERENCES:

1. Ainswarth, Sussman and Sparrow (1973). The Fungi. Vol. IV-A and IV-B. Academic Press.
2. Bilgrami, K.S. and Saha, L.C. (1992) A Textbook of Algae. CBS Publishers and Distributors, Delhi.
3. Gangulee, Das and Dutta (2002). College Botany. Vol. I, New Central Book Agency (P) Ltd.
4. Dube, H.C. (1990). An Introduction to Fungi. Vikas Publishing House Pvt. Ltd., Delhi.
5. Krishnamurty, V. (2000). Algae of India and neighboring countries, Chlorophyta, Oxford and IBH, New Delhi.
6. Parihar, N.S. (1980). Bryophyta, An Introduction of Embryophyta. Vol. I. Central Book Distributors, Allahabad.
7. Puri, P. (1980). Bryophyta: Broad prospective. Atma Ram & Sons, Delhi.
8. Smith, G.M. (1971). Cryptogamic Botany. Vol. I: Algae & Fungi. Tata McGraw Hill Publishing Co., New Delhi.
9. Smith, G.M. (1971). Cryptogamic Botany. Vol. II: Bryophytes & Pteridophytes. Tata McGraw Hill Publishing Co., New Delhi.
10. Vashista, B.R., Sinha, A.K. and Singh, V.B. (2005). Botany for degree students- Algae, S. Chand Publication.
11. Vashista, B.R., Sinha, A.K. and Singh, V.B. (2005). Botany for degree students- Fungi, S. Chand Publication.
12. Vashista, B.R., Sinha, A.K. and Singh, V.B. (2005). Botany for degree students- Bryophytes, S. Chand Publication.

SEMESTER-I: PAPER-II**BO-112: PLANT MORPHOLOGY AND ANATOMY (30 Lectures)****CREDIT-I****15 Lectures (15 hours)****1. MORPHOLOGY:****2 L**

- 1.1: Introduction, definition, descriptive and interpretative morphology.
 1.2: Importance in identification, nomenclature, classification, phylogeny and Plant breeding.

2. MORPHOLOGY OF REPRODUCTIVE PARTS:**2.1: INFLORESCENCE:****3 L**

- 2.1.1 Introduction and definition
 2.1.2 Types:
 a) Racemose -Raceme, Spike, Spadix, Corymb, Umbel, Catkin and Capitulum.
 b) Cymose -Solitary, Monochasial- Helicoid and scorpioid; Dichasial and Polychasial.
 c) Special types -Verticillaster, Cyathium and Hypanthodium.
 2.1.3 Significance

2.2: FLOWER:**7 L**

- 2.2.1 Introduction and definition
 2.2.2 Parts of a typical flower: Bract, Pedicel, Thalamus- forms, Perianth- Calyx and Corolla, Androecium and Gynoecium.
 2.2.3 Symmetry: Actinomorphic and zygomorphic, Sexuality- Unisexual and bisexual, Insertion of floral whorls on thalamus- Hypogyny, Epigyny and perigyny, Merous condition-Trimerous, tetramerous and pentamerous.
 2.2.4 Floral whorls:
 a) **Calyx:** Nature- Polysepalous, Gamosepalous; Aestivation- types, Modifications of Calyx- Pappus, Petaloid and Spurred.
 b) **Corolla:** Forms of Corolla-
 i) Polypetalous- Cruciform and Papilionaceous.
 ii) Gamopetalous- Infundibuliform, Bilabiate, Tubular and Campanulate.
 iii) Aestivation- types and significance.
 c) **Perianth:** Nature- Polytepalous, Gamotepalous.
 d) **Androecium:** Structure of typical stamen, Variations- cohesion and adhesion.
 e) **Gynoecium:** Structure of typical carpel, number, position, cohesion and adhesion; placentation- types and significance.

2.3: FRUITS:**3 L**

- 2.3.1 Introduction and definition
 2.3.2 Types of fruits:
 a) **Simple:** Indehiscent - Achene, Cypsela, Nut and Caryopsis.
 Dehiscent - Legume, Follicle and Capsule,
 b) **Fleshy:** Drupe, Berry, Hesperidium and Pepo.
 c) **Aggregate:** Etaerio of Berries and Etaerio of Follicles.
 d) **Multiple fruits:** Syconus and Sorosis.

CREDIT- II**15 Lectures (15 Hours)****3. ANATOMY:****2 L**

3.1 Introduction and definition

3.2 Importance in Taxonomy, Physiology, Ecological interpretations, Pharmacognosy and Wood identification.

4. TYPES OF TISSUES:**8 L**

Outline with brief description, simple and complex tissues.

4.1: **Meristmatic tissues:** Meristem, characters and types based on origin, position and plane of division, functions.4.2: **Permanent tissues:** Simple tissues - parenchyma, collenchymas, chlorenchyma and sclerenchyma.4.3: **Complex/Vascular tissues:** Components of xylem and phloem, types of vascular bundles and functions.4.4: **Epidermal tissues:** Epidermis, structure of typical stomata, trichomes, motor cells; functions.**5. INTERNAL ORGANIZATION OF PRIMARY PLANT BODY:****5 L**

5.1: Internal structure of dicotyledon and monocotyledon root.

5.2: Internal structure of dicotyledon and monocotyledon stem.

5.3: Internal structure of dicotyledon and monocotyledon leaf.

REFERENCES:

1. Chandurkar, P.J. (1989). Plant Anatomy. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Dutta, A.C. (2003). Botany for Degree students. Oxford University Press, New Delhi.
3. Eames, J. and Mc. Daniels (1994). An Introduction to Plant Anatomy. Tata McGraw Hill Publishing Comp., New Delhi.
4. Esau, K. (1993). Plant Anatomy. Wiley Eastern Ltd. New Delhi.
5. Esau, K. (2006). Anatomy of seed plants. John Wiley and Sons, New York.
6. Fahn, A. (1974). Plant Anatomy. Pergamum Press Oxford.
7. Gangulee, Das and Dutta (2002). College Botany. Vol. I. New Central Book Agency, Kolkata.
8. Lawrence, G.H.M. (2012). Taxonomy of vascular Plants. Scientific Publishers (India) Jodhpur.
9. Naik, V.N. (1994). Taxonomy of Angiosperms. Tata McGraw Hill Publishing Comp., New Delhi.
10. Pandey, B.P. (2007). Plant Anatomy. S. Chand and Co. Ltd. New Delhi.
11. Pandey, B.P. (2009). A Text Book of Botany- Angiosperms. S. Chand and Co. Ltd. New Delhi.
12. Radford, Albert E. (1986). Fundamentals of Plant Systematics. Publ. Harper and Row, New York.
13. Saxena, A.K. and Sarabhai, R.P. (1968). A Text Book of Botany. Vol. III. Ratan Prakashan mandir, Agra.
14. Sharma, O.P. (1993). Plant Taxonomy. 2nd Edition, McGraw Hill Education, New Delhi.
15. Singh, Gurucharan (2005). Systematics- Theory and Practice. Oxford IBH.
16. Sutaria, R.N.A. Text Book of Systematic Botany.
17. Tayal, M.S. (2012). Plant Anatomy. Rastogi Publications.

BO 113: PRACTICALS BASED ON BO 111 & BO 112 (1.5 CREDITS)

- | | |
|---------------------------------------------------------------------------------------------------------------|------|
| 1. Study of Life Cycle of <i>Spirogyra</i> . | 1 P |
| 2. Study of Life Cycle of <i>Agaricus</i> . | 1 P |
| 3. Study of Life Cycle of <i>Riccia</i> | 1 P. |
| 4. Study of forms of Lichens- Crustose, Foliose and fruticose. | 1 P |
| 5. Study of Mushroom Cultivation. | 1 P |
| 6. One day visit to study Algae, Fungi, Bryophytes and Lichens. | 1 P |
| 7. Study of Inflorescence. | 2 P |
| a. Racemose: Raceme, Spike, Spadix, Catkin, Corymb, Umbel and Capitulum | |
| b. Cymose: Solitary cyme, Uniparous cyme: helicoid and scorpiod, Biparous cyme and Multiparous cyme. | |
| c. Special type: Verticillaster, Hypanthodium and Cyathium. | |
| 8. Study of flower with respect to Calyx, Corolla and Perianth, Androecium and Gynoecium. | 2 P |
| 9. Study of fruits with suitable examples. | 2 P |
| a) Simple fruit: Dry: Achene, Cypsella and Legume; Fleshy: Berry and Drupe. | |
| b) Aggregate fruit: Etaerio of follicles and Etaerio of Berries. | |
| c) Multiple fruit: Syconus and Sorosis. | |
| 10. Study of internal primary structure of dicotyledonous root and stem e.g. Sunflower. | 1 P |
| 11. Study of internal primary structure of monocotyledonous root and stem e.g. Maize. | 1 P |
| 12. Study of internal primary structure of dicotyledonous and monocotyledonous leaf e.g. Sunflower and Maize. | 1 P |

SEMESTER-II: PAPER-I**BO-121: PLANT LIFE AND UTILIZATION-II (30 Lectures)****CREDIT-I****15 Lectures (15 hours)**

1. **INTRODUCTION:** Introduction to plant diversity- Pteridophytes, Gymnosperms and Angiosperms with reference to vascular plants. 3 L
2. **PTERIDOPHYTES:** General characters, Outline classification according to Sporne (1976) up to classes with reasons. Life cycle of *Nephrolepis* w.r.t. Habit, habitat, distribution, morphology, anatomy of stem and leaf, Reproduction – vegetative and sexual. 10 L
3. Utilization and economic importance of Pteridophytes. 2 L

CREDIT-II**15 Lectures (15 hours)**

1. **GYMNOSPERMS:** General characters, Outline classification according to Sporne (1977) up to classes with reasons. Life cycle of *Cycas* w.r.t. Habit, Habitat, Distribution, Morphology and Anatomy of Stem, leaf and reproductive organs- Male cone, Microsporophyll, microspores and megasporophyll, megaspore; structure of seed; Utilization and economic importance of gymnosperms. 8 L
2. **ANGIOSPERMS:** General characters, Outline of classification of Bentham and Hooker's system up to series, comparative account of monocotyledons and dicotyledons. 4L
3. Utilization and economic importance of Angiosperms: In food, fodder, fibers, horticulture and medicines. 3L

REFERENCES:

1. Bendre, Ashok and Kumar, Ashok (1993). A Text Book of Practical Botany, Rastogy Publications, Meerut.
2. Chamberlain, C.J. (1934). Gymnosperms- Structure and Evolution. Chicago.
3. Coulter, J.M. and Chamberlain, C.J. (1917). Morphology of Gymnosperms. Chicago.
4. Davis, P.H. and Heywood, V.H. (1963). Principles of Angiosperms taxonomy. Oliver and Boyd Publ. London.
5. Dutta, S.C. (1988). Systematic Botany. Wiley Eastern Ltd., New Delhi.
6. Eames, E.J. (1983). Morphology of Vascular Plants. Standard University Press.
7. Gangulee and Kar (2006). College Botany. New Central Book Agency (P.) Ltd. Kolkata.
8. Naik, V.N. (1994). Taxonomy of Angiosperms. Tata McGraw Hill Publishing Comp., New Delhi.
9. Parihar, N.S. (1976). Biology and Morphology of Pteridophytes. Central Book Depot.
10. Rashid, A. (1999). An Introduction to Pteridophyta. Vikas Publishing House Pvt. Ltd. New Delhi.
11. Sharma, O.P. (1990). Text Book of Pteridophyta. McMillan India Ltd. Delhi.
12. Singh, V. and Jain, D.K. (2010). Taxonomy of Angiosperms. Rastogy Publications, Meerut.

13. Singh, V., Pande, P.C., and Jain, D.K. (2011). A Text Book of Botany: Angiosperms. Rastogy Publications, Meerut.
14. Smith, G.M. (1955). Cryptogamic Botany Vol. II. McGraw Hill.
15. Sporne, K.R. (1986). The Morphology of Pteridophytes. Hutchinson University Library, London.
16. Sundar Rajan, S. (1999). Introduction to Pteridophyta. New Age International Publishers, New Delhi.
17. Vashishta, P.C., Sinha, A.R. and Kumar, Anil (2006). Gymnosperms. S. Chand and Comp. Ltd. New Delhi.
18. Vashista, B.R., Sinha A.K. and Kumar, A. (2008). Botany for degree students- Pteridophyta, S. Chand and Comp. Ltd. New Delhi.

SEMESTER-II: PAPER-II**BO-122: PRINCIPLES OF PLANT SCIENCE (30 Lectures)****CREDIT-1: PLANT PHYSIOLOGY AND CELL BIOLOGY****15 Lectures (15 Hours)**

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 1. Introduction, definition and scope of plant physiology. | 1 L |
| 2. Diffusion – definition, importance of diffusion in plants, imbibition as a special type of diffusion. | 1 L |
| 3. Osmosis – definition, types of solutions (hypotonic, isotonic, hypertonic), endosmosis, exo-osmosis, osmotic pressure, turgor pressure, wall pressure, importance of osmosis in plants. | 2 L |
| 4. Plasmolysis – definition, mechanism and significance. | 1 L |
| 5. Plant growth - introduction, phases of growth, factors affecting growth, | 2 L |
| 6. Structure of plant cell, differences between prokaryotic and eukaryotic cell. | 2 L |
| 7. Plant cell wall – components of primary cell wall, structure and functions. | 1 L |
| 8. Ultrastructure and functions of chloroplast | 2 L |
| 9. Cell cycle in plants- importance of cell cycle in plants, divisional stages of mitosis and meiosis. | 3 L |

CREDIT-II: MOLECULAR BIOLOGY**(15 Lectures) 15 Hours**

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 1. Introduction and scope of molecular biology, central dogma of molecular biology. | 2 L |
| 2. Structure of DNA, nucleoside and nucleotide | 2 L |
| 3. Watson Crick model of DNA and its characteristic features, types of DNA (A, B and Z DNA). | 3 L |
| 4. Types of chromosomes. | 2 L |
| 5. Structure and types of RNA. | 3 L |
| 6. DNA replication- Types of replication (conservative, semi-conservative and dispersive), enzymes involved, leading and lagging strands, Okazaki fragments. | 3 L |

REFERENCES:

- Buchanan, B.B, Gruissem, W. and Jones, R.L (2000). Biochemistry and Molecular Biology of Plants. American Society of Plant Physiologists Maryland, USA.
- Cooper, G.M. and Hausman, R.E. (2007). The Cell: Molecular Approach 4th Edition, Sinauer Associates, USA.
- David, Nelson and Cox, Michael (2007). Lehninger Principles of Biochemistry. W.H. Freeman and Company. New York.
- Devlin, R.M. (1983). Fundamentals of Plant Physiology. Mc. Millan, New York.
- Dutta, A.C. (2000). A Class Book of Botany. Oxford University Press, UK.
- Hopkins, William G. (1995). Introduction to Plant Physiology. Publ. John Wiley and Sons, Inc.

7. Lewin, Benjamin (2011). Genes. X Jones and Bartlett.
8. Lincoln, Taiz and Eduardo, Zeiger (2010). Plant Physiology. 5th Edition. Sinauer Associates, Inc. Publishers. Sunderland, USA.
9. Opik, Helgi, Rolfe, Stephen A. and Willis, Arthur J. (2005). The Physiology of Flowering Plants. Cambridge University Press, UK.
10. Pal, J.K. and Ghaskadbi, Saroj (2009). Fundamentals of Molecular Biology. Oxford University Press. India.
11. Pandey, S.N. and Sinha, B.K. (2014). Plant Physiology. Vikas Publishing House Pvt. Ltd., India.
12. Salisbury, F.B. and Ross, C.B. (2005). Plant Physiology. 5th Edition. Wadsworth Publishing Co. Belmont California, USA.
13. Watson, James D., Baker, Tania; Bell, Stephen P.; Alexander Gann; Levine, Michael and Lodwick, Richard (2008). Molecular Biology of the Gene. 6th Edition, Pearson Education, Inc. and Dorling Kindersley Publishing, Inc. USA.
14. Weaver, R. (2011). Molecular Biology. 5th Edition, Publisher- McGraw Hill Science. USA.

BO 123: PRACTICALS BASED ON BO 121 & BO 122 (1.5 CREDITS)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 1. Study of life cycle of <i>Nephrolepis</i> . | 1 P |
| 2. Study of life cycle of <i>Cycas</i> . | 1 P |
| 3. Study of Bentham and Hooker's system of classification outline up to series with example | 1 P |
| 4. Study of comparative account of Dicotyledonous and Monocotyledonous plants w.r.t to external morphological characters. | 1 P |
| 5. Study of utilization and economic importance of Angiosperms- food, fodder, fibers, horticulture and medicines. | 1 P |
| 6. One day visit to study diversity of vegetation. | 2 P |
| 7. To observe characteristic features of prokaryotic and eukaryotic plant cell. | 1 P |
| 8. Staining of suitable nuclear material by Basic Fuchsin | 1 P |
| 9. Study of mitosis- preparation of slides using onion root tips to observe divisional stages. | 1 P |
| 10. Study of meiosis- preparation of slides using <i>Tradescantia/ Rhoeco/ Maize /</i> Onion flower buds to observe divisional stages. | 2 P |
| 11. Estimation of chlorophyll-a and chlorophyll-b by using suitable plant material. | 1 P |
| 12. Plasmolysis- endosmosis, exosmosis, incipient plasmolysis using <i>Rhoeco</i> leaf peeling and Demonstration of Osmosis- curling experiment. | 1 P |
| 13. Study of DPD by using suitable plant sample | 1 P |



Savitribai Phule Pune University

(Formerly University of Pune)

Three Year B.Sc. Degree Program in Chemistry

(Faculty of Science & Technology)

F.Y.B.Sc. Chemistry

Choice Based Credit System [CBCS] Syllabus

To be implemented from Academic Year 2019-2020

Structure of F. Y. B. Sc. Chemistry

Semester	Course	Discipline Specific Core Course (DSCC)*
I	Theory	CH-101 : Physical Chemistry (2 credit , 36 L)
	Theory	CH-102 : Organic Chemistry (2 credit, 36 L)
	Practical	CH-103 : Chemistry Practical –I (1.5 Credit, 46.8 L)
II	Theory	CH-201 :Inorganic Chemistry (2 credit , 36 L)
	Theory	CH-202 : Organic Chemistry (2 credit, 36 L)
	Practical	CH-203 : Chemistry Practical –II (1.5 Credit, 46.8 L)

***N.B.:**

- i. Each lecture (L) will be of 50 minutes.**
- ii. Each practical of 3h 15 min and 12 practicals per semester**
- iii. 12 weeks for teaching 03 weeks for Continuous Assessments**

Savitribai Phule Pune University, Pune

F.Y.B.Sc. Chemistry Syllabus

(CBCS Semester Pattern)

From Academic Year 2019-2020

Equivalence with Previous Syllabus

New Course (2019 Semester Pattern) (50 min /L)	Old Course (2013 Annual Pattern) (48 min /L)
CH-101 : Physical Chemistry (2 credit , 36 L) 50 Marks	Paper I : Physical and Inorganic Chemistry (72 L) 100 Marks
CH-201 : Inorganic Chemistry (2 credit , 36 L) 50 Mark	
CH-102 : Organic Chemistry (2 credit, 36 L) 50 Marks	Paper II : Organic and Inorganic Chemistry (72 L) 100 Marks
CH-202 : Organic Chemistry (2 credit, 36 L) 50 Marks	
CH-103 : Chemistry Practical-I (1.5 Credit, 46.8 L) 50 Marks	Paper III : Chemistry Practical 100 Marks
CH-203 : Chemistry Practical-II (1.5 Credit, 46.8L) 50 Marks	

Learning Objectives:

1. To understand basic concept of physical, organic and Inorganic chemistry.
2. To impart practical skills and learn basics behind experiments.
3. To prepare background for advanced and applied studies in chemistry.

SEMESTER-I

CH- 101: Physical Chemistry (2 Credits, 36 Lectures of 50 min.)

1. Chemical Energetics

Review of thermodynamics and the Laws of Thermodynamics. Important principles and definitions of thermochemistry. Concept of standard state and standard enthalpies of formations, integral and differential enthalpies of solution and dilution. Calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data. Variation of enthalpy of a reaction with temperature – Kirchoff's equation. Statement of Third Law of thermodynamics and calculation of absolute entropies of substances, problems

(11 L)

2. Chemical Equilibrium:

Introduction: Free Energy and equilibrium - Concept, Definition and significance
The reaction Gibbs Energy, Exergonic and endergonic reaction. The perfect gas equilibrium, the general case of equilibrium, the relation between equilibrium constants, Molecular interpretation of equilibrium constant. The response of equilibria to conditions- response to pressure , response to temperature, Van't Haff equation, Value of K at different temperature, Problems

(11 L)

3. Ionic Equilibria

Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, ionization constant and ionic product of water. Ionization of weak acids and bases, pH scale, common ion effect. Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions. Solubility and solubility product of sparingly soluble salts-applications of solubility product principle.

(14 L)

Learning Outcome

1. Chemical Energetics

1. Students will be able to apply thermodynamic principles to physical and chemical process
2. Calculations of enthalpy , Bond energy, Bond dissociation energy , resonance energy
3. Variation of enthalpy with temperature –Kirchoff's equation
4. Third law of thermodynamic and its applications

2. Chemical Equilibrium

Knowledge of Chemical equilibrium will make students to understand

1. Relation between Free energy and equilibrium and factors affecting on equilibrium constant.
2. Exergonic and endergonic reaction
3. Gas equilibrium , equilibrium constant and molecular interpretation of equilibrium constant
4. Van't Haff equation and its application

3. Ionic equilibria

Ionic equilibria chapter will lead students to understand

1. Concept to ionization process occurred in acids, bases and pH scale
2. Related concepts such as Common ion effect hydrolysis constant, ionic product, solubility product
3. Degree of hydrolysis and pH for different salts, buffer solutions

CH- 102: Organic Chemistry (2 Credits, 36 Lectures of 50 min.)

Fundamentals of Organic Chemistry

Physical Effects, Electronic Displacements: Inductive Effect, Electromeric Effect, Resonance and Hyperconjugation. Cleavage of Bonds: Homolysis and Heterolysis. Structure, shape and reactivity of organic molecules: Nucleophiles and electrophiles. Reactive Intermediates: Carbocations, Carbanions and free radicals. Strength of organic acids and bases: Comparative study with emphasis on factors affecting pK values. Aromaticity: Benzenoids and Hückel's rule.

(9 L)

Stereochemistry

Introduction, classification, Interconversion of Wedge Formula, Newmann, Sawhorse and Fischer representations. Conformations with respect to ethane, butane and cyclohexane. Configuration: Geometrical - *cis* – *trans*, and E / Z Nomenclature (for upto two C=C systems). Optical isomerism Enantiomerism, Diastereomerism and Meso compounds). Concept of chirality (upto two carbon atoms). Threo and erythro; D and L; nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms)

(14L)

Aliphatic Hydrocarbons

Functional group approach for the following reactions (preparations & reactions) to be studied in context to their structure.

Alkanes: (Up to 5 Carbons) *Preparation:* Catalytic hydrogenation, Wurtz reaction, Kolbe's synthesis, from Grignard reagent. *Reactions:* Free radical Substitution: Halogenation.

Alkenes:(Up to 5 Carbons)*Preparation:* Elimination reactions: Dehydration of alkenes and dehydrohalogenation of alkyl halides (Saytzeff's rule); *cis* alkenes (Partial catalytic hydrogenation) and *trans* alkenes (Birch reduction). *Reactions:* *cis*-addition (alk. KMnO₄) and *trans*-addition (bromine), Addition of HX (Markownikoff's and anti-Markownikoff's addition), Hydration, Ozonolysis, oxymercuration-demercuration, Hydroboration-oxidation.

Alkynes: (Upto 5 Carbons) *Preparation:* Acetylene from CaC₂ and conversion into higher alkynes; by dehalogenation of tetra halides and dehydrohalogenation of vicinal-dihalide *Reactions:* formation of metal acetylides, addition of bromine and alkaline KMnO₄, ozonolysis and oxidation with hot alk. KMnO₄.

(13 L)

Learning Outcome

1. The students are expected to understand the fundamentals, principles, and recent developments in the subject area.
2. It is expected to inspire and boost interest of the students towards chemistry as the main subject.
3. To familiarize with current and recent developments in Chemistry.
4. To create foundation for research and development in Chemistry.

Reference Books

1. Graham Solomon, T.W., Fryhle, C.B. & Snyder, S.A. *Organic Chemistry*, John Wiley & Sons (2014).
 2. Mc Murry, J.E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013.
 3. Sykes, P. *A Guidebook to Mechanism in Organic Chemistry*, Orient Longman, New Delhi (1988).
 4. Eliel, E.L. *Stereochemistry of Carbon Compounds*, Tata McGraw Hill education, 2000.
 5. Finar, I.L. *Organic Chemistry* (Vol. I & II), E.L.B.S.
 6. Morrison, R.T. & Boyd, R.N. *Organic Chemistry*, Pearson, 2010.
 7. Bahl, A. & Bahl, B.S. *Advanced Organic Chemistry*, S. Chand, 2010.
 8. Marron and Prutton, *Principals of Physical Chemistry*
 9. B S Bahl, G D Tuli, Arun Bahl, *Essentials of Physical Chemistry*
 10. Peter Atkins and Julio de Paula, *Elements of Physical Chemistry*, Sixth edition (2013), Oxford press
 11. Atkins' *Physical Chemistry – Thermodynamics and Kinetics*, 11th Edition, Oxford Press
 12. Thomas Engel, Philip Reid; *Physical Chemistry*, Pearson Education (2006)
 13. J. N. Gurtu, A. Gurtu; *Advanced Physical Chemistry*, Pragati Edition
 14. Samuel H. Maron and Carl F. Prutton, *Principals of physical Chemistry*, 4th Edition, Collier Macmillan Ltd.
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CH- 103: Chemistry Practical Course I

(1.5 Credits, 46.8 Lectures of 50 min.)

Section A: Chemical and Lab Safety (Compulsory)

1. Toxicity of the compounds used in chemistry laboratory.
2. Safety symbol on labels of pack of chemicals and its meaning
3. What is MSDS sheets? Find out MSDS sheets of at least hazardous chemicals ($K_2Cr_2O_7$, Benzene, cadmium nitrate, sodium metal, etc.)
4. Precautions in handling of hazardous substances like Conc. acids, ammonia, organic solvents, etc.

Section B: Physical Chemistry

a. Thermochemistry (Any three)

1. Determination of heat capacity of calorimeter for different volumes.
2. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.
3. Determination of enthalpy of ionization of acetic acid.
4. Determination of integral enthalpy of solution of salts (KNO_3 , NH_4Cl).
5. Determination of enthalpy of hydration of copper sulphate.
6. Study of the solubility of benzoic acid in water and determination of ΔH .

b. Ionic equilibria (Two experiments)

1. Measurement of pH of different solutions like aerated drinks, fruit juices, shampoos and soaps (use dilute solutions of soaps and shampoos to prevent damage to the glass electrode) using pH-meter.

OR

1. Measurement of the pH of buffer solutions and comparison of the values with theoretical values.
2. Preparation of buffer solutions (Any One)
 - (i) Sodium acetate-acetic acid and determine its buffer capacity
 - (ii) Ammonium chloride-ammonium hydroxide and determine its buffer capacity

Section C: Organic Chemistry(Five experiments)

1. Detection of extra elements (N, S, Cl, Br, I) in organic compounds (containing upto two extra elements) (Three)
2. Separation of constituents of mixtures by Chromatography: Measure the R_f value in each case(Two)
 - (a) Identify and separate the components of a given mixture of 2 amino acids (glycine, aspartic acid, glutamic acid, tyrosine or any other amino acid) by paper chromatography
 - (b) Identify and separate the sugars present in the given mixture by paper chromatography.

Note: Combination of two compounds to be given

Reference Books:

1. Svehla, G. *Vogel's Qualitative Inorganic Analysis*, Pearson Education, 2012.
2. Mendham, J. *Vogel's Quantitative Chemical Analysis*, Pearson, 2009.
3. Vogel, A.I., Tatchell, A.R., Furnis, B.S., Hannaford, A.J. & Smith, P.W.G., *Textbook of Practical Organic Chemistry*, Prentice-Hall, 5th edition, 1996.
4. Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry* Orient-Longman, 1960.
5. Khosla, B. D.; Garg, V. C. & Gulati, A. *Senior Practical Physical Chemistry*, R.Chand & Co.: New Delhi (2011).
6. Prof. Robert H. Hill Jr., David C. Finster *Laboratory Safety for Chemistry Students*, 2nd Edition Wiley ISBN: 978-1-119-02766-9 May 2016
7. *Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards*, Updated Version, ISBN 978-0-309-13864-2 | DOI 10.17226/12654, THE NATIONAL ACADEMIES PRESS Washington, D.C.

Learning Outcome

1. Importance of chemical safety and Lab safety while performing experiments in laboratory
 2. Determination of thermochemical parameters and related concepts
 3. Techniques of pH measurements
 4. Preparation of buffer solutions
 5. Elemental analysis of organic compounds (non instrumental)
 6. Chromatographic Techniques for separation of constituents of mixtures
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SEMESTER-II

CH-201: Inorganic Chemistry (2 Credits, 36 Lectures of 50 min.)

1. Atomic Structure

Origin of Quantum Mechanics: Why study quantum mechanics ?, Quantum mechanics arose out of interplay of experiments and Theory Energy quantization- i) Black body radiation ii) The photoelectric effect iii) Wave particle duality-a) The particle character of electromagnetic radiation b) the wave character of particle, iv) diffraction by double slit v) atomic spectra, Review of-Bohr's theory and its limitations, Heisenberg Uncertainty principle.

Quantum mechanics: Time independent Schrodinger equation and meaning of various terms in it, Significance of ψ and ψ^2 , Schrödinger equation for hydrogen atom. Radial and angular parts of the hydrogenic wave functions (atomic orbitals) and their variations for $1s$, $2s$, $2p$, $3s$, $3p$ and $3d$ orbitals (Only graphical representation). Radial and angular nodes and their significance. Radial distribution functions and the concept of the most probable distance with special reference to $1s$ and $2s$ atomic orbitals. Significance of quantum numbers, orbital angular momentum and quantum numbers ml and ms . Shapes of s , p and d atomic orbitals, nodal planes. Discovery of spin, spin quantum number (s) and magnetic spin quantum number (ms).

(12 L)

2. Periodicity of Elements

Rules for filling electrons in various orbitals, Electronic configurations of the atoms. Stability of half-filled and completely filled orbitals concept of exchange energy. Relative energies of atomic orbitals, Anomalous electronic configurations

Long form of periodic table-s, p, d, and f block elements

Detailed discussion of following properties of elements with reference to s and p block

- Effective nuclear charge, shielding or screening effect
- Atomic and ionic radii
- Crystal radii
- Covalent radii
- Ionization energies
- Electronegativity, Pauling's / electronegativity scale
- Oxidation states of elements

(09 L)

3. Chemical Bonding

Attainment of stable electronic configurations, Types of Chemical bonds: Ionic, covalent, coordinate and metallic bonds

Ionic Bond: General characteristics of ionic bonding, Types of ions, Energy considerations in ionic bonding, lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds. Statement of Born-Landé equation for calculation of lattice energy,

Born-Haber cycle and its applications, polarizing power and polarizability. Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character.

Covalent bond: Valence Bond Approach, Hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements. VSEPR theory, Assumptions, need of theory, application of theory to explain geometries of molecules such as i) ClF_3 ii) Cl_2O iii) BrF_5 iv) XeO_3 v) XeOF_4

(09 L)

4. Calculations used in Analytical Chemistry

Some important units of measurements-SI units, distinction between mass and weight, mole, millimole and Calculations

Solution and their concentrations- Molar concentrations, Molar analytical Concentrations, Molar equilibrium concentration, percent Concentration, part per million, part per billion, part per thousand, Solution –dilutant volume ration, functions, density and specific gravity of solutions, problems

Chemical Stoichiometry – Empirical and Molecular Formulas, Stoichiometric Calculations, Problems.

(06 L)

Learning Outcome

1. Atomic Structure

1. Various theories and principles applied to reveal atomic structure
2. Origin of quantum mechanics and its need to understand structure of hydrogen atom
3. Schrodinger equation for hydrogen atom
4. Radial and angular part of hydrogenic wave functions
5. Significance of quantum numbers
6. Shapes of orbitals

2. Periodicity of Elements

1. Explain rules for filling electrons in various orbitals- Aufbau's principle, Pauli exclusion principle, Hund's rule of maximum multiplicity
2. Discuss electronic configuration of an atom and anomalous electronic configurations.
3. Describe stability of half-filled and completely filled orbitals.
4. Discuss concept of exchange energy and relative energies of atomic orbitals
5. Design Skeleton of long form of periodic table.
6. Describe Block, group, modern periodic law and periodicity.
7. Classification of elements as main group, transition and inner transition elements
8. Write name, symbol, electronic configuration, trends and properties.
9. Explain periodicity in the following properties in details:
 - a. Effective nuclear charge, shielding or screening effect; some numerical problems.
 - b. Atomic and ionic size.
 - c. Crystal and covalent radii

- d. Ionization energies
- e. Electronegativity- definition, trend, Pauling electronegativity scale.
- f. Oxidation state of elements

3. Chemical Bonding

1. Attainment of stable electronic configurations.
2. Define various types of chemical bonds- Ionic, covalent, coordinate and metallic bond
3. Explain characteristics of ionic bond, types of ions, energy consideration in ionic bonding, lattice and solvation energy and their importance in the context of stability and solubility of ionic compounds
4. Summarize Born-Landé equation and Born-Haber cycle,
5. Define Fajan's rule, bond moment, dipole moment and percent ionic character.
6. Describe VB approach, Hybridization with example of linear, trigonal, square planer, tetrahedral, TBP, and octahedral.
7. Discuss assumption and need of VSEPR theory.
8. Interpret concept of different types of valence shell electron pairs and their contribution in bonding.
9. Application of non-bonded lone pairs in shape of molecule
10. Basic understanding of geometry and effect of lone pairs with examples such as ClF_3 , Cl_2O , BrF_5 , XeO_3 and XeOF_4 .

4. Calculations used in Analytical Chemistry

1. Calculations of mole, molar concentrations and various units of concentrations which will be helpful for preparation of solution
2. Relation between molecular formula and empirical formula
3. Stoichiometric calculation
4. Define term mole, millimole, molar concentration, molar equilibrium concentration and Percent Concentration.
5. SI units, distinction between mass and weight
6. Units such as parts per million, parts per billion, parts per thousand, solution-dilutant volume ratio, function density and specific gravity of solutions.

CH- 202: Organic Chemistry (2 Credits, 36 Lectures of 50 min.)

Functional group approach for the following reactions (preparations & reactions) to be studied in context to their structure.

1. Aromatic hydrocarbons

Preparation (Case benzene): from phenol, by decarboxylation, from acetylene, from benzene sulphonic acid. *Reactions* (Case benzene): Electrophilic substitution: nitration, halogenation and sulphonation. Friedel-Craft's reaction (alkylation and acylation) (upto 4 carbons on benzene). Side chain oxidation of alkyl benzenes (upto 4 carbons on benzene).

(07 L)

2. Alkyl and Aryl Halides

Alkyl Halides (Upto 5 Carbons) Types of Nucleophilic Substitution (S_N1 , S_N2 and S_Ni) reactions. *Preparation*: from alkenes and alcohols. *Reactions*: hydrolysis, nitrite & nitro formation, nitrile & isonitrile formation. Williamson's ether synthesis: Elimination vs substitution.

Aryl Halides *Preparation*: (Chloro, bromo and iodo-benzene case): from phenol, Sandmeyer & Gattermann reactions. *Reactions (Chlorobenzene)*: Aromatic nucleophilic substitution (replacement by $-OH$ group) and effect of nitro substituent. Benzyne Mechanism: KNH_2/NH_3 (or $NaNH_2/NH_3$). Reactivity and Relative strength of C-Halogen bond in alkyl, allyl, benzyl, vinyl and aryl halides.

(12 L)

3. Alcohols, Phenols and Ethers (Upto 5 Carbons)

Alcohols: *Preparation*: Preparation of 1° , 2° and 3° alcohols: using Grignard reagent, Ester hydrolysis, Reduction of aldehydes, ketones, carboxylic acid and esters. *Reactions*: With sodium, HX (Lucas test), esterification, oxidation (with PCC, alk. $KMnO_4$, acidic dichromate, conc. HNO_3). Oppeneauer oxidation *Diols*: (Upto 6 Carbons) oxidation of diols. Pinacol-Pinacolone rearrangement.

Phenols: (Phenol case) *Preparation*: Cumen hydroperoxide method, from diazonium salts. *Reactions*: Electrophilic substitution: Nitration, halogenation and sulphonation. Reimer- Tiemann Reaction, Gattermann-Koch Reaction, Houben-Hoesch Condensation, Schotten – Baumann Reaction.

Ethers (aliphatic and aromatic): Cleavage of ethers with HI.

(12 L)

4. Aldehydes and ketones (aliphatic and aromatic): (Formaldehyde, acetaldehyde, acetone and benzaldehyde)

Preparation: from acid chlorides and from nitriles.

Reactions – Reaction with HCN, ROH, $NaHSO_3$, NH_2-G derivatives. Iodoform test. Aldol Condensation, Cannizzaro's reaction, Wittig reaction, Benzoin condensation. Clemenson reduction and Wolff Kishner reduction. Meerwein-Ponndorf Verley reduction.

(05 L)

Reference Books:

1. Lee, J.D. *Concise Inorganic Chemistry* ELBS, 1991.
2. Cotton, F.A., Wilkinson, G. & Gaus, P.L. *Basic Inorganic Chemistry*, 3rd ed., Wiley.
3. Douglas, B.E., McDaniel, D.H. & Alexander, J.J. *Concepts and Models in Inorganic Chemistry*, John Wiley & Sons.
4. Huheey, J.E., Keiter, E.A., Keiter, R.L. & Medhi, O.K. *Inorganic Chemistry: Principles of Structure and Reactivity*, Pearson Education India, 2006.
5. Graham Solomon, T.W., Fryhle, C.B. & Snyder, S.A. *Organic Chemistry*, John Wiley & Sons (2014).
6. Mc Murry, J.E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013.

7. Sykes, P. *A Guidebook to Mechanism in Organic Chemistry*, Orient Longman, New Delhi (1988).
 8. Finar, I.L. *Organic Chemistry* (Vol. I & II), E.L.B.S.
 9. Morrison, R.T. & Boyd, R.N. *Organic Chemistry*, Pearson, 2010.
 10. Bahl, A. & Bahl, B.S. *Advanced Organic Chemistry*, S. Chand, 2010.
 11. Barrow, G.M. *Physical Chemistry* Tata McGraw-Hill (2007).
 12. Castellan, G.W. *Physical Chemistry* 4th Ed. Narosa (2004).
 13. Kotz, J.C., Treichel P.M. & Townsend, J.R. *General Chemistry* Cengage Learning India Pvt. Ltd., New Delhi (2009).
 14. Mahan, B.H. *University Chemistry* 3rd Ed. Narosa (1998).
 15. Petrucci, R.H. *General Chemistry* 5th Ed. Macmillan Publishing Co.: New York (1985).
 16. Douglas A Skoog, Donald M West , F James Holler , Stainly R Crouch , *Fundamentals of Analytical Chemistry*, 9th edition
 17. *Atkins' Physical Chemistry*, 10th edition (2014), Oxford University Press
 18. Thomas Engel, Philip Reid; *Physical Chemistry*, Pearson Education (2006)
 19. J. N. Gurtu, A. Gurtu; *Advanced Physical Chemistry*, Pragati Edition
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CH- 203: Chemistry Practical –II (1.5 Credits, 46.8 Lectures of 50 min.)

Section A: Inorganic Chemistry

I. Volumetric Analysis (Any Three)

1. Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture.
2. Estimation of oxalic acid by titrating it with KMnO_4 .
3. Estimation of water of crystallization in Mohr's salt by titrating with KMnO_4 .
4. Estimation of Fe (II) ions by titrating it with $\text{K}_2\text{Cr}_2\text{O}_7$ using internal indicator.
5. To draw polar plots of s and p orbitals

II] Synthesis of commercially important inorganic compounds (any two)

- 1) Synthesis of potash alum from aluminum metal (scrap Aluminum metal)
- 2) Synthesis of Mohr's Salt $[(\text{FeSO}_4)(\text{NH}_4)_2\text{SO}_4]\cdot 6\text{H}_2\text{O}$
- 3) Preparation of Dark red inorganic pigment (Cu_2O)
- 4) Synthesis of $\text{FeSO}_4\cdot 7\text{H}_2\text{O}$

III] Analysis of commercial products (any one)

- 1) Estimation of Ca from calcium supplementary tablet by complexometric titration.
- 2) Estimation of acid neutralizing capacity of antacids like Gelusil tablet/ gellusil syrup etc.
- 3) Estimation of Cu (II) from brass alloy by iodometrically.

Section B: Organic Chemistry

1. Purification of organic compounds by crystallization (from water and alcohol) and distillation.

(Two Compounds)

1. Preparations: Mechanism of various reactions involved to be discussed. Recrystallization, determination of melting point and calculation of quantitative yields to be done. (Any Two)
 - a) Bromination of Cinnamic acid using sodium bromide and Sodium bromate.

(Green Chemistry Approach)

OR

- a) Bromination of acetanilide using KBr and Ferric ammonium nitrate in aqueous medium. (Green Chemistry Approach)
- b) Semicarbazone derivatives of aldehydes and ketones
- c) Oxime and 2,4-dinitrophenylhydrazone of aldehyde/ketone

N. B.:

1. Use molar concentrations for volumetric /estimations/synthesis experiments.
2. Use optimum concentrations and volumes
3. Two burette method should be used for volumetric analysis (Homogeneous mixtures)
4. Use of microscale technique is recommended wherever possible

Reference Books:

1. Svehla, G. *Vogel's Qualitative Inorganic Analysis*, Pearson Education, 2012.
2. Mendham, J. *Vogel's Quantitative Chemical Analysis*, Pearson, 2009.
3. Vogel, A.I., Tatchell, A.R., Furnis, B.S., Hannaford, A.J. & Smith, P.W.G., *Textbook of Practical Organic Chemistry*, Prentice-Hall, 5th edition, 1996.
4. Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry* Orient-Longman, 1960.

5. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R.Chand & Co.: New Delhi (2011).

Learning Outcome

1. Inorganic Estimations using volumetric analysis
2. Synthesis of Inorganic compounds
3. Analysis of commercial products
4. Purification of organic compounds
5. Preparations and mechanism of reactions involved

Course Outcome

CH- 101: Physical Chemistry

After completing the course work learner will be acquired with knowledge of chemical energetics, Chemical equilibrium and ionic equilibria.

CH- 102: Organic Chemistry

Will learn Fundamentals of organic chemistry, stereochemistry (Conformations, configurations and nomenclatures) and functional group approach for aliphatic hydrocarbons

CH- 201: Inorganic Chemistry

Students will learn quantum mechanical approach to atomic structure, Periodicity of elements, various theories for chemical bonding and calculations used in analytical chemistry

CH-202: Organic Chemistry

Students will learn Functional group approach for the various reactions (preparations & reactions) in context to their structure

Lab Course CH 103 and CH-203

1. The practical course is in relevance to the theory courses to improve the Understanding of the concepts.
 2. It would help in development of practical skills of the students.
 3. Use of microscale techniques wherever required
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Savitribai Phule Pune University

(Formerly University of Pune)

Three Year B.Sc. Degree Program in Mathematics

(Faculty of Science & Technology)

F.Y.B.Sc. (Mathematics)

Choice Based Credit System Syllabus

To be implemented from Academic Year 2019-2020

Title of the Course: B. Sc (Mathematics)

Preamble:

SavitribaiPhule Pune University has decided to change the syllabi of various faculties from June,2019. Taking into consideration the rapid changes in science and technology and new approaches in different areas of mathematics and related subjects board of studies in mathematics with concern of teachers of mathematics from different colleges affiliated to SavitribaiPhule Pune University has prepared the syllabus of F. Y. B.Sc. Mathematics. To develop the syllabus the U.G.C. Model curriculum is followed.

Aims:

- (i)** Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of innumerable power of mathematical ideas and tools and know how to use them by modeling, solving and interpreting.
- (ii)** Reflecting the broad nature of the subject and developing mathematical tools for continuing further study in various fields of science and technology.
- (iii)** Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
- (iv)** Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

Objectives:

- (i)** A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays, state important facts resulting from their studies.
- (ii)** A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
- (iii)** A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.
- (iv)** A student be able to apply their skills and knowledge, that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.
- (v)** A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture.

Course Outcome:

Upon successful completion of this course, the student will be able to:

- i) The mathematical maturity of students in their current and future courses shall develop.
- ii) The student develops theoretical, applied and computational skills.
- iii) The student gains confidence in proving theorems and solving problems.

Structure of the course:

	Semester - I		Semester -II		Credit
Paper I	MT-111	Algebra	MT-121	Analytical Geometry	2
Paper II	MT-112	Calculus - I	MT-122	Calculus - II	2
Paper III	MT-113	Mathematics Practical	MT-123	Mathematics Practical	1.5

Proposed Structure of S. Y. B. Sc. Mathematics Courses:

	Semester - III		Semester -IV		
Paper I	MT-231	Calculus of Several Variables	MT-241	Linear Algebra-I	2
Paper II	MT-232 (A)	Laplace Transform and Fourier Series	MT-242(A)	Vector Calculus	2
	MT-232 (B)	Computational Geometry	MT-242(B)	Numerical Analysis	2
Paper III	MT-233	Mathematics Practical	MT-243	Mathematics Practical	2

Proposed Structure of T. Y. B. Sc. Mathematics Courses:

Semester- V		Semester- VI		Credit
MT 351	Metric Spaces	MT 361	Complex Analysis	2
MT 352	Real Analysis-I	MT 362	Real Analysis-II	2
MT 353	Problem Course on MT 351 and MT 352	MT 363	Problem Course on MT 361 and MT 362	2
MT 354	Group Theory-I	MT 364	Ring Theory-I	2
MT 355	Ordinary Differential Equations-I	MT 365	Partial Differential Equations-I	2
MT 356	Problem Course on MT 354 and MT 355	MT 366	Problem Course on MT 364 and MT 365	2

Select Any Two out of six courses				
MT357:A	Operations Research	MT367: A	Optimization Techniques	2
MT357:B	Number Theory	MT367: B	Graph theory	2
MT357:C	C- Programming	MT367: C	Lebesgue Integration	2
MT357:D	Lattice Theory	MT367: D	Financial Mathematics	2
MT357:E	Python Course -I	MT367: E	Python Course-II	2
MT357:F	Machine Learning Course- I	MT367: F	Machine Learning Course- II	2
MT 338	Practical based on papers selected from 357 A to 357 F	MT 348	Practical based on papers selected from 367 A to 367 F	2
MT-3510	Skill Enhancement course in maths	MT- 3511	Skill Enhancement course in maths	2
MT-3610	Skill Enhancement course in maths	MT- 3611	Skill Enhancement course in maths	2

All three above courses are compulsory.

1. Equivalence of Previous syllabus along with new syllabus:

	Old course	New Course
Paper I	MT-101 : Algebra and Geometry	MT-111: Algebra and MT-121 : Analytical Geometry
Paper II	MT-102 : Calculus and Differential Equations	MT-112 : Calculus - I and MT-122 : Calculus – II
Paper III	MT-103 : Mathematics Practical	MT – 113 : Mathematics Practical and MT – 113 : Mathematics Practical

Details of Syllabus:**Semester – I****MT 111- Algebra****Unit 1: Sets Relations and Functions (8 Lectures)**

- 1.1 Sets, Relations, Equivalence relations, Equivalence classes and partitions of a set
- 1.2 Functions, Basic terminology, Types of Functions, Inverse of a Function, Composition of Functions (Excluding theorems only examples).

Unit2: Divisibility Theory in the Integers(10 Lectures)

- 2.1 Mathematical Induction:Well-Ordering Principle.
- 2.2 The Division Algorithm, The Greatest Common Divisor, Euclid's Lemma, The Least Common Multiple, The Euclidean Algorithm.

Unit 3: Primes and the theory of Congruence (8 Lectures)

- 3.1 The Fundamental Number of Arithmetic: Prime Numbers, Euclid's Lemma.
- 3.2 The theory of Congruence: Basic Properties of congruence.
- 3.3 Fermat's Theorem

Unit 4: Complex Numbers (10 Lectures)

- 4.1 Sums and Products, Basic Algebraic Properties, Moduli, Complex Conjugates, Exponential form, Products and Quotients, De-Moivre's theorem.
- 4.2 Roots of Complex Numbers: The n^{th} roots of unity.
- 4.3 Regions in Complex Plane.

Text Books:

1. **A Foundation Course in Mathematics, Ajit Kumar, S. Kumeresan and Bhaba Kumar Sarma, Narosa Publication House.**
Unit 1: Chapter 2: Sec. 2.1 to 2.5, Chapter 3: Sec. 3.1 to 3.6, Chapter 4: Sec. 4.1 to 4.4.
2. **Elementary Number Theory, David M. Burton, Tata McGraw Hill, Sixth Edition.**
Unit 2: Textbook 2: Chapter 1: Sec. 1.1, Chapter 2: Sec. 2.2 to 2.4
Unit 3: Textbook 2: Chapter 3: Sec. 3.1, Chapter 4: Sec. 4.1, 4.2, Chapter 5: Sec. 5.2.
3. **Complex Variables and Applications, James Ward Brown and Ruel V. Churchill, Mc-Graw Hill, Seventh Edition.**

Unit 4: Textbook 3: Chapter 1: Sec 1 to 10.

Reference Books:

1. Textbook of Algebra, S. K. Shah and S. C. Garg, Vikas Publishing House Pvt. Ltd. Edition 2017.
2. Introduction to Real Analysis by R.G. Bartle and D.R. Sherbert, John Wiley and Sons Inc, Fourth Edition.

MT 112: CALCULUS - I**Unit 1: Real Numbers (06 Lectures)**

- 1.1 The Algebraic and Order Properties of \mathbb{R} :
Algebraic properties of \mathbb{R} , Order properties of \mathbb{R} , Well-Ordering Property of \mathbb{N} . Arithmetic mean-Geometric mean inequality, Bernoulli's inequality.
(Revision: essential properties should be revised with illustrative examples)
- 1.2 Absolute Value and the Real Line:
Absolute value function and its properties, triangle inequality and its consequences, neighborhood of a point on real line.
- 1.3 The Completeness Property of \mathbb{R} :
Definitions of Upper bound, Lower bound, supremum, infimum of subsets of \mathbb{R} , completeness property of \mathbb{R} .
- 1.4 Applications of the Supremum Property:
Archimedean property and its consequences, The density theorem (without proof).

Unit 2. Sequences (10 Lectures)

- 2.1 Sequences and Their Limits:
Definition and examples of sequences of real numbers, Definition of limit of sequence and uniqueness of limit, Examples on limit of sequence.
- 2.2 Limits Theorems:
Definition of bounded sequence, Every convergent sequence is bounded, Algebra of limits.
- 2.3 Monotone Sequences:
Definition and examples of monotone sequences, Monotone convergence theorem and examples.
- 2.4 Subsequences and Bolzano -Weierstrass Theorem:
Definition of subsequence and examples, Divergence criteria, Monotone Subsequence theorem (without proof), Bolzano -Weierstrass theorem (first proof).

Unit 3. Limits (08 lectures)

- 3.1 Functions and their Graphs:

Functions, domain and range, graphs of functions, representing a function numerically, Vertical line test, Piecewise defined functions, increasing and decreasing functions, even and odd functions symmetry, common functions

3.2 Limits of Functions:

Definition of cluster point and examples, definition of limit of a function, sequential criterion for limits, divergence criteria.

3.3 Limit Theorems:

Algebra of limits (proofs using sequential criterion) ,Squeeze theorem.

3.4 Some extension of limit concepts:

one-sided limits, infinite limits (without proof) .

Unit 4: Continuity

(12 lectures)

4.1 Continuous Functions:

Definition of continuous function at a point , sequential criterion for continuity, Divergence criterion, combination of continuous functions.

4.2 Continuous Functions on Intervals:

Properties of continuous functions on an interval, Boundedness theorem (without proof), The minimum -maximum theorem(without proof), Location of root theorem (Without proof), Bolzano's intermediate value theorem. Continuous function maps closed bounded interval to closed bounded interval, Preservation of interval theorem.

Textbook Books:

1. Introduction to Real Analysis by R.G. Bartle and D.R. Sherbert, John Wiley and Sons Inc, Fourth Edition.

Unit 1: Chapter 2: Sec 2.1 (2.1.1 to 2.1.13), Sec. 2.2(2.2.1 to 2.2.9), 2.3, 2.4(2.4.1, 2.4.3 to 2.4.6, 2.4.8, 2.4.9).

Unit 2: Chapter 3: Sec. 3.1(3.1.1 to 3.1.7, 3.1.10, 3.1.11), Sec. 3.2(3.2.1 to 3.2.11), Sec. 3.3(3.3.1, 3.3.4), Sec. 3.4 (3.4.1 to 3.4.3, 3.4.5 to 3.4.8).

Unit 3: Chapter 4: Sec. 4.1(4.1.1, 4.1.3 to 4.1.9), Sec. 4.2(4.2.1 to 4.2.8), Sec. 4.3 (4.3.1 to 4.3.9).

Unit 4: Chapter 5: Sec. 5.1, Sec. 5.2, Sec 5.3 (5.3.1 to 5.3.5, 5.3.7 to 5.3.10).

2. Thomas Calculus, Thirteenth edition, Pearson Publication.

Unit 3: Text book-2: Chapter 1: Sec. 1.1.

Reference books:

- 1 Introduction to Real analysis, William F.Trench, Free edition, 2010.
- 2 Calculus of a single variable Ron Larson , Bruce Edwards, tenth edition.
- 3 Elementary Analysis, The Theory of Calculus, Kenneth A. Ross, Springer Publication, second edition.
- 4 Calculus and its Applications, Marvin L. Bittinger, David J. Ellenbogen and Scott A. Surgent, Addison Wesley, tenth edition.

MT 113: Mathematics Practical

(Practicals based on the applications of articles in MT 111 and MT 112)

In Semester-I, we should conduct 3 written practical and 3 practical on maxima software for each paper MT-111 and MT-112.

List of Practical

Practical 1 : Problems on Unit 1 and Unit 2(Written) from MT-111.

Practical 2 : Problems on Unit 3 (Written) from MT-111.

Practical 3 : Problems on Unit 4(Written) from MT-111.

Practical 4 :Introduction to maxima software forMT-111.

Practical 5 : Problems on unit 1 and unit 2 from MT-111using maxima software.

Practical 6 : Problems on Unit 3 and Unit 4 from MT-111using maxima software.

Practical 7: Problems on Unit 1 and Unit 2(Written) from MT-112.

Practical 8 : Problems on Unit 3 (Written) from MT-112.

Practical 9 : Problems on Unit 4(Written) from MT-112.

Practical 10 :Introduction to maxima software for MT-112.

Practical 11 : Problems on unit 1 and unit 2 from MT-112using maxima software.

Practical 12 : Problems on Unit 3 and Unit 4 from MT-112 using maxima software.

Note:

1 The soft copy of practicals on maxima software will be prepared and provided by the Board of Studies in mathematics.

2. Practical on maxima software can be performed on computer and android mobiles.

3. Android mobiles are allowed for practical examination on maxima software .

4. Practical examination of 25 marks on written problems, 10 marks for problems on maxima software (5 marks for writing syntax and 5 marks to perform the same on android mobile or computer).

Semester - II

MT 121-Analytical Geometry

Unit 1: Analytical Geometry of Two Dimension (10 Lectures)

- 1.1. Change of axes: translation and rotation.
- 1.2. Conic Sections: General equation of second degree in two variables
- 1.3. Reduction to standard form, center of conic, nature of conic.

Unit 2: Planes (10 Lectures)

- 2.1. Direction cosines and direction ratios, Equation of plane, Normal form, Transform to the normal form, Plane passing through three non-collinear points, Intercept form, Angle between two planes.
- 2.2. Distance of a point from a plane, Distance between parallel planes, Systems of planes, two sides of planes, Bisector planes.

Unit 3: Lines in three dimension (8 lectures)

- 3.1. Equations of a line in Symmetric and unsymmetrical forms, Line passing through two points, Angle between a line and a plane.
- 3.2. Perpendicular distance of a point from a plane, Condition for two lines to be coplanar (without proof).

Unit 4: Sphere (8 Lectures)

- 4.1. Equation of a sphere in different forms, plane section of a sphere.
- 4.2. Equation of a circle, sphere through a given circle
- 4.3. Intersection of a sphere and a line, Equation of tangent plane to sphere.

Text Books:**1. Analytic Geometry in Two and Three Dimensions : Von Steuben**

Unit1: Sec, 8.4

2. Analytical Solid Geometry: Shantinayakan; S. Chand and Company Ltd, New Delhi, 1998.

Unit2: Sec. 1.6,1.7, Sec. 2.1 to 2.7

Unit3: Sec. 3.1 to 3.4, 3.7

Unit4: Sec. 6.1 to 6.6.

Reference Book:

1. P.K.Jain and Khalil Ahmad, A Text Book of Analytical Geometry of Three Dimensions, Wiley Eastern Ltd. 1999.

MT 122: Calculus-II**Unit 1: Differentiation (10 lectures)**

- 1.1. The Derivatives:
Definition of the derivative of a function at a point, every differentiable function is continuous, Rules of differentiation, Caratheodary's theorem (without proof), The chain rule, Derivative of inverse function (without proof, only examples).
- 1.2 The Mean Value Theorems:
Interior extremum theorem, Mean Value theorems and their Consequences, Intervals of increasing and decreasing of a function, first derivative test for extrema.

Unit 2: L' Hospital Rule and Successive Differentiation (10 lectures)

- 2.1 L'Hospital Rule:
Indeterminate forms, L'Hospital Rules (without proof)
- 2.2 Taylor's theorem: Taylor's theorem and Maclaurin's theorem with Lagrange's form of remainder (Without proof).
- 2.3 Successive Differentiation: The nth derivative and Leibnitz theorem for successive differentiation.

Unit 3: Ordinary Differential Equations (08 lectures)

- 3.1 Linear first order equations.
- 3.2 Separable equations.
- 3.3 Existence and Uniqueness of solutions of nonlinear equations.

Unit 4: Exact Differential Equations (08 lectures)

- 4.1 Transformation of nonlinear equations to separable equations.
- 4.2 Exact differential equations.
- 4.3 Integrating factors.

Textbooks:

1. **Introduction to Real Analysis by R.G. Bartle and D.R. Sherbert, John Wiley and Sons, Inc., Fourth Edition.**

Unit 1: Chapter 6: Sec. 6.1(6.1.1 to 6.1.8), Sec 6.2(6.2.1 to 6.2.8).

Unit 2: Chapter 6: Sec 6.3(6.3.1 to 6.3.7), Sec 6.4(6.4.1 to 6.4.3).

2. **Differential Calculus by Shanti Narayan, Tenth Revised Edition.**

Units 2: Chapter 5: Sec. 5.1 to 5.6.

3. **Elementary Differential equations, William F. Trench, E-book (Free download)**

Unit 3: Chapter 2: Sec 2.1 to 2.3.

Unit 4: Chapter 2: Sec 2.4 to 2.6.

Reference books:

1. Introduction to Real analysis, William F.Trench, Free edition, 2010.
2. Calculus of a single variable Ron Larson , Bruce Edwards, tenth edition.
3. Elementary Analysis, The Theory of Calculus, Kenneth A. Ross, Springer Publication, second edition.
4. Calculus and its Applications, Marvin L. Bittinger, David J. Ellenbogen and Scott A. Surgent, Addison Wesley, tenth edition.
5. Ordinary and partial Differential equations,M.D. Raisingania, S. Chand andCompany,2009.

MT 123: Mathematics Practical

(Practical based on the applications of articles in MT 121 and MT 122)

In Semester-II, we should conduct 4 written practical and 2 practical on maxima software for each paper MT-121 and MT-122.

List of Practical

- Practical 1 : Problems on Unit 1 (Written) from MT-121.
Practical 2 : Problems on Unit 2 (Written) from MT-121.
Practical 3 : Problems on Unit 3(Written) from MT-121.
Practical 4 :Problems on Unit 4(Written) from MT-121.
Practical 5 : Problems on unit 1 and unit 2 from MT-121using maxima software.
Practical 6 : Problems on Unit 3 and Unit 4 from MT-121using maxima software.
Practical 7: Problems on Unit 1 (Written) from MT-122.
Practical 8 : Problems on Unit 2 (Written) from MT-122.
Practical 9 : Problems on Unit 3(Written) from MT-122.
Practical 10 :Problems on Unit 4(Written) from MT-122.
Practical 11 : Problems on unit 1 and Unit 2 from MT-122using maxima software.
Practical 12: Problems on Unit 3 and Unit 4from MT-122 using maxima software.

Note:

- 1 The soft copy of practical on maxima software will be prepared and provided by the Board of Studies in mathematics.
2. Practicals on maxima software can be performed on computer and android mobiles.
3. Android mobiles are allowed for practical examination on maxima software .
- 4.Practical examination 25 marks on written problems, 10 marks for problems on maxima software (5 marks for writing syntax and 5 marks to perform the same on android mobile or computer).

Modalities For Conducting The Practical and The Practical Examination:

- 1) There will be one 3 hour practical session for each batch of 15 students per week.
- 2) The College will conduct the Practical Examination at least 15 days before the commencement of the Main Theory Examination. The practical examination will consist of written examination of 20 marks, 10 marks on maxima software and oral examination of 05 marks.
- 3) There will be no external examiner, the practical exam will be of the duration of 3 hours.
- 4) The subject teacher will set a question paper based on pattern as follows:
 - Q1.** Any 2 out of 4 each question of 5 marks on paper - I.
 - Q2.** Any 2 out of 4 each question of 5 marks on paper - II.
 - Q3.** (a) Any 1 out of 2 each question of 5 marks on maxima software from paper – I.
(b) Any 1 out of 2 each question of 5 marks on maxima software from paper – II.
- 5) Each student will maintain a journal to be provided by the college.
- 7) The internal 15 marks will be given on the basis of journal prepared by student and the cumulative performance of student at practical.
- 8) It is recommended that concept may be illustrated using computer software maxima and graphing calculators wherever possible.
- 9) Study tours may be arranged at places having important mathematical institutes or historical places.
- 10) **Special Instruction:**
 - a) There should be well equipped mathematics practical laboratory of size 20 X 20 sq. fts containing at least 10 computers.
 - b) Examiners should set separate question papers, solutions and scheme of marking for each batch and claim the remuneration as per rule.
 - c) Before starting each practical necessary introduction, basic definitions, intuitive inspiring ideas and prerequisites must be discussed.



Savitribai Phule Pune University

(Formerly University of Pune)

Three Year B.Sc. Degree Program in Physics

(Faculty of Science & Technology)

F.Y.B.Sc. (Physics)

Choice Based Credit System Syllabus

To be implemented from Academic Year 2019-2020

Title of the Course: B.Sc. (Physics)

Preamble:

The curriculum for the B. Sc. (Physics) programme is designed to cater to the requirement of Choice Based Credit System following the University Grants Commission (UGC) guidelines. In the proposed structure, due consideration is given to Core and Elective Courses (Discipline specific - Physics), along with Ability Enhancement (Compulsory and Skill based) Courses. Furthermore, continuous assessment is an integral part of the CBCS, which will facilitate systematic and thorough learning towards better understanding of the subject. The systematic and planned curricula from first year to the third year (comprised of six semesters) shall motivate the student for pursuing higher studies in Physics and inculcate enough skills for becoming an entrepreneur.

Objectives:

- To foster scientific attitude, provide in-depth knowledge of scientific and technological concepts of Physics.
- To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits, etc.
- To familiarize with recent scientific and technological developments.
- To create foundation for research and development in Physics.
- To help students to learn various experimental and computational tools thereby developing analytical abilities to address real world problems.
- To train students in skills related to research, education, industry, and market.
- To help students to build-up a progressive and successful career in Physics.

Structure of the Course:

Subject Name	Year	Semester	Course Type	Course Code	Course Name	Credit	
Physics	1	I	Compulsory Course	PHY-111	Mechanics and Properties of Matter	2	
				PHY-112	Physics Principles and Applications	2	
				PHY-113	Physics Laboratory-IA	1.5	
		II	Compulsory Course	PHY-121	Heat and Thermodynamics	2	
				PHY-122	Electricity and Magnetism	2	
				PHY-123	Physics Laboratory-IB	1.5	
	2	III	Compulsory Course	PHY-231	Mathematical Methods in Physics I	2	
				PHY-232	Electronics I /Instrumentation	2	
				PHY-233	Physics Laboratory-2A	2	
			Ability Enhancement Compulsory Course	PHY-2310	Environment -I	2	
				PHY-2311	Language-I	2	
				IV	Compulsory Course	PHY-241	Oscillations, Waves and Sound
		PHY-242	Optics			2	
		PHY-243	Physics Laboratory-2B			2	
		Ability Enhancement Compulsory Course	PHY-2410		Environment –II	2	
			PHY-2411		Language-II	2	
			3		V	Discipline Specific Elective Course	PHY- 351
		PHY- 352		Electrodynamics			2
	PHY- 353	Classical Mechanics		2			
	PHY- 354	Atomic and Molecular Physics		2			
	PHY- 355	Computational Physics		2			
	PHY- 356	Elective I (Select any One)		2			
	PHY- 357	Physics Laboratory-3A		2			
	PHY- 358	Physics Laboratory-3B		2			
	PHY- 359	Physics Laboratory-3C		2			
	Skill Enhancement Course	PHY-3510		Maintenance and Repairing of Laboratory equipment – I		2	
		PHY- 3511	Household Electrification, Maintenance and repairing - I	2			

		VI	Discipline Specific Elective Course	PHY- 361	Solid State Physics	2
				PHY- 362	Quantum Mechanics	2
				PHY- 363	Thermodynamics and Statistical Physics	2
				PHY- 364	Nuclear Physics	2
				PHY- 365	Electronics II /Advanced Electronics	2
				PHY- 366	Elective II (Select any One)	2
				PHY- 367	Physics Laboratory-4A	2
				PHY- 368	Physics Laboratory-4B	2
				PHY- 369	Project	2
		Skill Enhancement Course	PHY-3610	Maintenance and Repairing of Laboratory Equipment – II	2	
			PHY- 3611	Household Electrification, Maintenance and Repairing- II	2	

SEMISTER-I**Course code and title: PHY-111 Mechanics and Properties of Matter****Lectures: 36** **(Credits-02)****1. Motion:** **(9 Lectures)**

Introduction to motion, Types of motion, Displacement, Velocity, Acceleration, Inertia, Newton's laws of motion with their explanations, Various types of forces in nature, Frames of reference (Inertial and Non inertial), Laws of motion and its real life applications, Problems.

2. Work and Energy: **(7 Lectures)**

Kinetic energy, Work Energy Theorem, Work done with constant force, Work done with varying force (spring force), Conservative and Non conservative forces, Potential energy, Law of energy conservation, Gravitational potential energy, Problems.

3. Fluid Mechanics: **(8 Lectures)**

Concept of viscous force and viscosity, Coefficient of viscosity, Steady and Turbulent flow, Reynolds number, Equation of continuity, Bernoulli's Principle, Applications of Bernoulli's Principle (Ventury Meter, PitotTube), Applications of viscous fluids, Problems.

4. Properties of Matter: **(12 Lectures)**

Surface tension, Angle of contact, Factors affecting surface tension, Jaeger's method for determination of surface tension, Applications of surface tension.

Stress and Strain, Hook's law and Coefficient of elasticity, Young's modulus, Bulk modulus, Modulus of rigidity, Work done during longitudinal strain, Volume strain, Shearing strain, Poisson's ratio, Relation between three elastic moduli, (Y , η , K), Applications of elasticity, Problems.

Reference Books

1. Physics: Resnick, Halliday & Walker 9/e, Wiley.
2. University Physics : Sears and Zeemansky, XIth/XIIth Edition, Pearson Education.
3. Mechanics: D. S. Mathur, S. Chand and Company, New Delhi.
4. Elements of Properties of Matter : D. S. Mathur, S. Chand, New Delhi.
5. Concepts of Physics: H. C. Verma, BharatiBhavan Publisher.
6. Problems in Physics: P. K. Srivastava, Wiley Eastern Ltd.
7. Applied Fluid Mechanics: Mott Robert, Pearson Benjamin Cummir VI Edition. Pearson Education/Prentice Hall International, New Delhi.
8. Fundamentals of Mechanics: J C Upadhyaya, Himalaya Publishing House.
9. Mechanics: D. S. Mathur, Revised by P. S. Hemne, S. Chand and Company, New Delhi.
- 10.

Course code and title: PHY-112 Physics Principles and Applications**Lectures: 36****(Credits-02)****Learning Outcomes:**

On successful completion of this course students will be able to do the following:

1. To understand the general structure of atom, spectrum of hydrogen atom.
2. To understand the atomic excitation and LASER principles.
3. To understand the bonding mechanism and its different types.
4. To demonstrate an understanding of electromagnetic waves and its spectrum.
5. Understand the types and sources of electromagnetic waves and applications.
6. To demonstrate quantitative problem solving skills in all the topics covered.

1. Physics of Atoms**(08-Lectures)**

- 1.1 Introduction to Atom
 - 1.2 Atomic Models:
 - 1.2.1 Thomson's Atomic Model
 - 1.2.2 Rutherford's Atomic Model
 - 1.2.3 Bohr's Atomic Model
 - 1.3 Atomic Spectra:
 - 1.3.1 Emission line Spectrum
 - 1.3.2 Absorption line spectrum
 - 1.3.3 Uses of Atomic Spectra
 - 1.4 Classical planetary model of Hydrogen Atom
 - 1.5 The Bohr Theory of the Hydrogen Atom
 - 1.6 The Hydrogen Spectrum
 - 1.7 Frank-Hertz experiment
- Problems

2. LASERS and Its Applications**(07-Lectures)**

- 2.1 Introduction to LASERS
 - 2.2 Basic Principle of Lasers: Three Processes
 - 2.3 Characteristics of Lasers: brief explanation
 - 2.4 Boltzmann Distribution Law
 - 2.5 Population Inversion and Pumping
 - 2.6 Types of Lasers:
 - 2.5.1 He-Ne Laser
 - 2.5.2 Ruby Laser
 - 2.7 Applications of Lasers
- Problems

3. Physics of Molecules**(08-Lectures)**

- 3.1 Introduction to Bonding Mechanisms
 - 3.2 Forces between Atoms
 - 3.3 Types of Bonding:
 - 3.3.1 Ionic Bonds
 - 3.3.2 Covalent Bonds
 - 3.3.3 van der Waal's Bonds
 - 3.3.4 Hydrogen Bond
 - 3.3.5 Metallic Bond
 - 3.4 Rotation energy levels of a diatomic molecule
 - 3.5 Vibration energy levels of a diatomic molecule
- Problems

4. Sources of Electromagnetic Waves (06-Lectures)

- 4.1 Introduction to Electromagnetic Waves: Historical Perspective
- 4.2 General properties of Electromagnetic radiations
- 4.3 Electromagnetic spectrums and its sources
- 4.4 Production of electromagnetic waves: Hertz experiment
- 4.5 Plank's hypothesis of Photons
- 4.6 Applications of various waves in electromagnetic spectrum

5. Applications of Electromagnetic Waves (07-Lectures)

- 5.1 Microwave oven
 - 5.2 RADAR
 - 5.3 Pyroelectric thermometer
 - 5.4 X-ray radiography
 - 5.5 CT Scan
 - 5.6 Solar cell and its types
- Problems

Books/References

1. Concepts of Modern Physics: A Beiser (6th ed., McGraw Hill, 2003)
2. Modern Physics: Raymond A. Serway, Clement J. Moses, Curt A. Moyer
3. Sears and Zemansky's University Physics: H.D. Young R. A. Freedman, Sandin (11th Ed. Pearson Education)
4. LASERS: M. N. Avdhanulu, S. Chand Publications.

Course code and title: PHY-113 Physics Laboratory 1A**Practical: 10 (Credits-1.5)****Section I- Mechanics and Properties of Matter**

Sr. No	Title of the experiment
1	Study and use of various measuring Instruments. 1. Vernier caliper 2. Micrometer Screw Gauge 3. Travelling Microscope
2	Study of Modulus of Rigidity of wire using Torsional Oscillations
3	Determination of coefficient of Viscosity by Poiseuille's method
4	Determination of “Y” and “ η ” by flat spiral spring
5	Determination of “Y” by bending method.
6	Study of surface tension by Jaeger’s method
7	Study of Poisson’s ratio of rubber using rubber tube /rubber chord
8	Study of surface tension of liquid using Fergusson Method

Section II-Physics Principles and Applications

Sr. No	Title of the experiment
1	Study of Spectrometer and determination of angle of prism
2	Study of Spectrometer calibration and determination of refractive indices of different colors
3	Study of divergence of LASER beam
4	Study of total internal reflection using LASER
5	Determination of Plank’s constant
6	Determination of wavelength of LASER light by plane diffraction grating
7	Study of I-V characteristics of solar cell

Note: Any four experiments from each section be conducted during the semester, with a total of 10 experiments.

SEMISTER-II**Course code and title: PHY-121 Heat and Thermodynamics****Lectures: 36****(Credits-02)****1. Fundamentals of Thermodynamics****(10 Lectures)**

Concept of thermodynamic state, Equation of state, Van der Waal's equation of state, Thermal equilibrium, Zeroth law of thermodynamics, Thermodynamic processes: Adiabatic, Isothermal, Isobaric and Isochoric changes, Indicator diagram, Work done during isothermal change, Adiabatic relations, Work done during adiabatic change, Internal energy, Internal energy as state function, First law of thermodynamics, Reversible and Irreversible changes, Problems.

2. Applied Thermodynamics:**(9 Lectures)**

Conversion of heat into work and its converse, Second law of thermodynamics, Concept of entropy, Temperature - entropy diagram, T-dS equations, Clausius - Clapeyron latent heat equations, Problems.

3. Heat Transfer Mechanisms**(9 Lectures)**

Carnot's cycle and Carnot's heat engine and its efficiency, Heat Engines: Otto cycle & its efficiency, Diesel cycle & its efficiency, Refrigerators: General principle and coefficient of performance of refrigerator, Simple structure of Vapour compression refrigerator, Air Conditioning: Principle and its applications, Problems.

4. Thermometry:**(8 Lectures)**

Concept of heat & temperature, Principle of thermometry, Temperature scales & inter-conversions, Principle, Construction and Working: (Liquid thermometers, Liquid filled thermometers, Gas filled thermometers, Bimetallic thermometers, Platinum resistance thermometer, Thermocouple), Problems.

Reference Books:

1. Concept of Physics: H. C. Verma, BharatiBhavan Publisher.
2. Heat and Thermodynamics: Brijlal, N. Subrahmanyam, S. Chand and Company Ltd.
3. Heat and Thermodynamics: Mark W. Zemansky, Richard H. Dittman, 7th Edition, Mc-Graw Hill International Edition.
4. Thermodynamics and Statistical Physics: J. K. Sharma, K. K. Sarkar, Himalaya Publishing House.
5. Thermal Physics (Heat and Thermodynamics): A. B. Gupta, H. P. Roy books and Allied (P) Ltd. Calcutta.
6. Instrumentation: Devices & Systems, Rangan, Mani, and Sarma.

Course code and title: PHY-122 Electricity and Magnetism**Lectures: 36****(Credits-02)****Learning Outcomes:**

On successful completion of this course students will be able to do the following:

- 1) To understand the concept of the electric force, electric field and electric potential for stationary charges.
- 2) Able to calculate electrostatic field and potential of charge distributions using Coulomb's law and Gauss's law.
- 3) To understand the dielectric phenomenon and effect of electric field on dielectric.
- 4) To Study magnetic field for steady currents using Biot-Savart and Ampere's Circuital laws.
- 5) To study magnetic materials and its properties.
- 6) Demonstrate quantitative problem solving skills in all the topics covered.

1. Electrostatics**(08-Lectures)**

- 1.1 Revision of Coulomb's law:
 - 1.1.1 Statement
 - 1.1.2 Variation of forces with distances
 - 1.2 Superposition principle:
 - 1.2.1 Statement
 - 1.2.2 Explanation with illustration
 - 1.3 Energy of system of charges
 - 1.4 Concept of electric field
 - 1.4.1 Due to point charge
 - 1.4.2 Due to group charges
 - 1.5 Concept of electric flux
 - 1.6 Gauss's law in electrostatics
- Problems

2. Dielectrics**(08-Lectures)**

- 2.1 Introduction to dielectric materials
 - 2.2 Electric Dipole
 - 2.2.1 Electric dipole
 - 2.2.2 Dipole moment
 - 2.3 Electric potential and intensity at any point due to dipole
 - 2.4 Torque on a dipole placed in an electric field
 - 2.5 Polar and non-polar molecules
 - 2.6 Electric polarization of dielectric material
 - 2.7 Gauss' law in dielectric
 - 2.8 Electric vectors and its relation
- Problems

3. Magnetization**(07-Lectures)**

- 3.1 Introduction to Magnetization
- 3.2 Magnetic materials
- 3.3 Types of Magnetic Materials
 - 3.3.1 Diamagnetic materials
 - 3.3.2 Paramagnetic materials
 - 3.3.3 Ferromagnetic materials
 - 3.3.4 Antiferromagnetic materials

3.4 Bohr magnetron
Problems

4. Magnetostatics

(07-Lectures)

- 4.1 Introduction to magnetization,
- 4.2 Magnetic Induction and Intensity of magnetization
- 4.3 Biot-Savart's law:
 - 4.3.1 Statement
 - 4.3.2 Long straight conductor
 - 4.3.3 Circular Coil
- 4.4 Ampere's circuital law:
 - 4.4.1 Statement
 - 4.4.2 Field of Solenoid
 - 4.4.3 Field of Toroid
- 4.5 Gauss law for magnetism
Problems

5. Magnetic Properties of Materials

(06-Lectures)

- 5.1 Definition
 - 5.1.1 Magnetization (M),
 - 5.1.2 Magnetic Intensity (H),
 - 5.1.3 Magnetic Induction (B),
 - 5.1.4 Magnetic Susceptibility
 - 5.1.5 Magnetic Permeability
- 5.2 Relation between B, M and H
- 5.3 Hysteresis and Hysteresis Curve
- 5.4 Ferrite materials and its Applications
Problems

References:

1. Fundamentals of Physics: HallidayResnik and Walkar, 8th Edition.
2. Electromagnetics: B. B. Laud.
3. Foundations of Electromagnetic theory: Reitz,Milford, Christey.
4. Electricity and Electronics: D.C.Tayal, Himalaya Publishing House, Mumbai.
5. Introduction to Electrodynamics: D.G. Griffith.
6. Electricity and Magnetism: BrijLal, Subramanyan, RatanPrakashan (Revised edition, 1997).
7. Electricity and Magnetism: Khare, Shrivastav (Revised edition, 1997).

Course code and title: PHY-123 Physics Laboratory 1B**Practical: 08****(Credits-1.5)****Section I- Heat and Thermodynamics**

Sr No	Title of the experiment
1	Interpretation of Isothermal and Adiabatic curve on P-V diagram and theoretical study of Carnot's cycle by drawing graphs of Isothermal and Adiabatic curves
2	Study of temperature coefficient of Thermistor.
3	Study of Thermocouple and determination of inversion temperature
4	Study of thermal conductivity by Lee's method
5	Study of specific heat of Graphite
6	Study of Solar constant
7	Determination of calorific values of different fuels

Section II- Electricity and Magnetism

Sr No	Title of the experiment
1	Study of charging and discharging of capacitor
2	Study of LR circuit
3	Study of LCR circuit
4	Study of Kirchhoff's Laws
5	Study of Diode characteristics
6	Study of Voltmeter, Ammeter and Multimeter (AC, DC, ranges and least count)
7	Determination of frequency of AC mains
8	Comparison of capacitor using DeSauty's method

Note: Any four experiments from each section be conducted during the semester.



Savitribai Phule Pune University

(Formerly University of Pune)

Three Year B.Sc. Degree Program in Statistics

(Faculty of Science & Technology)

F.Y.B.Sc. Statistics

Choice Based Credit System Syllabus

To be implemented from Academic Year 2019-2020

Title of the program: F.Y.B.Sc. Statistics/ Statistical Techniques**Preamble of the syllabus:**

The word **Statistics** is used in different ways in different contexts. To a cricket fan, Statistics is the information about runs scored or wickets taken by a player. To the manager of a manufacturing unit, Statistics may be the information about the process control. To a medical researcher investigating the effects of a new drug, Statistics are evidence of research efforts. To a college student, Statistics are the grades or marks scored in a course. Thus, in all these illustrations Statistics word refers to quantitative data in the area under study. Statistics as a subject is an important branch of knowledge and is devoted to various techniques of collection, presentation, analysis and interpretation of data. It is a science of learning from data.

Statistics provides tools for making decisions when conditions of uncertainty prevail. Hence these tools and techniques are used in almost all fields. Statistics is indispensable for people working in fields like agriculture, business, management, economics, finance, insurance, education, biotechnology and medical science etc. Since last two decades, with the help of computers large amount of data can be handled and more sophisticated statistical techniques can be used in an effective manner. Knowledge of different aspects of Statistics has become crucial. There is a continuous demand for statisticians in every field – education, industry, software, insurance, clinical trials data and research. The syllabus of the three Year B. Sc. degree course in Statistics is framed in such a way that the students at the end of the course can apply judiciously the statistical tools to a variety of data sets to arrive at some conclusions.

Statistics can be divided into two broad categories, (1) exploratory statistics or descriptive statistics, which is concerned with summarizing data and describing these data, and (2) confirmatory statistics or inferential statistics, which is concerned with making decisions about the population based on the sample.

Up to higher secondary school, students are mostly exposed to descriptive statistics. These techniques are briefly reviewed but the emphasis in degree course is on inferential statistics. At the end of the degree course a student is expected to apply the statistical tools to real life data and analyze it.

Introduction: Choice based credit (semester) system:

B. Sc. in Statistics program is of three years duration, with semester pattern for all the three years. A student of three-year B.Sc. degree program will not be allowed to offer Statistics and Statistical Techniques simultaneously in any of the three years of the course. Students offering **Statistics** at the First year of the three-year B.Sc. course may be allowed to offer **Statistical Techniques** as one of their subjects in the second year of the three-year B.Sc. in place of Statistics. Students offering Statistical Techniques at the first year of the three-year B.Sc. course may be allowed to offer Statistics as one of their subjects in the second year of the three-year B.Sc. course in place of Statistical Techniques provided they satisfy other requirements regarding subject combinations, if any.

At **first year of under-graduation**, students will be given the basic information that includes – methods of data representation and summarization. Correlation and regression are the forecasting tools that are frequently used in statistical analysis. These topics are studied in one of the papers in each semester. Further they are introduced to probability and different discrete probability distributions along with applications in the other paper. Relevant experiments on these topics will be included in practical course. Further the students are expected start using some statistical software and verify the computations during practicals. It is a skill oriented part of the course.

At **second year of under-graduation**, students are expected to study various probability distributions and its applications to real life situations. It is a foundation for further theory. An important branch of Statistics, viz. testing of hypotheses related to mean, variance, proportion, correlation etc. will be introduced. Some topics related to applications of Statistics will be also introduced. Further the students are expected start using some statistical software and verify the computations during practicals. It is a skill oriented part of the course.

At **third year of under-graduation**, six theory papers deal with theoretical as well as applied aspect of statistics. Some papers such as distribution theory and parametric inference are core and mathematical in nature. Some papers such as sampling methods and Design of Experiments are core and applied but less mathematical. In Design of Experiments paper, various designs used in agriculture and industry are studied agriculture, clinical trials. Papers of applied nature, like medical statistics, actuarial statistics, time series, and optimization techniques (operations research), statistical quality control. There are some skill oriented courses C programming and R software. There are three practical courses based on core courses. In one of the practical courses, project component will be introduced to get hands on training or experiential learning.

Structure of the Course

Structure of the course for three years and the pattern of examination and question papers are as specified below

Structure of F. Y. B. Sc. Statistics/ Statistical Techniques

Semester	Paper code	Paper	Paper title	credits	Marks		
					CIA	ESE	Total
1	ST 111	I	Descriptive Statistics I	2	15	35	50
	ST 112	II	Discrete Probability	2	15	35	50
	ST113	III	Statistics Practical PaperI	1.5	15	35	50
2	ST121	I	Descriptive Statistics II	2	15	35	50
	ST122	II	Discrete Probability Distributions	2	15	35	50
	ST123	III	Statistics Practical Paper II	1.5	15	35	50

Structure of S. Y. B. Sc. Statistics

Semester	Paper code	Paper	Paper title	credits	Marks		
					CIA	ESE	Total
3	ST 231	I	Statistics theory paper 1	2	15	35	50
	ST 232	II	Statistics theory paper 2	2	15	35	50
	ST233	III	Statistics Practical Paper	2	15	35	50
4	ST241	I	Statistics theory paper 1	2	15	35	50
	ST242	II	Statistics theory paper 2	2	15	35	50
	ST243	III	Statistics Practical Paper	2	15	35	50

Structure of T. Y. B. Sc. Statistics

Semester	Paper code	Paper	Paper title	credits	Marks		
					CIA	ESE	Total
5	ST 351	I	Statistics theory paper 1	2	15	35	50
	ST 352	II	Statistics theory paper 2	2	15	35	50
	ST 353	III	Statistics theory paper 3	2	15	35	50
	ST 354	IV	Statistics theory paper 4	2	15	35	50
	ST 355	V	Statistics theory paper 5	2	15	35	50
	ST 356	VI	Statistics theory paper 6	2	15	35	50
	ST 357	VII	Statistics Practical Paper 1	2	15	35	50
	ST 358	VIII	Statistics Practical Paper 2	2	15	35	50
	ST 358	IX	Statistics Practical Paper 3	2	15	35	50
	ST 359	X	Skill enhancement course 1	2	15	35	50
	ST 3510	XI	Skill enhancement course 2	2	15	35	50

6	ST 361	I	Statistics theory paper 1	2	15	35	50
	ST 362	II	Statistics theory paper 2	2	15	35	50
	ST 363	III	Statistics theory paper 3	2	15	35	50
	ST 364	IV	Statistics theory paper 4	2	15	35	50
	ST 365	V	Statistics theory paper 5	2	15	35	50
	ST 366	VI	Statistics theory paper 6	2	15	35	50
	ST 367	VII	Statistics Practical Paper 1	2	15	35	50
	ST 368	VIII	Statistics Practical Paper 2	2	15	35	50
	ST 369	IX	Statistics Practical Paper 3	2	15	35	50
	ST 3610	X	Skill enhancement course 1	2	15	35	50
	ST 3511	XI	Skill enhancement course 2	2	15	35	50

SEMESTER – I**PAPER – I****ST – 111: Descriptive Statistics I**

Objectives: The main objective of this course is to acquaint students with some basic concepts in Statistics. They will be introduced to some elementary statistical methods of analysis of data. At the end of this course students are expected to be able,

- (i) to compute various measures of central tendency, dispersion, skewness and kurtosis.
- (ii) to analyze data pertaining to attributes and to interpret the results.

Unit 1. Introduction to Statistics(2L)2H

1.1 Meaning of Statistics as a Science.

1.2 Importance of Statistics.

1.3 Scope of Statistics: In the field of Industry, Biological sciences, Medical sciences, Economics, Social Sciences, Management sciences, Agriculture, Insurance, Information technology, Education and Psychology.

1.4 Statistical organizations in India and their functions: CSO, ISI, NSSO, IIPS (Devnar, Mumbai), Bureau of Economics and Statistics.

1.5 Statistical Heritage (Indian Perspective: i) Dr. V. S. Huzurbazar, Dr. P.C. Mahalanobis, Dr. P. V. Sukhatme, Dr. C. R. Rao).

Unit 2. Population and Sample (4L)3H

2.1 Types of characteristics:

Attributes: Nominal scale, ordinal scale,

Variables: Interval scale, ratio scale, discrete and continuous variables, difference between linear scale and circular scale

2.2 Types of data:

(a) Primary data, Secondary data

(b) Cross-sectional data, time series data, directional data.

2.3 Notion of a statistical population:

Finite population, infinite population, homogeneous population and heterogeneous population. Notion of a sample and a random sample. Methods of sampling (Description only): Simple random sampling with and without replacement (SRSWR and SRSWOR) stratified random sampling, systematic sampling, cluster sampling and two-stage sampling.

Unit 3. Summary Statistics: (14 L) 12H

3.1 Review/Revision of Presentation of Data.

Interpretation of Data from table and graph.

data validation

3.2 Frequency Classification: Raw data and its classification, ungrouped frequency distribution, Sturges' rule, grouped frequency distribution, cumulative frequency distribution, inclusive and exclusive methods of classification, Open end classes, and relative frequency distribution.

3.3 Measures of Central Tendency:

Concept of central tendency of statistical data, Statistical averages, characteristics of a

good statistical average.

Arithmetic Mean (A.M.): Definition, effect of change of origin and scale, combined mean of a number of groups, merits and demerits, trimmed arithmetic mean.

Mode and Median: Definition, formulae (for ungrouped and grouped data), merits and demerits. Empirical relation between mean, median and mode.

Partition Values: Quartiles, Deciles and Percentiles (for ungrouped and grouped data), Box Plot.

Geometric Mean (G.M.): Definition, formula, merits and demerits.

Harmonic Mean (H.M.): Definition. Formula, merits and demerits.

Order relation between arithmetic mean, geometric mean, harmonic mean

Weighted Mean: weighted A.M., G.M. and H.M.

Situations where one kind of average is preferable to others.

3.4 Measures of Dispersion:

Concept of dispersion, characteristics of good measure of dispersion.

Range, Semi-interquartile range (Quartile deviation): Definition, merits and demerits,

Mean deviation: Definition, merits and demerits, minimality property (without proof),

Variance and standard deviation: Definition, merits and demerits, effect of change of origin and scale, combined variance for n groups (derivation for two groups).

Mean squared deviation: Definition, minimality property of mean squared deviation (with proof), Measures of dispersion for comparison: coefficient of

range, coefficient of quartile deviation and coefficient of mean deviation, coefficient of variation (C.V.)

2. Moments, Skewness and Kurtosis: (8 L) 7H

4.1 Raw moments (m'_r) for ungrouped and grouped data.

Central moments (m_r) for ungrouped and grouped data, Effect of change of origin

and scale. Relations between central moments and raw moments, upto 4-th order (without proof).

4.2 Concept of skewness of frequency distribution, positive skewness, negative skewness, symmetric frequency distribution.

Bowley's coefficient of skewness: Bowley's coefficient of skewness lies between -1 to 1 (with proof), interpretation using Box plot.

Karl Pearson's coefficient of skewness.

Measures of skewness based on moments ($\widehat{\beta}_1, \widehat{\gamma}_1$).

4.3 Concepts of kurtosis, leptokurtic, mesokurtic and platykurtic frequency distributions.

Measures of kurtosis based on moments ($\widehat{\beta}_2, \widehat{\gamma}_2$).

5 Theory of Attributes: (8 L) 6H

5.1 Attributes: Concept of a Likert scale, classification, notion of manifold classification, dichotomy, class-frequency, order of a class, positive class-frequency, negative class frequency, ultimate class frequency, relationship among different class frequencies (up to three attributes), and dot operator to find the relation between frequencies, fundamental set of class frequencies.

5.2 Consistency of data up to 2 attributes.

5.3 Concepts of independence and association of two attributes.

Yule's coefficient of association (Q), $-1 \leq Q \leq 1$, interpretation.

Recommended Books:

1. Agarwal, B. L. (2003). Programmed Statistics, Second Edition, New Age International Publishers, NewDelhi.
2. Ghosh, J. K. and Mitra, S. K., Parthasarthy, K. R. (1993). Glimpses of India's Statistics Heritage, Wiley publishing Co.
3. Goon, A. M., Gupta, M. K. and Dasgupta, B. (1983). Fundamentals of Statistics, Vol. 1, Sixth Revised Edition, The World Press Pvt. Ltd., Calcutta.
4. Gupta, S. C. and Kapoor, V. K. (1983). Fundamentals of Mathematical Statistics, Eighth Edition, Sultan Chand and Sons Publishers, NewDelhi.
5. Gupta, S. C. and Kapoor, V. K. (1997). Fundamentals of Applied Statistics, Third Edition, Sultan Chand and Sons Publishers, NewDelhi.
6. Neil A. Weiss, (2016). Introductory Statistics, Tenth Edition, Pearson.
7. Purohit, S. G., Gore S. D., Deshmukh S. R. (2008). Statistics Using R, Narosa Publishing House, NewDelhi.
8. Sarma, K. V. S. (2001). Statistics Made it Simple: Do it yourself on PC. Prentice Hall of India, NewDelhi.
9. Snedecor G. W. and Cochran W. G. (1989). Statistical Methods, Eighth Ed. East-West Press.

SEMESTER – I**PAPER – II****ST – 112: Discrete Probability and Probability Distributions I****Objectives**

The main objective of this course is to introduce to the students the basic concepts of probability, axiomatic theory of probability, concept of random variable, probability distribution (univariate and bivariate) discrete random variables, expectation and moments of probability distribution. By the end of the course students are expected to be able

- (i) to distinguish between random and non-random experiments.
- (ii) to find the probabilities of events.
- (iii) to obtain a probability distribution of random variable (one or two dimensional) in the given situation.

1. Basics of Probability:(6L)4H

1.1 Experiments/Models, Ideas of deterministic and non-deterministic models. Random Experiment, concept of statistical regularity.

1.2 Definitions of - (i) Sample space, (ii) Discrete sample space: finite and countably infinite, (iii) Event, (iv) Elementary event, (v) Complement of an event. (vi) Certain event (vii) Impossible event

Concept of occurrence of an event.

Algebra of events and its representation in set theory notation. Occurrence of following events.

- (i) at least one of the given events,
- (ii) none of the given events,
- (iii) all of the given events,
- (iv) mutually exclusive events,
- (v) mutually exhaustive events,
- (vi) exactly one event out of the given events.

1.3 Classical definition of probability and its limitations.

Probability model, probability of an event, equiprobable and non-equiprobable sample space,

1.4 Axiomatic definition of probability. Theorems and results on probability with proofs based on axiomatic definition such as $P(A \cup B) = P(A) + P(B) - P(A \cap B)$. Generalization $P(A \cup B \cup C), 0 \leq P(A) \leq 1, P(A) + P(A^c) = 1, P(\Phi) = 0, P(A) \leq P(B)$ when $A \subset B$

Boole's inequality.

2. Conditional Probability and Bayes' Theorem:(5L)4H

2.1 Definition of conditional probability of an event. Results on conditional probability.

Definition of independence of two events $P(A \cap B) = P(A) \cdot P(B)$

Pairwise independence and mutual independence for three events

Multiplication theorem

$P(A \cap B) = P(A) \cdot P(B|A)$. Generalization to

$P(A \cap B \cap C)$.

2.2 Partition of the sample space, prior and posterior probabilities. Proof of Bayes' theorem.

Applications of Bayes' theorem in real life. True positive, false positive and sensitivity of test as application of Bayes' theorem.

3. Univariate Probability Distributions (Defined on Discrete Sample Space):
(3L) 2H

Concept and definition of a discrete random variable.
Probability mass function (p.m.f.) and cumulative distribution function (c.d.f.),
 $F(\cdot)$ of discrete random variable, properties of c.d.f..
Mode and median of a univariate discrete probability distribution.

4. Mathematical Expectation (Univariate Random Variable):(8L)7H

4.1 Definition of expectation (Mean) of a random variable, expectation of a function of a random variable, m.g.f. and c.g.f. Properties of m.g.f. and c.g.f.

4.2 Definitions of variance, standard deviation (s.d.) and Coefficient of variation (c.v.) of univariate probability distribution, effect of change of origin and scale on mean, variance and s.d.

4.3 Definition of raw, central and factorial raw moments of univariate probability Distributions and their interrelations (without proof).

4.4 Coefficients of skewness and kurtosis based on moments.

5 Some Standard Discrete Probability Distributions: (15L) 13H

5.1 Degenerate distribution (one point distribution):

$P(X=c) = 1$, mean and variance.

5.2 Uniform discrete distribution on integers 1 to n:

p.m.f., c.d.f., mean, variance, real life situations, comments on mode and median.

5.3 Bernoulli Distribution: p.m.f., mean, variance.

5.4 Binomial Distribution : p.m.f.

$$P(x) = \binom{n}{x} p^x q^{n-x}, x = 0, 1, 2, \dots, n; 0 < p < 1, q = 1 - p$$

$$= 0, \text{ otherwise}$$

Notation: $X \sim B(n, p)$.

Recurrence relation for successive probabilities, computation of probabilities of different events, mode of the distribution, mean, variance, m.g.f. and c.g.f. moments, skewness (comments when $p = 0.5$, $p > 0.5$, $p < 0.5$). Situations where this distribution is applicable. Additive property for binomial distribution.

Conditional distribution of X given (X+Y) for binomial distribution.

5.5 Hypergeometric Distribution: Necessity and importance of Hypergeometric distribution, capture-recapture method.

p.m.f. of the distribution,

$$p(x) = \frac{\binom{M}{x} \binom{N-M}{n-x}}{\binom{N}{n}}, \quad x = 0, 1, \dots, \min(M, n)$$

$$= 0, \quad \text{otherwise}$$

Notation : $X \sim H(N, M, n)$.

Computation of probability, situations where this distribution is applicable, binomial approximation to hypergeometric probabilities, statement of mean and variance of the distribution (Derivation is not expected).

Recommended Books:

1. Agarwal B. L. (2003). Programmed Statistics, second edition, New Age International Publishers, NewDelhi.
2. Gupta, S.C. and Kapoor, V. K. (1983). Fundamentals of Mathematical Statistics, Eighth Edition, Sultan Chand and Sons Publishers, NewDelhi.
3. Hoel P. G. (1971). Introduction to Mathematical Statistics, John Wiley and Sons, New York.
4. Hogg,R.V.andCraigR.G.(1989).IntroductiontoMathematicalStatistics,Ed. MacMillan Publishing Co., NewYork.
5. Mayer, P. (1972). Introductory Probability and Statistical Applications, Addison Wesley Publishing Co.,London.
6. Mood, A. M. and Graybill, F. A. and Boes D.C. (1974). Introduction to the Theory of Statistics, Ed. 3, McGraw Hill BookCompany.
7. Rao, VLS Prakash (2008). First Course in Probability and Statistics, New Age International Publishers, NewDelhi.
8. Ross S. (2002). A First Course in Probability, Sixth Edition, Pearson Education, Inc. & Dorling Kindersley Publishing,Inc.

SEMESTER I**Statistics Practical Paper III****ST – 113 : PRACTICALS**

Pre-requisites: Knowledge of the topics in theory papers I and II.

Objectives: At the end of this course students are expected to be able

- (i) to use various graphical and diagrammatic techniques and interpretation.
- (ii) to analyse data pertaining to discrete and continuous variables and to interpret the results,
- (iii) to compute various measures of central tendency, dispersion, skewness and kurtosis.
- (iv) to interpret summary statistics of computer output.
- (v) to summarize and analyze the data using computer.

S. No.	Title of the experiment	No. of Practicals
1	Diagrammatic representation of statistical data: simple and subdivided bar diagrams, multiple bar diagram, percentage bar diagram, pie diagram. Also using Ms-Excel/Any statistical software	2
2	Graphical representation of statistical data: Histogram, frequency curve and ogive curves. Determination of mode and median graphically. Also using Ms-Excel/Any statistical software	2
3	Tabulation	1
4	Data Interpretation form various graphs and diagrammes.	1
5	Use of random number tables to draw SRSWOR, SRSWR, stratified sample and systematic sample. Also using Ms-Excel/ Any statistical software	2
6	Computation of measures of central tendency and dispersion (ungrouped data). Use of an appropriate measure and interpretation of results and computation of partition values.	1
7	Computation of measures of central tendency and dispersion (grouped data). Use of an appropriate measure and interpretation of results and computation of partition values.	1
8	Measures of skewness and kurtosis, Box plot.	1
9	Computation of summary statistics using Ms-Excel/ Any statistical software	1
10	Project	3

SEMESTER – II**PAPER – I**

Objectives: The main objective of this course is to acquaint students with bivariate data. They will be introduced to some methods of analysis of bivariate data. At the end of this course students are expected to be able,

- (i) to compute the correlation coefficient for bivariate data and interpret it.
- (ii) to fit linear, quadratic and exponential curves to the bivariate data to investigate relation between two variables.
- (iii) to compute and interpret various index numbers.

ST - 121: Descriptive Statistics II**1 Correlation: (10L) 9H**

1.1 Bivariate data, Scatter diagram and interpretation.

Concept of correlation between two variables, positive correlation, negative correlation, no correlation.

Covariance between two variables (m_{11}): Definition, computation, effect of change of origin and scale.

1.2 Karl Pearson's coefficient of correlation (r): Definition, computation for ungrouped data and interpretation. Properties: (i) $-1 \leq r \leq 1$ (with proof), (ii) Effect of change of origin and scale (with proof).

1.3 Spearman's rank correlation coefficient: Definition, derivation of formula, computation and interpretation (without ties). In case of ties, compute Karl Pearson's correlation coefficient between ranks. (Spearman's rank correlation coefficient formula with correction for ties not expected.)

2 Fitting of Line (Regression Line): (8L) 6H

2.1 Concept of dependent and independent variables.

2.2 Identification of response and predictor variables and relation between them.

2.3 Meaning of regression, difference between correlation and regression, Connection between correlation and regression. Fitting of line $Y = a + bX$. a and b are estimated using least square method. Regression coefficient. Explained and unexplained variation, coefficient of determination, standard error of an estimate of line of regression. Interchanging the role of X and Y we can study some more properties.

3. Curve Fitting: (10L) 9H

3.1 Necessity and importance of drawing second degree curve.

3.2 Fitting of second degree curve ($Y = a + bX + cX^2$),

3.3 Fitting of exponential curves of the type $Y = ab^X$ and $Y = aX^b$.

In all these curves constants a , b , c are found out by the method of least squares.

(Justification via determinant of matrix of second derivative/second derivative test).

4. Index Numbers: (8L) 6H

4.1 Introduction and scope of Index Numbers. Various types of Index Numbers like Human Development Index, Happiness Index BSE sensitivity Index.

4.2 Definition and Meaning.

- 4.3 Problems/considerations in the construction of index numbers.
- 4.4 Simple and weighted price index numbers based on price relatives.
- 4.5 Simple and weighted price index numbers based on aggregates.
- 4.6 Laspeyre's, Paasche's and Fisher's Index numbers.
- 4.7 Consumer price index number: Considerations in its construction. Methods of construction of consumer price index number - (i) family budget method
(ii) aggregate expenditure method
- 4.8 Shifting of base, splicing, deflating, purchasing power.

Recommended Books:

1. Agarwal, B. L. (2003). Programmed Statistics, Second Edition, New Age International Publishers, New Delhi.
2. Goon, A. M., Gupta, M. K. and Dasgupta, B. (1983). Fundamentals of Statistics, Vol. 1, Sixth Revised Edition, The World Press Pvt. Ltd., Calcutta.
3. Gupta, S. C. and Kapoor, V. K. (1983). Fundamentals of Mathematical Statistics, Eighth Edition, Sultan Chand and Sons Publishers, New Delhi.
4. Gupta, S. C. and Kapoor, V. K. (1997). Fundamentals of Applied Statistics, Third Edition, Sultan Chand and Sons Publishers, New Delhi.
5. Montgomery, D. C; Peck, E. A.; Vining, G. G.(2006). Introduction to Linear Regression Analysis, John Wiley and Sons
6. Purohit, S. G., Gore S. D., Deshmukh S. R. (2008). Statistics Using R, Narosa Publishing House, New Delhi.
7. Sarma, K. V. S. (2001). Statistics Made it Simple: Do it yourself on PC. Prentice Hall of India, New Delhi.
8. Snedecor G. W. and Cochran W. G.(1989). Statistical Methods, Eighth Ed. East- West Press.

SEMESTER – II**PAPER – II****ST – 112: Discrete Probability and Probability Distributions II**

Objectives: The main objective of this course is to introduce to the students some discrete Distributions and its application in real life.

- (i) to apply standard discrete probability distribution to different situations.
- (ii) to study properties of these distributions as well as interrelation between them.

1. Some Standard Discrete Probability Distributions: (16 L) 13 H**1.1 Poisson distribution:**

p.m.f. of the distribution

$$p(x) = \frac{e^{-m} m^x}{x!}, \quad x = 0, 1, 2, \dots, \quad m > 0$$

$$= 0, \text{ otherwise}$$

Notation: $X \sim P(m)$.

m.g.f. and c.g.f. Moments, mean, variance, skewness and kurtosis.

Situations where this distribution is applicable.

Additive property for Poisson distribution.

Conditional distribution of X given (X+Y) for Poisson distribution.

1.2 Geometric distribution:

Notation: $X \sim G(p)$,

Geometric distribution on support (0, 1, 2, ...) with p.m.f. $p(x) = pq^x$.

Geometric distribution on support (1, 2, ...) with p.m.f. $p(x) = pq^{x-1}$.

$0 < p < 1, q = 1 - p$.

Mean, variance, m.g.f. and c.g.f.

Situations where this distribution is applicable.

Lack of memory property.

2. Bivariate Discrete Probability Distribution: (6L) 5H

- 2.1** Definition of two-dimensional discrete random variable, its joint p.m.f. and its distribution function and their properties.
- 2.2** Concept of identically distributed r.v.s.
- 2.3** Computation of probabilities of events in bivariate probability distribution.
- 2.4** Concepts of marginal and conditional probability distributions.
- 2.5** Independence of two discrete random variables based on joint and marginal p.m.f.s

3 Mathematical Expectation (Bivariate Random Variable)

(14L) 12H

- 3.2 Definition of raw and central moments, m.g.f, c.g.f.
- 3.3 Theorems on expectations of sum and product of two jointly distributed random variables.
- 3.4 Conditional expectation.
- 3.5 Definitions of conditional mean and conditional variance.
- 3.6 Definition of covariance, coefficient of correlation, independence and uncorrelatedness of two variables.
- 3.7 Variance of linear combination of variables $\text{Var}(aX + bY)$.

Recommended Books:

1. Agarwal B. L. (2003). Programmed Statistics, second edition, New Age International Publishers, New Delhi.
2. Gupta, S.C. and Kapoor, V. K. (1983). Fundamentals of Mathematical Statistics, Eighth Edition, Sultan Chand and Sons Publishers, New Delhi.
3. Hoel P. G. (1971). Introduction to Mathematical Statistics, John Wiley and Sons, New York.
4. Hogg, R.V. and Craig R.G. (1989). Introduction to Mathematical Statistics, Ed. MacMillan Publishing Co., New York.
5. Mayer, P. (1972). Introductory Probability and Statistical Applications, Addison Wesley Publishing Co., London.

6. Mood, A. M. and Graybill, F. A. and Boes D.C. (1974). Introduction to the Theory of Statistics, Ed. 3, McGraw Hill Book Company.
7. Ross S. (2002). A First Course in Probability, Sixth Edition, Pearson Education, Inc. & Dorling Kindersley Publishing, Inc.

Reference Websites for Paper I and Paper II:

1. www.stats.unipune.ac.in (100 Data sets for Statistics Education by Dr. Anil P. Gore, Dr. Mrs. S. A. Paranjpe and Madhav B. Kulkarni available in ISPSfolder).
2. www.freestatistics.tk(National Statistical Agencies)
3. www.psychstat.smsu.edu/sbk00.htm(Onlinebook)
4. www.bmj.bmjournals.com/collections/statsbk/index.shtml
5. www.statweb.calpoly.edu/bchance/stat-stuff.html
6. www.amstat.org/publications/jse/jse-data-archive.html(International journal on teaching and learning of statistics)
7. www.amstat.org/publications/chance(Chancemagazine)
8. www.statsci.org/datasets.html(Datasets)
9. www.math.uah.edu/stat(Virtual laboratories in Statistics)
10. www.amstat.org/publications/stats(STATS : the magazine for students of Statistics)
11. www.stat.ucla.edu/cases(Case studies in Statistics).
12. www.statsoft.com
13. www.statistics.com
14. www.indiastat.com
15. www.unstat.un.org
16. www.stat.stanford.edu
17. www.statpages.net
18. www.wto.org
19. www.censusindia.gov.in
20. www.mospi.nic.in
21. www.statisticsofindia.in

SEMESTER II**Paper III****ST – 123 : PRACTICALS**

Pre-requisites: Knowledge of the topics in theory papers I and II.

Objectives: At the end of this course students are expected to be able

- (i) to compute correlation coefficient, regression coefficients,
- (ii) to compute probabilities of bivariate distributions,
- (iii) to fit binomial and Poisson distributions
- (iv) to compute probabilities of bivariate distributions.
- (v) to draw random samples from Poisson and binomial distributions.

S. No.	Title of the experiment	No. of Practicals
1	Scatter diagram, correlation coefficient (ungrouped data). Fitting of line of regression.	2
2	Fitting of second degree curve, exponential curve of type $Y = ab^x$, $Y = ax^b$	2
3	Fitting of Binomial distribution and computation of expected frequencies.	1
4	Fitting of Poisson distribution and computation of expected frequencies.	1
5	Applications of Binomial & hypergeometric distributions.	1
6	Applications of Poisson & geometric distributions.	1
7	Model sampling from Poisson and Binomial distributions.	1
8	Index numbers.	1
9	Scatter diagram, correlation coefficient, fitting of a line of regression, fitting of second degree curve using Ms-excel/ Any statistical software & interpretation.	2
10	Project	3

Notes:

1. For project, a group of maximum 8 students be made.
2. All the students in a group be given equal marks for project.
3. Different data sets from newspapers, internet, magazines may be collected and students will be asked to use Statistical techniques/tools which they have learnt.
4. Students must complete all the practicals to the satisfaction of the teacher concerned.
5. Students must produce at the time of practical examination, the laboratory journal along with the completion certificate signed by the Head of the Department.



Savitribai Phule Pune University

(Formerly University of Pune)

Three Year B.Sc. Degree Program in Zoology

(Faculty of Science & Technology)

F.Y.B.Sc. Zoology

Choice Based Credit System Syllabus

to be implemented from

Academic Year 2019-2020

Preamble:

Zoology is one of the major subjects of Basic Sciences and deals with all aspects of animal biology. It includes an interesting range of highly diverse topics. A zoology student needs to gain understanding of many areas of the subject to keep pace with advancements in Life Sciences.

This under-graduate degree program has been designed by the Board of Studies in Zoology of Savitribai Phule Pune University with a substantial component of what is needed from zoologists as a skilled career and what zoologists need to pursue for post-graduation and further academic studies. It follows the guidelines laid down by the University Grants Commission, New Delhi. This newly designed curriculum is a perfect blend of the classical aspects in Zoology and the advanced and more specialized areas.

This degree offers Discipline Specific Core Courses [CC] in Animal Systematics, Animal Ecology, Animal Cell biology, Applied Zoology, Pest Management, Histology, Biological Chemistry, Genetics, Developmental Biology, Parasitology, Medical & Forensic Zoology, Animal Physiology, Molecular Biology, Entomology, Techniques in Biology and Evolutionary Biology.

In addition to the Core Courses, Ability Enhancement Compulsory Courses [AECC] have been added in the second year i.e. Semester III and Semester IV of the undergraduate course. In the third year i.e. Semester V and Semester VI, Discipline specific Elective Courses [DSEC] and Skill Enhancement Courses [SEC] have been offered. The students, therefore, have an opportunity to take courses in Environment Awareness, Language communication: English/Marathi, Aquarium Management, Poultry Management and Environmental Impact Assessment. In Semester VI the students also have a course dedicated to Project work.

The syllabus has been framed in such a way that the student gains each year, a broader perspective of the subject as he progresses towards completion of the degree program. Field trips, Educational visits and the Project work have been included for the student to experience the applications of the theory learnt in the classroom.

After completion of the program, it is expected that students will understand and appreciate: animal diversity, few applications of Zoology, the structure, functions and life processes at cellular, tissue, organ and system level, significance of evolution, and basic concepts of human health. The students would also gain an insight into laboratory and field work through the practical course, field work and the project.

While presenting this new syllabus to the teachers and students of F.Y.B.Sc. Zoology, I am extremely happy to state that efforts have been made to seek inputs of all the stake holders to make it more relevant.

The new course that will be effective from the academic year 2019- 2020 and will follow the Choice Based Credit System in a Semester mode. It has been primed keeping in view the distinctive requirements of B.Sc. Zoology students. The contents have been drawn-up to accommodate the widening prospects of the discipline of Life Sciences. They reflect the changing prerequisites of the students. This program has been introduced with 132 credits for the subject group while 08 credits to earn from any of the 08 groups offering a range of curricular, cocurricular and extracurricular activities. This pattern has been specially aimed towards the overall development of the students'. The calculation of credits and CGPA will

be as per the guidelines of the University. The B.Sc. Zoology program provides an appropriate blend of classical and applied aspects of the subject. This newly designed curriculum will allow students to acquire the skill in handling scientific instruments planning and performing in the laboratory and exercising critical judgement, independent thinking and problem solving skills. The Syllabus has been revised with the following aims

- To foster curiosity in the students for Zoology
- To create awareness amongst students for the basic and applied areas of Zoology
- To orient students about the importance of abiotic and biotic factors of environment and their conservation.
- To provide an insight to the aspects of animal diversity.
- To inculcate good laboratory practices in students and to train them about proper handling of lab instruments.

1. Course Structure:

Course Structure with Credit Distribution of the Undergraduate Science Program in Zoology

Course	Course Code and Name of the Course		Credits
F.Y.B.Sc.	SEMESTER I	SEMESTER II	
CC	ZO-111 Animal Diversity I	ZO-121 Animal Diversity II	2+2
CC	ZO-112 Animal Ecology	ZO-122 Cell Biology	2+2
CC	ZO-113 Zoology Practical Paper	ZO-123 Zoology Practical Paper	1.5 +1.5
S.Y.B.Sc.	SEMESTER III	SEMESTER IV	
CC	ZO-231 Animal Diversity III	ZO-241 Animal Diversity IV	2+2
CC	ZO-232 Applied Zoology I	ZO-242 Applied Zoology II	2+2
CC	ZO-233 Zoology Practical Paper	ZO-243 Zoology Practical Paper	2+2
AECC	EVS 231-Environment Awareness	EVA 241-Environment Awareness	2+2
AECC	LA 231-English/Marathi	LA 241- English /Marathi	2+2
T.Y.B.Sc.	SEMESTER V	SEMESTER VI	
DSEC	ZO-351 Pest Management	ZO-361 Medical & Forensic Zoology	2+2
DSEC	ZO-352 Histology	ZO-362 Animal Physiology	2+2
DSEC	ZO-353 Biological Chemistry	ZO-363 Molecular Biology	2+2
DSEC	ZO-354 Genetics	ZO-364 Entomology	2+2
DSEC	ZO-355 Developmental Biology	ZO-365 Techniques in Biology	2+2
DSEC	ZO-356 Parasitology	ZO-366 Evolutionary Biology	2+2
DSEC	ZO-357 Zoology Practical Paper 1	ZO-367 Zoology Practical Paper 1	2+2
DSEC	ZO-358 Zoology Practical Paper 2	ZO-368 Zoology Practical Paper 2	2+2
DSEC	ZO-359 Zoology Practical Paper 3	ZO-369 Zoology Practical Paper 3	2+2
SEC	ZO-3510 Aquarium Management	ZO-3610 Environmental Impact Assessment	2+2
SEC	ZO- 3511 Poultry Management	ZO-3611 Project	2+2

Detailed Syllabus of F.Y.B.Sc.

Paper	Semester I Course Code & Course	Credits	No of Lectures	Marks (Internal + University)	SemesterII Course Code & Course	Credits	No of Lectures	Marks (Internal + University)
I	ZO-111 Animal Diversity I	02	30	15+ 35= 50	ZO-121 Animal Diversity II	02	30	15+ 35 = 50
II	ZO-112 Animal Ecology	02	30	15+ 35 = 50	ZO-122 Cell Biology	02	30	15+ 35 = 50
III	ZO-113 Zoology Practical Paper	01	15 practical	15+ 35 = 50	ZO-123 Zoology Practical Paper	01	15 Practical	15+ 35 = 50

Course No.	Course Title	Total Number of lectures/practical per Term	Standard of passing		
			Internal marks	University marks	Total marks
ZO-111 (First term)	Animal Diversity-I	Three lectures/Week (Total 30 lectures per term)	15	35	50
ZO-121 (Second term)	Animal Diversity-II	Three lectures/Week (Total 30 lectures per term)	15	35	50
ZO-112 (First term)	Animal Ecology	Three lectures/Week (Total 30 lectures per term)	15	35	50
ZO-122 (Second Term)	Cell Biology	Three lectures/Week (Total 30 lectures per term)	15	35	50
ZO-113 (First term)	Zoology Practical Paper	Practical session of 3 hours. 15 Practicals	15	35	50
ZO-123 (Second Term)	Zoology Practical Paper	Practical session of 3 hours. 15 Practicals	15	35	50

Animal Diversity I & II**Objectives:**

1. To understand the Animal diversity around us.
2. To understand the underlying principles of classification of animals.
3. To understand the terminology needed in classification.
4. To understand the differences and similarities in the various aspects of classification.
5. To classify invertebrates and to be able to understand the possible group of the invertebrate observed in nature, to understand our role as a caretaker and promoter of life.

Learning outcomes for the course:

1. The student will be able to understand classify and identify the diversity of animals.
2. The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.
3. The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.

Course Title: Animal Diversity –I**Course Code-ZO-111****Semester I****(2 credits-30 lectures)**

No.	Title & Contents	Number of lectures
1.	Principles of Classification: Taxonomy & Systematics 1.1 Taxonomy: Basic terminology and Introduction <ul style="list-style-type: none"> • Alpha, Beta and Gamma levels of taxonomy, Micro-taxonomy • Macro taxonomy: Phenetics (numerical taxonomy, Cladistics (Phylogenetic systematics), Evolutionary taxonomy (evolutionary systematics) • Classical taxonomy and experimental or neo taxonomy (biochemical taxonomy and Cytotaxonomy) • Significance of Taxonomy 1.2 Systematics: definition introduction	(05)

- 1.3 Linnaean system of classification (Six level classification: Phylum, class, order, family, genus, species)
- 1.4 Concept of Species: Biological & Evolutionary
- 1.5 Introduction to Binomial Nomenclature.
- 1.6 Introduction to Five kingdom system.
2. **General Features of kingdom Animalia** (02)
- 2.1 General characters of Kingdom Animalia, Grades of organization
- 2.2 Symmetry.
3. **Kingdom Protista (Phylum: Protozoa)** (07)
- 3.1 Introduction to Phylum Protozoa
- 3.2 Salient features of Phylum Protozoa
- 3.3 Classification of Phylum Protozoa up to classes with two examples of each class (names only).
Class Rhizopoda (e.g :*Entamoeba histolytica*, *Arcella*),
Class Mastigophora (e.g: *Euglena viridis*, *Trypanosoma gambiense*),
Class Ciliata (e.g *Paramecium caudatum*, *Opalina ranarum*),
Class Sporozoa (e.g *Plasmodium vivax*, *Toxoplasma gondii*)
- 3.4 Locomotion in Protozoa: Amoeboid, Ciliary and Flagellar with suitable examples
- 3.5 Type Study: ***Paramecium caudatum***: Classification, Habit and Habitat, External morphology, Feeding and digestion, Excretion, Reproduction (binary fission and conjugation)
- 3.6. Economic importance of Protozoa (three harmful and one useful protozoan)
- 3.6.1-**Harmful Protozoa:**
Plasmodium vivax (malarial parasite),
Entamoeba histolytica (Amoebic dysentery),
Trypanosoma gambiense (Gambian sleeping sickness).
- 3.6.2- **Useful Protozoa:**
Trichonympha

4. **Origin of Metazoa** (01)
4.1 Introduction Origin and importance of Metazoa
5. **Phylum Porifera** (06)
5.1. Introduction to Phylum Porifera
5.2 Classification of Phylum Porifera up to classes with two examples of each class (names only, no description of specimens).
Class Calcarea (e.g.: *Leucosolenia*, *Sycon* (*Scypha*))
Class Hexactinellida (e.g: *Euplectella* (venus flower basket), *Hyalonema* (glass sponge))
Class Demospongiae (e.g: *Chalina* (Mermaid's gloves, *Spongilla* (fresh water sponge))
5.3 Canal system in sponges: Ascon, Leucon and Rhagon type.
5.4 Skeleton in sponges: Spicules, its types:
Microscleres & Megascleres,
Monoaxon – monactinal, diactinal, Amphidiscs, Triaxon, Polyaxon,
Spongin fibres.
5.5 Regeneration in sponges.
5.6 Economic importance of Phylum Porifera.
6. **Phylum: Cnidaria** (05)
6.1 Introduction to Phylum Cnidaria
6.2 Salient features of Phylum Cnidaria
6.3 Classification of Phylum Cnidaria up to class level with given examples each class (names of examples only)
Class Hydrozoa e.g.: *Hydra*, *Physalia* (Portuguese man of war)
Class Scyphozoa e.g: *Aurelia* (Jelly fish), *Leucernaria* (trumpet shaped Jellyfish)
Class Anthozoa: e.g; *Metridium* (Common sea anemone)
6.4 Polymorphism in Hydrozoa: Polyps & Medusa (polyp types: gastrozooids, dactylozooids, gonozooids) and functions
6.5 Economic importance of Cnidarians with reference to Corals and Coral reefs.

7. Phylum Platyhelminthes (04)

7.1 Introduction to Phylum Platyhelminthes

7.2 Salient features of Phylum Platyhelminthes

7.3 Classification of Phylum Platyhelminthes up to classes with two examples each class (names of examples only).

Class: Turbellaria (e.g: *Dugesia*, *Bipallium*)

Class: Trematoda (e.g: *Fasciola hepatica*, *Schistosoma haematobium*)

Class Cestoda: (*Taenia solium* (pork tape worm), *Echinococcus granulosus* (dog tapeworm))

7.4 Parasitic adaptations in Platyhelminthes: structural and physiological.

7.5 Economic importance of Platyhelminthes

Course Title: Animal Ecology

Course Code: ZO 112

Semester I

(2 Credits-30 Lectures)

Learning outcomes for the course:

- The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population.
- To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature.
- The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community.
- The learner will be able to link the intricacies of food chains, food webs and link it with human life for its betterment and for non-exploitation of the biotic and abiotic components.
- The working in nature to save environment will help development of leadership skills to promote betterment of environment.

ZO 112: Animal Ecology**(2 Credits-30 Lectures)**

No.	Topic & Content	Number of lectures
1.	Introduction to Ecology 1.1 Concepts of Ecology, Environment, Population, Community, Ecosystem, Biosphere, Autecology and synecology.	(02)
2.	Ecosystem 2.1 Types of ecosystems: Aquatic (Freshwater, estuarine, Marine and terrestrial (Forest, Grassland and Desert) 2.2 Structure and Composition of Ecosystem (Abiotic components and biotic components. 2.3 Food chain: Detritus and grazing food chains, Food web, Energy flow through the ecosystem, Ecological pyramids: Number, Biomass, and Energy. 2.4 concept of Eutrophication in lakes and rivers.	(08)
3	Population 3.1 Characteristic of population: Density, Natality, Mortality, Fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion. 3.2 Exponential and logistic growth, 3.3 Population regulation – density-dependent and independent factors. Population interactions, Gause's Principle with laboratory and field interactions, 3.4 Quadrant, line and belt transect methods.	(08)
4.	Community 4.1 Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Eco tone and edge effect; Ecological succession with one example.	(07)
5.	Animal interactions 5.1 Introduction to Animal interactions 5.2 Types of Animal interactions with at least to suitable examples of each 5.2.1-Competition: Interspecific and intraspecific	(05)

5.2.2- Beneficial Associations:

Commensalism (remora fish on shark, Cattle egrets on livestock),

Mutualism (Termite and *Trichonympha*, bees and flowers, cleaning symbiosis in fish by prawns.

5.3 Antagonistic associations: Parasitism (*Ascaris* and man, lice and humans), Prey predation (Lion and deer).

Course Title: Zoology Practical Paper

Course Code: ZO113

Semester I

(1.5 Credits-45 Hours)

Animal Diversity –I

1. Museum Study of phylum Protozoa: Euglena, Paramecium, Amoeba, Plasmodium sp.
2. Museum study of Phylum Porifera: *Sycon*, *Euplectella*, *Chalina*, Spongilla.
3. Museum study of phylum Cnidaria: *Hydra*, *Physalia*, *Aurelia*, *Metridium*.
4. Museum Study of phylum Platyhelminthes: *Planeria*, *Faciola hepatica*, *Taenia solium*
5. Study of Paramecium: Culture, External morphology, Conjugation and Binary fission.
6. Study of permanent slides: Spicules and Gemmules in Sponges, T.S. of *Sycon*, T.S. of *Hydra*, *Taeniasolium*: Scolex, Gravid proglottid.
7. Identification of any three museum specimen with help of taxonomic identification key.
8. Visit to Zoological survey of India/ Museum/National Park.

Animal Ecology:

1. Estimation of Dissolved oxygen from given water sample.
2. Estimation of Water Alkalinity from given water sample.
3. Study of animal community structure by quadrat method (Field or Simulation).
4. Determination of density, frequency and abundance of species by quadrat method.
5. Study of microscopic fauna of freshwater ecosystem (from pond).
6. Estimation of water holding capacity of given soil sample.
7. Estimation of dissolved and free carbon dioxide from water sample.
8. Study of Eutrophication in lake/river.

Course Title: Animal Diversity –II**Course Code: ZO-121:****Semester II****(2 credits-30 lectures)**

No.	Title & Contents	Number of lectures
1.	<p>Phylum Aschelminthes</p> <p>1.1 Introduction to phylum Aschelminthes</p> <p>1.2 Salient features of Phylum Aschelminthes</p> <p>1.3 Classification of Phylum Aschelminthes (Class Nematoda only with two examples – <i>Ascaris lumbricoides</i> (common round worm), <i>Wuchereria bancrofti</i> (Elephantiasis)).</p> <p>1.4 Economic importance of class Nematoda.</p>	(04)
2.	<p>Phylum Annelida</p> <p>2.1 Introduction to Phylum Annelida</p> <p>2.2 Salient features of Phylum Annelida.</p> <p>2.3 Classification of Phylum Annelida up to classes with examples of following classes (names of examples only).</p> <p>Class Polychaeta (e.g: <i>Nereis pelagica</i> (<i>neries</i>/ sand worm, <i>Aphrodita aculeata</i> (=Aphrodite/ seamouse)</p> <p>Class Oligochaeta (e.g.: <i>Pheritima posthuma</i> (earthworm),</p> <p>Class Hirudinea (e.g: <i>Hirudinaria granulosa</i> common cattle leech)</p> <p>2.4 Economic importance of Annelida with reference to earthworms as friends of farmers and in their role in vermicomposting.</p>	(06)
3.	<p>Phylum Arthropoda</p> <p>3.1 Introduction to Phylum Arthropoda</p> <p>3.2 Salient features of Phylum Arthropoda</p> <p>3.3 Classification of Phylum Arthropoda with specific classes and mentioned examples (names only)</p> <p>Class:Crustacea:<i>Palaemon palaemon</i> (Prawn) <i>Brachyura</i> spp. crabs)</p> <p>Class: Chilopoda: <i>Scolopendra</i> sp. (centipede)</p> <p>Class: Diplopoda: <i>Julus</i> sp. (millipede)</p>	(06)

Class Insecta: *Periplaneta americana* (American Cockroach),
Anopheles stephensii (mosquito).

Class: Arachnida- Spiders, *Buthus sp* (scorpion)

3.4 mouth parts in insects: Mandibulate (cockroach), Piercing and sucking (female *Anopheles* mosquito), chewing and lapping type (honey bee)

3.5 Economic importance of Arthropoda

Useful Insects: Honey bee, Lac insect, Silkworm.

Harmful insects: Female *Anopheles* mosquito, Red cotton bug, Rice weevil

4. **Phylum Mollusca** (06)

4.1 Introduction to Phylum Mollusca

4.2 Salient features of Phylum Mollusca

4.3 Classification of Phylum Mollusca with specific classes and mentioned examples (names only)

Class Gastropoda e.g *Pila globosa* (apple snail)

Class Pelecypoda e.g *Lamellidens marginalis*(Bivalve)

Class Polyplacophora e.g *Chiton*

Class: Cephalopoda.e.g: *Octopus vulgaris* (common octopus), *Sepia officinalis* (common Cuttle fish)

4.4 Economic importance of Mollusca.

5. **Study of Phylum Echinodermata** (08)

5.1 Introduction to Phylum Echinodermata

5.2 Salient features of Phylum Echinodermata.

5.3 Classification of Phylum Echinodermata with specific classes and mentioned examples (names only)

Class Asteroidea (*Asterias rubens* sea stars or starfish)

Class: Holothuroidea. *Holothuria sp.* sea cucumbers)

Class: Echinoidea (*Echinus esculentis* common sea urchins)

Class: Crinoidea (sea lilies or feather stars)

5.4 **Type study: *Asterias rubens* (Sea Star):** Classification, Habit Habitat, External Morphology, Digestive system, Water vascular System and autotomy and regeneration

5.5 Pedicellaria in Echinodermata: straight, crossed, valvate, tridactylous, globigerous.

5.6 Economic importance of Echinidermata.

Course Title: Cell biology

Course Code: ZO122:

Semester II

(2 credits-30 lectures)

Learning outcomes for Cell Biology

- The learner will understand the importance of cell as a structural and functional unit of life.
- The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development.
- The dynamism of bio membranes indicates the dynamism of life. Its working mechanism and precision are responsible for our performance in life.
- The cellular mechanisms and its functioning depends on endo-membranes and structures. They are best studied with microscopy.

ZO122: Cell biology

(2 credits-30 lectures)

No. Title & Contents

Number of lectures

1. **Introduction:**

(04)

1.1 Introduction cell biology,

1.2 Cell as basic unit of life.

1.3 Importance of Cell Biology and its applications in industry.

Overview of Cells

1.3 Introduction to Prokaryotic and Eukaryotic cells.

1.4 Structure and function of Prokaryotic (*E. coli*)

1.5 Structure and function of Eukaryotic cells (Animal and Plant Cell)

- 2 **Techniques in Cell Biology:** (04)
- 3.1 Introduction
- 3.2 Microscopy: Basic Principle, Simple, Compound and applications of Electron Microscope.
- 3.3 Stains and dyes:
Types of Stain: Acidic, basic and neutral.
Dye (Preparation and chemistry of dyes not expected)
- 3.4 Micrometry.
- 3 **Plasma Membrane:** (06)
- 4.1 Introduction
- 4.2 Structure of plasma membrane: Fluid mosaic model.
- 4.3 Transport across membranes: Active and Passive transport, Facilitated transport, exocytosis, endocytosis, phagocytosis – vesicles and their importance in transport.
- 4.4 Other functions of Cell membrane in brief Protection, cell recognition, shape, storage, cell signalling.
- 4.5 Cell Junctions: Tight junctions, gap junctions, Desmosomes.
- 4 **Nucleus: Structure and function** (04)
- 5.1 Introduction to Nucleus
- 5.2 Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleoplasm, Nucleolus
- 5.3 Chromatin: Eu-chromatin and Hetro-chromatin, nature and differences.
- 5.4 Functions of nucleus
5. **Endomembrane System** (04)
- 6.1 Introduction
- 6.2 Structure, location and Functions: Endoplasmic Reticulum, Golgi apparatus, Lysosomes and vacuoles.
7. **Mitochondria and Peroxisomes** (03)
- 7.1 Introduction
- 7.2 Mitochondria: ultrastructure and function of mitochondrion.

7.3 Peroxisomes

Cell Division

(05)

7.1 Introduction

7.2 Cell cycle (G1, S, G2, M phases),

7.3 Mitosis.

7.4 Meiosis.

Course Title: Zoology Practical Paper

Course Code: ZO123

Semester II

(1.5 Credits-45 Hours)

Animal Diversity –II

1. Museum study of Phylum Aschelminthes: *Ascaris lumbricoides*,
2. Museum study of phylum Annelida: *Neries*, Earthworm, Leech.
3. Museum study of phylum Arthropoda: Prawn, Cockroach, Centipede, Millipede, Crab
4. Museum study of phylum Mollusca: *Pila*, *Chiton*, Bivalve, Octopus.
5. Museum study of phylum Echinodermata: Sea Star, Sea urchin, Brittle Star, sea cucumber.
6. Study of permanent slides: Mouthparts of Insects -Mandibulate, Piercing and sucking, Chewing and Lapping.
7. Types of Shells in Mollusca. *Pila*, Bivalve, Chiton, Sepia.
8. Economic importance of honey bees, Lac insects silk worms, red cotton bug, Anopheles mosquito
9. Earthworm: vermicomposting bin preparation and maintenance.
10. Visit to a vermicomposting unit/ field for insect pest collection and its identification

Cell Biology

1. Study of Microscope: Simple and Compound
2. Micrometry: Measurement of microscopic objects
3. Study of cell: Preparation of temporary mount of human buccal epithelial cells.
4. Preparation of blood smears to observe the blood cells
5. Temporary preparation of mitotic cell from onion roots
6. Study of Cell organelles (any three) by using microphotographs

Recommended Reference Books

Animal Diversity – I and II

1. Anderson, D.T (Ed) 1988: Invertebrate Zoology, Oxford University Press.
2. Barnes, R.D. (1982). Invertebrate Zoology, V Edition. Holt Saunders International Edition.
3. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). The Invertebrates: A New Synthesis, III Edition, Blackwell Science
4. Barrington, E.J.W. (1979). Invertebrate Structure and Functions. II Edition, E.L.B.S. and Nelson
5. Boradale, L.A. and Potts, E.A. (1961). Invertebrates: A Manual for the use of Students. Asia Publishing Home.
6. Brusca, R.C and Brusca, G. J (2003): Invertebrate (2nd ed.) Sinauer Associates Inc., Publishers Sunderland.
7. Hadzi, J (1963): The Evolution of Metazoa, Macmillan Newyork.
8. Hyman, L. H (1940): Invertebrates Vol I, Protozoa through ctenophore.
9. Hyman. L. H (1955): The Invertebrates Vol: IV, Echinodermata, the coelomate bilateria, Mcgraw Hill, Newyork.
10. Modern Text-Book of zoology, Vertebrates. By Kotpal, RL., Rastogi and Co., Meerut.
11. Nigam H.C., Zoology of Chordates, Vishal Publication, Jalandhar-144008.
12. Phylum Protozoa to Echinodermata (series) by Kotpal, RL. Rastogi and Co., Meerut
13. Parker T.J and W.A Haswell (1972): A text book of Zoology, Vol –I (7th edition by Marshall and Williams) Mcmillan Press ltd.
14. Jordan, E.L. and P.s.Verma Invertebrate Zoology, S. Chand and Co., Ltd. Ram Nagar, New Delhi.
15. Russel Hunter: - A Biology of higher invertebrates, MacMillon Co. Ltd. London

Animal Ecology

1. Colinvaux, P. A. (1993). Introduction to Ecology. II Edition. Wiley, John and Sons, Inc.
2. Krebs, C. J. (2001). Ecology: The Experimental Analysis of Distribution and Abundance, 6th Edition, ©2009, Pearson
3. Odum, E.P., (2008). Fundamentals of Ecology. Indian Edition. Brooks/Cole
4. Robert Leo Smith Ecology and field biology Harper and Row publisher
5. Ricklefs, R.E., (2000). Ecology. V Edition. Chiron Press
6. Sharma P.D. (2002) Ecology and Environment, Himalaya Publication

Cell Biology

1. Karp, G. (2010). *Cell and Molecular Biology: Concepts and Experiments*. VI Edition John Wiley and Sons. Inc.
2. De Robertis, E.D.P. and De Robertis, E.M.F. (2006). *Cell and Molecular Biology*. VII Edition. Lippincott Williams and Wilkins, Philadelphia.
3. Cooper, G.M. and Hausman, R.E. (2009). *The Cell: A Molecular Approach*. V Edition. ASM Press and Sunderland, Washington, D.C.; Sinauer Associates, MA.
4. Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. (2009). *The World of the Cell*. VII Edition. Pearson Benjamin Cummings Publishing, San Francisco.
5. Bruce Albert, Bray Dennis, Levis Julian, Raff Martin, Roberts Keith and Watson James (2008). *Molecular Biology of the Cell*, V Edition, Garland publishing Inc., New York and London
6. Inside the Cell (2005); US Department of Health Sciences, National Institute of Health, Natinal institute of General Medicine Sciences.
7. Lodish, H., D. Baltimore, A. Berk, L. Zipursky, M. Matsudaira and J. Darnell. (2010).
8. Molecular Cell Biology, Eds. 3, Scientific American & W. H. Freeman. New York.
9. Powar C B.: Cell Biology, Himalaya Publication, Meerut

Note: Latest editions of the recommended books may be referred.