# Course Outcomes
# 2021-22

| Department of Marathi | | |
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| Class | Course | Outcomes |
| FYBA (G) | MAR – 111(A) Vangamay Prakaracha Abhyas : Kadambari | • Develop Marathi reading & linguistic comprehension of students<br>• Develop interest in literature fiction and story.<br>• Inculcate moral and human values within themselves<br>• Understand the types of Marathi Short Story Writing. |
| (G) | MAR-121 (A) Vangamay prakaracha Abhyas : Kavita | • Develop Reading, Writing & Communication skills of students<br>• Develop attitude of literary forms Marathi Poetry.<br>• Understand the basic forms of fiction and Poetry.<br>• Students learn Values through literary works. |
| FYBCom (G) | MAR-102 (B) Optional Marathi | • The students develop interest in literature.<br>• The students use their moral and social sense in life.<br>• The students are able to make special use of language for their expression. |
| (G) | MAR-202 (B) Optional Marathi | • The students are able to make accurate use of Marathi language in their respective fields.<br>• The students could communicate effectively in their various business situations.<br>• The verbal and non-verbal skills of communication are developed. |
| SYBA (G2) | MAR-231 – Vangmay prakarancha Abhyas : Kadambari | • Develop Attitude of Literary forms in Marathi Novel.<br>• Information about the history of modern Marathi Literature.<br>• Information about Literary Theory.<br>• Develop the Novel reading skills. |
| (G2) | MAR-241 – Vangmay prakarancha Abhyas : Aatmakathan | • Develop Attitude of Literary forms in Marathi Aatmkathan.<br>• Get information well known writer in Marathi.<br>• Get information about the autobiography. |
| (S-1) | MAR-232 – Madhyayugin Gadya Vangmay Prakaracha Abhyas | • Get information about Acidnyapattra.<br>• Get information about Shivaji Maharaj.<br>• Get information well known writer Ramchadra Pant Amatya.<br>• Know the concept Gadya Vangamaya. |
| (S-1) | MAR-242 – Madhyayugin Padya Vangmay Prakaracha Abhyas | • Know the concept Padya Vangamaya.<br>• Get information about Sant Poet & their literature.<br>• Get information about Sant literature forms.<br>• Get information well Known Poet Sant Chokhamela, Sant Janabai, Sant Narhari Sonar etc. |
| (S-2) | MAR-233 – Sahitya Swarup Vichar | • The students develop interest in literature<br>• Information about the ancient Marathi Literature.<br>• Know the concept and process of Literature.<br>• Know Western Poetry Structure in ancient and modern era. |
| (S-2) | MAR-243 – Sahitya Swarup Vichar | • Information about the history of Marathi Literature.<br>• Know the concept & process Literature.<br>• Know the Indian Literature structure in ancient and modern era.<br>• Increase vision regarding literary value. |

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| SYBSc (G) | MAR-231 – Kathasangrah (swarup ani Satya) | • Develop literary tendencies.<br>• Understand the types of Marathi Short Story Writing,<br>• Get information about the Khandekar Short Story.<br>• Know the concept and process of literature. |
| (G) | MAR-231 – Natak (Premachya Gava Jave) | • Students get the knowledge of the theatre of the times.<br>• The students learn the origin of drama and dramatics art.<br>• The students learn the aspects and genres of drama.<br>• Develop Attitude of literary forms. |
| TYBA (G3) | MAR-351 – Vangmay prakaracha Abhyas : Natak | • Know the concept of Drama.<br>• The students learn the origin of drama as dramatics art.<br>• Students are acquainted with the language, style, dialogue structure of the age to which it belongs.<br>• Students learn value through literary works. |
| (G3) | MAR-361 – Vangmay prakaracha Abhyas : Lalit Gadya | • Introduce to the Minor genres such as one act play.<br>• Use literature to develop their social and moral sense in life.<br>• Develop attitude of literary forms. |
| (S3) | MAR-353 – Aadhunik Marathi Vangamayacha Itihas (1920 to 1960) | • Know the Types of Marathi Vagamaya.<br>• Study the socio-cultural & Political background on from 1920 to 1960.<br>• Know the brief literature in same period. |
| (S3) | MAR-363 – Aadhunik Marathi Vangamayacha Itihas (1920 to 1960) | • Study the socio-cultural & political background on from 1920 to 1960.<br>• Know the brief literature in same period.<br>• Know the various literary form in same period.<br>• Know the importance of language. |
| (S4) | MAR-354 – Bhasha Vidnyan | • Know the importance of language in human life.<br>• Know the various methods to the study of language.<br>• Understand the communication process and method.<br>• Develop Attitude of Marathi Linguistics & Grammer. |
| (S4) | MAR-364 – Bhasha Vidnyan | • Know the concept of Linguistics.<br>• Know the importance of language in human life.<br>• Know the various methods to the study of language.<br>• Understand the communication process and method. |
| MA I (P-I) | MAR-111 – Madhyayugin Marathi Vangamayacha Itihas (Prarambh to 1650) | • Understand Socio-Cultural & Political Impact on Madhyayugin Marathi Literature.<br>• Get information about the history of Medieval Marathi Literature.<br>• Get information about Medieval Marathi Literature forms.<br>• Study social change effect on Medieval Marathi literature. |
| (P-I) | MAR-121 – Madhyayugin Marathi Vangamayacha Itihas (1650 to 1818) | • Get information about Sant, Pant & Bakhar Vangmaya in Marathi Literature.<br>• Get information well known poet Sant Tukaram & Ramdas.<br>• Get information about Medieval Marathi Literature forms. |
| (P-II) | MAR-112 – Sahitya Samiksha | • Increase vision regarding literary value.<br>• Know the importance of criticism.<br>• Know the concept and process of Literature. |
| (P-II) | MAR-122 – Sanshodhan | • Develop of critical approach about Art & Literature.<br>• Know the research methodology & process. |

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| | | • Know the importance of research. |
| (P-III) | MAR-113 – Sahityakrutincha Abhyas | • Know the literary contribution of the Writer.<br>• Know the life value among the literatures.<br>• Get introduction of Writer & Literature. |
| (P-III) | MAR-123 – Sahityakrutincha Abhyas | • Know the story of Aasaram Lomate.<br>• Study life and literary value of Lomate Story.<br>• Study of Rajan Gavas Short Story. |
| (P-IV) | MAR-114 (A) – Strivadi Sahitya | • Introduce new trends in Marathi Literature.<br>• Know the Characteristics of feminine Literature.<br>• Know the importance of feminism. |
| (P-IV) | MAR-124 (A) – Strivadi Sahitya | • Know the history of the feminine movement of Maharashtra.<br>• Get introduction of feminine agitation India.<br>• Study of literature in feministic approach. |
| MA II (P-V) | MAR-231 – Aadhunik Marathi Vangamayacha Itihas (1945-1990) | • Know the brief literature in same period.<br>• Know the various literary form in same period.<br>• Study the Socio-Cultural & Political background of 1945 to 1960 periods. |
| (P-V) | MAR-241 – Aadhunik Marathi Vangamayacha Itihas (1945-1990) | • Study the Socio-Cultural & Political background of 1945 to 1960.<br>• Know the brief literature in same period<br>• Know the various literary form in same period. |
| (P-VI) | MAR-232 – Bhashavidnyan | • Know the importance of language in human life.<br>• Know the various methods to the study of language.<br>• Understand the communication process and method. |
| (P-VI) | MAR-242 – Bhashavidnyan | • Know the importance of language in human life.<br>• Know the various methods to the study of language.<br>• Understand the communication process and method. |
| (P-VII) | MAR-233 – Sathottary Marathi Vangmayin Pravah | • Introduce the literary form after 1960.<br>• Know the literary trend in Marathi literature after 1960.<br>• Study the impact on literature of the Socio-Political and Cultural background of Maharashtra after 1960. |
| (P-VII) | MAR-243 – Sathottary Marathi Vangmayin Pravah | • Study the impact on literature of the socio political and cultural background of Maharashtra after 1960.<br>• Know the literary trend in Marathi Literature 1960.<br>• Introduce the literary form after 1960. |
| (P-VIII) | MAR-234 (A) – Loksahitya ani Khandeshi Loksahitya | • Know the concept of folk literature.<br>• Know the co-relation between folk literature and other branches.<br>• Know the new trends study of folk literature in new era. |
| (P-VIII) | MAR-244 (A) –Khandeshi Loksahitya | • Know the concept of Khandeshi Loksahitya.<br>• Know the tradition of folk literature in Khandesh region.<br>• Know the co-relation between folk literature and other branches.<br>• Know the new trends study of folk literature in new era. |

| Department of Hindi | | |
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| Class | Course | Outcomes |
| FYBA | DSC HIN A-1 Hindi Kahani | • Develop Hindi reading & linguistic comprehension of students.<br>• Develop interest in literature story.<br>• Inculcate moral and human values within themselves.<br>• Understand the types of Hindi Short Story Writing. |
| FYBA | DSC HIN A-2 Hindi Kavita | • Develop Reading, Writing & Communication skills.<br>• Develop knowledge of literary forms Hindi poetry.<br>• Understand the basic forms of Poetry.<br>• Learn values through Hindi Poem. |
| FYBCom (G) | HIN-102 Optional Hindi | • Develop interest in literature.<br>• Use their moral and social sense in life.<br>• Make special use of language for their expression. |
| (G) | HIN - 202 Optional Hindi | • Make accurate use of Hindi language in their respective fields.<br>• Communicate effectively in various business situations.<br>• The verbal and non-verbal skills of communication are developed. |
| SYBA (MIL) | MIL-I HINDI- Lekhan Koushal: Media Evam Sahitya (Laghukatha ) | • Develop knowledge of Literary forms in Hindi Short Story.<br>• Obtained information about the history of modern Hindi Short Story.<br>• Obtained information about Journalism, types of Journalism.<br>• Develop the Media Writing skills. |
| (MIL) | MIL-II- HINDI- Lekhan Koushal: Media Evam Sahitya (Geet-Navgeet) | • Develop knowledge of Literary forms in Hindi Geet-Navgeet.<br>• Get information about well-known lyricist in Hindi.<br>• Get information about Media Writing ie. Print Media, Electronic Media, Social Media. |
| DSE-I-(A) | DSE-I A-HINDI – Kavyashashtra | • Know Indian Poetry structure in ancient and modern era.<br>• Know the importance of criticism.<br>• Increase vision regarding literary value.<br>• Get information about Alankar in Hindi Literature. |
| DSE-I-(B) | DSE-I -B-HINDI – Kavyashashtra | • Know the concept types of Literature.<br>• Get information about Gadya & Padya Vidha's.<br>• Get information about Chhand in Hindi Literature.<br>• Know the concept and process of literature.<br>• Know Western Poetry Structure in ancient and modern era. |
| DSE-II-(B) | DSE-II -B-HINDI – Upannyas Vidha – Samay Saragam | • Develop interest in Novel.<br>• Get information about the ancient Hindi Literature.<br>• Know the concept and process of Literature.<br>• Understand Novel forms and their types. |
| DSE-II-(B) | DSE-II -B-HINDI – Natak Vidha – Dharati Aba | • Know the concept of Drama.<br>• Know the concept and process of dramatics.<br>• Increase vision regarding literary value.<br>• Learn the origin of drama as dramatic art. |
| DSC-I(C) A | DSC-I(C) A HINDI : Kathettar Gadya Vidhayen | • Know the concept of Hidi Kathettar Gadya.（non-scriptural prose compositions）.<br>• Get information about various literary forms. |

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| | | • Get information about various writer and their literature.<br>• Tried to promote and preserve human values through Hindi Kathettar Gadya. |
| DSC-I(D) A | DSC-I(D) A HINDI : Shreshth Hindi Ekanki | • Historical introduction of hindi one act play form.<br>• Obtained information about hindi one act play writer.<br>• Tried to promote and preserve human values through Hindi Kathettar Gadya |
| SEC-1 HINDI | SEC-1 HINDI : Bhashik Sampreshan | • Get introduced to Linguistic form of Hindi language.<br>• Obtained information about concept of linguistic communication.<br>• Get introduced to verbal communication and non-verbal (written)communication. |
| SEC-II HINDI | SEC-II HINDI : Anuwad Vigyan | • Know the concept of Translation.<br>• Obtained information about Literary Translation.<br>• Obtained information about Literary Translation. |
| TYBA (G3) | HIN-351 – One Act Play, | • Get introduced to the Minor genres such as one act play.<br>• Acquainted with the language, style, dialogue structure of the age to which it belongs.<br>• Learn value through literary works. |
| (G3) | HIN - 361 – Essay and Hindi Grammer | • Get introduced to the Minor genres such as Essay.<br>• Use literature to develop their social and moral sense in life.<br>• Develop knowledge of literary forms. |
| (S3) | HIN - 353 – Hindi Sahitya Ka Itihas | • Hindi literature which acquainted them to the correct usage language.<br>• Use the Literature to develop their social and moral sense in life.<br>• Study the socio-cultural & political background of Adikal to Ritikal. |
| (S3) | HIN - 363 – Hindi Sahitya Ka Itihas | • Study the socio-cultural & political background from Adhunik Kal.<br>• Know the brief literature in same period.<br>• Know the various literary form in same period.<br>• Know the importance of language. |
| (S4) | HIN-354 – Bhasha Vidnyan Evam Rashtrabhasha Hindi Andolan ka Itihas | • Know the importance of language in human life.<br>• Know the various methods to the study of language.<br>• Understand the communication process and method.<br>• Develop knowledge of Hindi Linguistics & Grammar. |
| (S4) | HIN-364 – Bhasha Vidnyan | • Know the concept of Linguistics.<br>• Know the importance of language in human life.<br>• Know the various methods to the study of language.<br>• Understand the communication process and method. |
| MA I (P-I) | HIN-1110 – General Level – Katha Sahitya | • Get information about the Novel and Story Literature.<br>• Get information about Medieval Hindi Literature forms.<br>• Study social change effect on Medieval Hindi literature. |
| (P-I) | HIN-1210 – General Level – Kathetar Gadya Sahitya | • Get introduction of Hindi authors.<br>• Get information about the autobiography, essay and drama literature.<br>• Get information about Hindi Literature forms. |
| (P-II) | HIN-1120 – Spl. Level – Adikalin evam Madhyayugin Kavya. | • Get Information about Saint Poet & their Literature.<br>• Get information about Hindi's Historical Literature forms.<br>• Get information about well-known poet Vidyapati & Sant Tulsidas. |
| (P-II) | HIN-1220 – Spl. Level : Ritikalin kavya | • Know the Medieval Hindi Literature. |

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| | | • Get information about Hindi's Historical Literature forms.<br>• Get information about well-known poet Bihari, Ghananand & Bhushan. |
| (P-III) | HIN-1130 – Spl. Level : Bhartiya kavyashashtra ke siddhant Evam Waad | • Know Indian Poetry structure in ancient era.<br>• Know the importance of Criticism.<br>• Increase vision regarding literary values<br>• Know the concept and process of literature. |
| (P-III) | HIN-1230 – Spl Level : Pashchatya kavyashashtra evam Waad | • Know Western Poetry structure in ancient and modern era.<br>• Know the importance of criticism.<br>• Increase vision regarding literary values<br>• Know the concept and process of literature. |
| (P-IV) | HIN-1140 Spl. Level : Atmakatha | • Get information about well-known female writers in Hindi.<br>• Know the importance of feminism.<br>• Know the gender equality among literature.<br>• Know the literary contribution of female writers.<br>• Know the characteristics of feminist literature. |
| (P-IV) | HIN-1240 Spl. Level – Dalit Vimarsh | • Know the History of Dalit Movement in India.<br>• Study of literature in Dalit appoarch.<br>• Get information of Dalit agitation (India & World) |
| MA II (P-V) | HIN-2310 – Gen Level : Poetry | • Get acquainted with the language, poetic style, diction of the age to which it belongs.<br>• Learn values through literary works. |
| (P-V) | HIN-2410 – Gen Level : Poetic Drama, New Poetry and Gazal | • Know the new trends, study of poetic Drama, New Poetry and Gazal literature in new era.<br>• Learn Values through literary work.<br>• Get acquainted with the poetic style, diction of the age to which it belongs. |
| (P-VI) | HIN-2320 – Bhasha Vigyan | • Understand the communication process and method.<br>• Know the importance of language in human life.<br>• Know various methods of the study of language. |
| (P-VI) | HIN-2420 – Bhashavidnyan | • Know the importance of language in human life.<br>• Know various methods of the study of language.<br>• Understand the communication process and method. |
| (P-VII) | HIN-2330 – Spl. Level : Hindi Sahitya Ka Itihas | • Study the Historical Development of Hindi Literature.<br>• Know the brief literature in same period.<br>• Know the various literary form in same period. |
| (P-VII) | HIN-2430 – Hindi Sahitya ka aadhunik Itihas | • Study the socio-cultural & political background from 1900 till date.<br>• Know the brief literature in same period.<br>• Know the various literary from in same period. |
| (P-VIII) | HIN-2340 – Spl. Level Opt. : Loksahitya | • Know the co-relation between folk literature and other branches.<br>• Know the concept of folk literature.<br>• Know the tradition of folk literature in India.<br>• Know the new trends in the study of folk literature in new era. |
| (P-VIII) | HIN-2440 – Spl. Level Opt. : Prayojanmulak Hindi | • Understand the communication process and method.<br>• Get introduced to the media writing.<br>• Get introduced to the various aspects of Devenagari script. |

| Department of English | | |
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| Class | Course | Outcomes |
| F.Y. B. A. | Compulsory English | • Students will develop the ability to comprehend the written texts.<br>• Moral and human values will be inculcated amongst the students.<br>• Students will be aware of the aesthetic pleasure of literature.<br>• Students will be proficient in speaking and writing English for different purposes.<br>• Students will be aware of the importance of the communicative competence. |
| F.Y. B. A. | DSC1 A & B | • The course will introduce the basic forms of literature to the students.<br>• The course will develop the liking of reading in the students.<br>• The course will inspire students to develop their creative ability.<br>• Consequently, the course will develop reading skill and creative and expressive ability of the students. |
| F.Y.B.Com. | Core Elective English for Business | • Students will be familiar with the basics of the communication theory.<br>• Various skills of communication – L S R W skill, will be imbibed amongst the Students.<br>• Students will have the ability to work in a team.<br>• Other soft skills like problem – solving skills, Leadership Skills,<br>• Strong Work, ethics will have roots in the student's personality.<br>• Students will have linguistic competencies through various grammatical and vocabulary exercises. |
| F.Y.B.Com. | AEC I | • Students will know few famous entrepreneurs, inspiring them to know more celebrity – biographies from the world of commerce, trade & Industry.<br>• Students will develop English reading and linguistic comprehension.<br>• Students will Improve professional and entrepreneurial attitude. 4. Students will be acquinted with special challenges of starting new ventures.<br>• Students will be introduced with the qualities of the successful entrepreneurs. |
| F. Y. B. Sc. | AEC-A | • Students will be able to develop writing and reading skill<br>• Students will be able to use of English language through different means.<br>• Students will be able to make creative use of English language |
| F. Y. B. Voc. | VOC. 101 & 201 & Linguistic Proficiency (I & II) (English) | • Expression power and Comm. Skills of the students in English will prove.<br>• Students will be able to identify the necessities of behavioural & expressive attitudes, as per situations.<br>• Students will be able to write formal letters.<br>• Presentation skills of students will improve.<br>• Students will be able to face interviews. |
| S.Y.B.A. | Compulsory English CENG- 101 & 201 | • Students will understand the written text.<br>• Some human and moral values will be inculcated amongst students.<br>• Communicative competence of students will be developed, with special reference to SMS, E-Mail, Net Lingo etc.<br>• Students will learn to communicate through Situational<br>• Dialogues, News Writing, Information Transfer: Non-verbal, Verbal<br>• Students will get acquainted with formal and informal styles in using English.<br>• Students will be able to make and use new words. |
| S.Y.B.A. | DSC 1 C & D | • Students will develop interest in reading/understanding novel and drama. |

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| | | • Students will be acquainted with Novel and Drama as genres of literature.<br>• Students' competence to study, understand, analyse and interpret novel and drama will be developed.<br>• Students will understand key terms useful in the study of novel and drama.<br>• Students will understand major types of novel and drama. |
| S.Y.B.A. | DSE 1A & B | • Students will be acquainted with the major literary trends and tendencies and prominent writers of the 16th and 17th Century<br>• English Literature.<br>• Students will be aware of the literary history, salient features and sociocultural background of the period.<br>• Students will be able to grasp the content and critically appreciate the prescribed texts.<br>• Liking for the Elizabethan and Post Shakespearean literature will be inculcated amongst students. |
| S.Y.B.A. | DSE 2 A & B | • Students' will understand basic ideas about the 18th and 19th<br>• Century English Literature with special reference to Poetry and Novel.<br>• Students will be aware of the literary history, salient features, socio-political and cultural background of the Romantic and Victorian age.<br>• Students will be able to grasp the content and critically appreciate the prescribed Texts.<br>• Liking for the Romantic and Victorian literature will be inculcated amongst students. |
| S.Y.B.A. | SEC-I | • Students will be able to prepare for the competitive exams of various kinds especially meant for testing ability in English language.<br>• Students will be introduced with the common question types asked in competitive examinations concerning English- grammar, vocabulary, comprehension, and other significant topics.<br>• Students will be motivated to to appear and prepare for the competitive exams.<br>• Students will be able to overcome the fear about English as a compulsory subject in various competitive exams. |
| S. Y. B. sc. | AEC-B | • Development of research aptitude among students will further boost their confidence for research.<br>• Students will be introduced to basics of research.<br>• Communication skills of students will be improved.<br>• Student will be motivated to participate in research conventions like Avishkar, Indradhanushya. Anveshan etc., |
| S. Y. B. Voc. | VOC- 301 Linguistic Proficiency III (English) | • Students will become good English communicators.<br>• Students can successfully present themselves in seminars, oral presentations, interviews etc. |
| T.Y.B.A. | Compulsory English CENG- 351 & 361 | • Students will master the skills of reading, writing, listening and speaking.<br>• Students will be proficient in communication skills.<br>• Students will develop into morally and ethically strong human beings.<br>• Students will acquire conversational skills in daily life. |
| T.Y.B.A. | General Paper III ENG- 351 & ENG- 361 | • Students will know the origin, history, and development of English drama.<br>• Students will develop the ability to critically appreciate dramas.<br>• Students will gain knowledge of the socio-cultural milieu of the various phases of development of English drama.<br>• Students will gain knowledge about various trends and movements in English drama during different literary periods. |
| T.Y.B.A. | Special Paper - III Eng. 352 & 362 | • Students will be acquainted with the growth of Indian Drama and Novel in English during the 20th Century.<br>• Students will be able enough to evaluate, analyze, appreciate and criticize the prescribed Novel and Drama. |

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| | | • The socio-political, cultural background along with the literary movements of the country will be known to students.<br>• Students will understand the developments in American Poetry and Novel. |
| T.Y.B.A. | Special Paper – IV Eng. 353 & 363 | • Students will be introduced with the properties and functions of language.<br>• Phonological competence will be inculcated amongst the students.<br>• Students will have better understanding of the English grammatical forms and functions.<br>• Students will get an acquaintance with morphological concepts and processes.<br>• Students will have an introductory information of the basic concepts from syntax and semantics. |

| **Department of Geography** | | |
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| Class | Course | Outcomes |
| F.Y.B.A | Physical Geography -Part I | • Write down the effect of rotation of revolution the Earth<br>• Describe of the interior structure of the earth<br>• Write down the importance of longitudes & latitudes International Date line and Standard time<br>• Which are Theory regarding of Origin of Continents and oceans<br>• Describe the formation of Rocks Understand the work of internal and external forces and their associated landforms. |
| F.Y.B.A | Physical Geography -Part II | • Write down the importance of Atmosphere<br>• Describe the composition of atmosphere<br>• Write down how to measure of Atmospheric Pressure and formation of Pressure Belts<br>• Identify the types of winds |
| S.Y.B.A | Practical Geography Study of Scales, Projections and Surveying (with the help of plane Table and G.P.S.) (S2) | • Identify the different surveying techniques.<br>• Write down the information about preparation of layout.<br>• Describe the socio economic condition of the villages.<br>• Acquire knowledge of preparation of drawing of profile with the help of Dumpy level. |
| F.Y.B.sc | Paper- I Physical Geography (Lithosphere) | • Describe the fundamentals of Physical Geography.<br>• Write down the latitudes, longitudes and international dead line. |
| | | • Describe the origin of various landforms.<br>• Identify the formation of rocks there types and uses.<br>• Write down the work of internal forces. |
| F.Y.B.sc | Paper - I Physical Geography (Lithosphere -II) | • Write down the external forces.<br>• Classify the landforms and process.<br>• Identify denudation processes |
| S.Y.B.A | Economic Geography(G2) | • Describe the economic activity with characteristics<br>• Write down the problem and prospect about agriculture, trade and transport.<br>• Describe the need of conservation and Protection of natural resources.<br>• Describe the distribution of minerals & power resources |
| S.Y.B.A | Human Geography(G2) | • Describe the relationship of man and environment<br>• Studies of races of man kinds<br>• Write down information modes of life of Santhal, gonad, Bhil And nagas. |

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| F.Y.B.sc | Paper- II Physical Geography (Atmosphere) | • Describe the structure, composition of Atmosphere<br>• Identify the weather phenomena winds, humidity and precipitation.<br>• Write down the heat balance.<br>• Describe the forecasting methods |
| F.Y.B.sc | Paper- II Physical Geography (Hydrosphere) | • Describe the concept, structure and composition of Hydrosphere.<br>• Identify the salinity of ocean water and Isohalines.<br>• Write down the information of ocean currents<br>• Describe the types of Ocean tide |
| S.Y.B.sc | Paper II: Physical Geography of India | • Write the basic geographical Personality of India.<br>• Describe the variability of Physiographic division, climate in India.<br>• Identify the problems of soil erosion and their conservation methods.<br>• Classify the forests in India. |
| S.Y.B.sc | Paper III: Topographical maps, weather instruments, maps and images | • Identify the characteristics of ISO top sheet and IMD weather map.<br>• Write down the mechanism function of topographical maps.<br>• Describe the interpretation of weather images.<br>• Describe the interpretation of Top sheets.<br>• Describe the interpretation of IMD Weather Map. |
| S.Y.B.sc | Paper III Surveying, Leveling and Excursion/ Village Survey Report | • Write down the different surveying techniques.<br>• Prepare layout of agricultural land.<br>• Survey with the help of Dumpy level<br>• Describe how to draw profile with the help of Dumpy level.<br>• Solve the examples to calculate the height by using the Dumpy level and Indian Clinometers |
| T.Y.B.A | Environmental Geography (S3) | • Write down the definition and nature and scope of environmental geography.<br>• Describe the concept and structure of ecosystem & Nutrient cycling.<br>• Write down the problems of environmental pollution.<br>• Identify the conservation resources.<br>• Identify the about environmental hazards and management.<br>• Write down the various environmental protection acts. |
| T.Y.B.A | Remote Sensing & GIS (S3) | • Describe the History of Remote Sensing |

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| | | • Identify the Arial Photographs and Satellite Imageries<br>• Acquire Knowledge about Indian Remote sensing.<br>• Which are the components and function of GIS<br>• Use of GIS in various fields.<br>• Make use GIS & GPS software. |
| S.Y.B.Sc | Paper I: Environmental Geography – I | • Write down the definition, Nature and scope of environmental geography<br>• Definition and structure of ecosystem and nutrient cycling, energy flow.<br>• Write down the concept and types of biodiversity and threats of biodiversity.<br>• Identify the value of Resource. |
| S.Y.B.Sc | Paper I Environmental Geography – II | • Write down the problems of environmental pollution.<br>• Describe the environmental hazards and management.<br>• Essay on the conservation of resources.<br>• Write down the various environmental protection acts.<br>• Essay on the Global environmental issues. |
| S.Y.B.A | Physical Geography of Maharashtra (S1) | • Identify the characteristics of geographical Personality of Maharashtra<br>• Describe the major river in Maharashtra<br>• Describe the climatic characteristics of Maharashtra<br>• Classify the climatic zones in Maharashtra<br>• Identify the characteristics of forests in Maharashtra. |
| S.Y.B.A | Economic Geography of Maharashtra (S1) | • Describe the significance of agriculture, trade and transport in Maharashtra.<br>• Write down the factor affecting the distribution of population in Maharashtra<br>• Write down the significance of various types of resources in Maharashtra<br>• Classify the industrial zone in Maharashtra |
| T.Y.B.A | Population Geography (G3) | • Write down the history of population in world<br>• Classify the population data<br>• Describe distribution and density of population.<br>• Identify the characteristics population theories Malthus theory and Demographical transition theory.<br>• Investigate Current Issues and Problems in India |
| T.Y.B.A | Political Geography (G3) | • Describe the history, nature and scope of Political Geography.<br>• Essay on Evolution of states & nations.<br>• Describe Geopolitical theories.<br>• Investigate Problems and disputes in India |
| M.A-I | Principles of Economic Geography | • Describe the Nature and Scope of Economic Geography, approaches and recent trends of economics in the field of geography<br>• Write down the Classification of Resource, Approaches to Resource Utilization, Significance of natural and human resources in economic development.<br>• Review, understand and apply the modes of economics development by various models<br>• Describe the economic environment and economic development in the world<br>• Classify the types of economic regions<br>• Describe the role of international trade in world economic growth, Factors promoting international trade.<br>• Describe the impact of green revolution, Globalization on economic development in India. |

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| M.A-I | Principles of Population and Settlement Geography | • Describe the Nature and Scope of Population Geography and their evolution, significance and approaches for the study.<br>• Classify the Sources of Population Data and History of World Population and some factors responsible for world population and data sources for study.<br>• Explain the fundamental Concepts Related to Population such as density, over, optimum & under population, fertility, mortality and population for future perspectives.<br>• To review and understand the subject matter with the help of Theories of Population<br>• Fundamental/Basic Statistical Analysis using Statistical Software MS-Excel<br>• Describe the Population Movement, Migration and some causes, consequences and its effects.<br>• Explain the Nature and Scope of Settlement Geography Characteristics of Rural and Urban Settlements according to Indian Census and nature, scope, evolution and study methods.<br>• Classify the settlement types, pattern and nature and process of urban settlement and some basic concept related to settlement geography. |
| M.A-I | Principles of Climatology | • Describe the introduction to Climatology considering weather & climate, role of climate in human life, aims, nature, scope, and some other sub division of the course.<br>• To examining the Insolation and Heat Budget and its factors effects and their relations to other some elements<br>• Describe the concept of temperature and factors, horizontal, vertical and invasion of temperature.<br>• Identify the Atmospheric pressure and winds humidity and concept of precipitation and its types.<br>• Describe the Various types of rainfall, Humidity measurements types.<br>• To compare the Air masses and Fronts, atmospheric destructions and its relation of local to global.<br>• Describe the climatic classification based of nature and variability in climatic variations by Koppens and Thornth waits climatologist. |
| M.A-I | Principles of Geomorphology | • Describe the nature, scope and significance of geomorphology and fundamental concepts in subject.<br>• To examining the Origin and Evolution of the earth primary relief features by different theories in subject.<br>• Describe the Exogenous Processes considering weathering and mass wasting and nature and types of the slope.<br>• Evaluate the Development of Slope profile- W.Penck's View & Allen Wood View.<br>• Evaluate the fundamental Model of Davisian Cylcle of Erosion to learn the function of fiver and its landforms development process.<br>• Understand formation, process and development of Fluvial land forms<br>• To recognize and understand the formation, process and development of Aeolian Landforms in geomorphology. |
| M.A-I | Practical of Population and Settlement Geography | • Calculate the various types of density &Mortality and fertility Rate<br>• Calculate the degree of dispersion of Settlement.<br>• Calculate and measurement of Agricultural efficiency<br>• Draw and calculate transport network & ratio.<br>• Calculate & calculate the Location Quotient and Lorenz curve<br>• Calculate Stream ordering of morphometric analysis.<br>• Draw the wind rose & Hythergeraph |
| M.A-I | Geographical Thoughts | • Describe the pre-history of geographical Ideas in different duration form Greeks, roman's, Indian contribution.and impact of explorations & discoveries.<br>• Write down the Dark age in Europe, Age of discovery. |

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| | | • To learn about the German Contribution:-kant, Humboldt, Ritter, Ratzal.<br>• Compare between the fundamental concepts in geography these are General Geography v/s Regional Geography, Physical Geography v/s Human Geography, and Determinism Geography v/s Possibilism.<br>• Classify the various Approaches of Geographic Study.<br>• Describe the concept of areal differentiation, region with classification, Application of Remote Sensing.<br>• To understand the present status and application of modern techniques and its uses in climatology, geomorphology, economics geography, and population geography. |
| M.A-I | Social and Cultural Geography | • Describe the nature and group structure, group categorization and different groups in society.<br>• To examining the cultural complex and traits of culture and its concepts.<br>• Describe the tribal Social formation and Distribution of tribes<br>• Examine the meaning and theme in cultural geography<br>• Explain the Geography and religion, geography & language, cultural Nationalism. In cultural system<br>• Examine the origin and growth of culture and trends in culture |
| M.A-I | Remote Sensing | • Describe the modern techniques in geography under this course such as remote sensing and aerial photography.<br>• Review on development of Indian remote sensing.<br>• Classify the Concept of energy, EMR, Atmospheric effects.<br>• Understand the types of remote sensing, and types of platforms in remote sensing.<br>• Describe the Types of Aerial photographs, Types of Camera, Types of Film.<br>• To get an knowledge about satellite sensor and types of sensors, and their functions and characteristics<br>• Describe the Applications of GPS in various fields. |
| M.A-I | Geo-Statistical Methods | • Explain the introduction of geo-statistical method and statistical techniques and characteristics of data.<br>• To examining to probability assessment and their calculation procedures and applications and uses in different field of geography.<br>• Explain the concept of sampling and designing and conducting a sample survey for data collation and data analysis.<br>• Evaluate, calculate and understand the parametric statistics in geo-science system small sized sample and Non Parametric Statistics in geo-science system of various test and techniques.<br>• Calculate the regression analysis in geo sciences system and calculation, application in various fields of geography. |
| M.A-I | Practical of Computerize Data Analysis Techniques In Geography | • Describe the Microsoft Excel, work sheet and learn the basic about the preparation of graphs, maps, in software for Presentation Techniques<br>• To evaluate and investigation the population data in Microsoft excel software.<br>• Applied and understand the data analysis techniques for rural and urban settlement and prepare the adequate maps, various graphs.<br>• Describe the Data analysis techniques in Urban Geography.<br>• Evaluate the Data Analysis Techniques in Agricultural Geography.<br>• Evaluate the Data Analysis Techniques in Climatology<br>• Prepare the project Report and analyzed that data help with Microsoft Excel, work sheet and prepare slide and the Project report for presentation & Excursion Report. |
| M.A-II | (A) Regional Geography of U.S.A | • Describe the location, geostrategic importance, characteristics of size of USA<br>• Examine the physiographic features of USA<br>• Classify the Climatic Classification |

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| | | • Classify the Types of soil and vegetation and their problems.<br>• Understand the natural resources, Water and Land resources<br>• Describe the Energy & Mineral Resources .<br>• Understand to agricultural activities, patterns, regions, problems and prospect of U.S.A.<br>• Describe the some important issues related to USA. |
| M.A-II | Environmental Geography | • Explain the fundamental concept related to environment, meaning, structure, types, component, geography and environment, man's interaction with environment<br>• To study about the nature, scope, basic concept, interdisciplinary science, and study methods.<br>• Describe the types, functions and component of ecosystem and biodiversity, its types, conservation methods, and preservation of ecosystem.<br>• Discussion with students on the environmental global problems such as deforestation, desertification, depletion of ozone, global warming, La-nina and El neon.<br>• Explain the role of environmental legislation laws and acts for environment protection and conservation.<br>• Explain the environmental planning and management for future and also understand the climatic changes and its effect on environment and human being. |
| M.A-II | Geographical Information System | • Describe the all fundamental concept of GIS, potential of GIS, concept of space & time, objectives of GIS, elements of GIS, GIS tasks, history of GIS and GIS applications in different field.<br>• To examine and understand the spatial and non-spatial data models and all its functions components and applications in geography.<br>• Describe the Non-Spatial Data Models.<br>• Extract the knowledge and information about geospatial analysis and database query.<br>• Identify the Geospatial Measurements, Overlay operations, Network & Surface analysis, Geo-statistical & Visualization.<br>• Understand the concept of map, projections, and coordinate systems and basic of the same for different purposes in geography.<br>• Classify the types of Projection & Uses.<br>• Describe the GIS applied in the various kinds of fields, agriculture, populations, watershed planning and land use planning. |
| M.A-II | Watershed Management & Planning | • Explain the fundamentals concepts related to watershed, significances of watershed development, demarcation of watershed, types of watershed according to area and shape<br>• Know about the physical parameters of watershed, channel geometry and basin morphology.<br>• Describe the hydrological parameters, rainfall, aerial precipitation, evaporation and transpiration, infiltration, run off and drainage.<br>• Explain the watershed development planning and sample of watershed management and planning for appropriate development of watershed management for water conservation and development. |
| M.A-II | Practical of Physical Geography with the Help of G.I.S | • Describe the introduction of GIS software's special reference of ILWIS, to examining the types of GIS software and applications, introduction of menu, tools, page layout and setting, scanning image, import of image in the software.<br>• Write down the Image Registration and its analysis done in software.<br>• Prepare the topology of point, line and polygon and understand non spatial data analysis.<br>• Describe the Creation Table, Table attachment to map.<br>• Prepare the Slope map, Absolute & Relative Relief map, Average slope map, DEM & Coal Shadow.<br>• Describe the Cross Profile & Histogram of Basin, Longitudinal Profile of Rivers. |

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| | | • Prepare Climo-graph, Hyther-graph,Wind rose.<br>• Describe the History, Types Components of GPS & Reading on GPS.<br>• Write down the project report using both GPS and GIS software. |
| M.A-II | (B) Industrial Geography | • Define industrial geography, its nature, scope, and different study methods.<br>• To study the locations of industry and their activities primary and secondary and its factors responsible for same.<br>• To review on world distribution of some industries and selected countries.<br>• Explain the global nature of industrialization and related problems, methods of measuring the spatial distribution of manufacturing.<br>• Describe the environmental degradation, industrial hazards and occupational health, manufacturing industry, role and factors affecting on the same. |
| M.A-II | (B): Geography of Trade & Transportation | • Describe the concept, development and significance of trade, its types, role of tread in the world etc.<br>• Classify the trading blocks and trading pacts .<br>• Describe the international trade, its history, factors influencing, and India's foreign trade.<br>• Describe the Neo-classical theory, Theory of comparative advantage, Modern theory.<br>• Describe the transport and its basics, physical, economical, social and cultural<br>• Classify the transportation, land ways, water ways, and airways and all its functions.<br>• Examining the transportation network, measurement of accessibility, its hierarchies, hinterlands, models of network changes, gravity models and transport network and economic development.<br>• Identify the problems and urban transport with growth of urban transportation in developing courtiers. |
| M.A-II | (A) Research Methodology | • Describe the introduction of research, motivation in research, types of research, significance of research, research process and criteria of good research.<br>• Describe the research problems, selecting research problems, literature review .<br>• Classify the hypothesis, its types, sources, formation of hypothesis and utility of hypothesis in scientific research.<br>• Classify the research design, needs, features, basic principal and developing of research plan, and sampling design .<br>• Identify the Census & sample survey, Implications of sample designs, & Criteria for selecting a sampling procedure.<br>• Classify the type's data and methods of data collection<br>• & Guidelines for successful interviewing.<br>• Describe the processing and analysis of data using different statistical methods.<br>• Describe the interpretation and report writing, techniques, precaution of interpretation, layout of research report, types of reports and oral presentation mechanics of writing a research report. |
| M.A-II | (C): Agricultural Geography | • Examining the introduction to agriculture, nature, scope, significance and development of agriculture geography, approaches to study.<br>• Explain the fundamental concept, land use, crops, agricultural production and envelopment and study the determinants of agricultural activities, physical determinants, and socio-economic determinants.<br>• Classify the agricultural system its meaning and concept, whittlesey's classification of agricultural system, types of agricultural, study of the following types of agricultural in respect of area, salient features and their problems.<br>• Describe the agricultural regionalization and modes in agricultural geography and their classification of agricultural models and some theories. |

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| | | • Examine the agricultural statistics & land use survey techniques and agrarian revolution, meaning &merit and demerit of green revolution and white revolution. |

| Department of History | | |
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| Class | Course | Outcomes |
| F.Y.B.A | History Of India (1857-1950) | • Understand modern Indian history<br>• Understand the socio-religious reform movements in India<br>• Evaluate the work of Indian Social Reformers.<br>• Understand the new political trends in modern India<br>• Understand the concepts of nationalism and social groups in India. |
| F.Y.B.A | History Of India (1857-1950) | • Understand the Ideology of Mahatma Gandhi and Nationalism after 1920.<br>• Understand the concepts of Communalism<br>• Understand the work of communal institution in India<br>• Understand the process of Negotionans for Independence and Partition of India<br>• Understand the making of the constitution |
| S.Y.B.A. | History of the Marathas (A.D.1605-1750 A.D.) | • Understand the concept of swarajya in Maratha History.<br>• Explain the responsible factors for the establishment of swarajya.<br>• Evaluate the relation between Chh. Shivaji Maharaj and Adilshahi and Mughals.<br>• Get knowledge about the importance of coronation & Administration of Chh. Shivaji Maharaj.<br>• Create and enhance interest about regional History among the students |
| S.Y.B.A. | History of the Marathas (A.D.1605- A.D.1750 ) | • Understand the achievements of Chhatrapati Sambhaji<br>• Explain the significance of Marathas War of Independence<br>• Evaluate the relation between Maratha Power and Foreign Powers.<br>• Explain the responsible factors for the Rise of Peshwas.<br>• Understand the work of Peshwa Bajirao - I & Peshwa Balaji Bajirao |
| T.Y.B.A. | History Of Modern World (1789-1900) | • Learn about the causes and Effects of the French revolution.<br>• Understand the Napoleons internal reforms.<br>• Understand the factors responsible for the end of monarchy in France.<br>• Describe the various phase of nationalism in Europe<br>• Explain the causes and Effects of industrial revolution.<br>• Understand the process of Modernization of Japan. |
| T.Y.B.A. | History Of Modern World (1901-1945) | • Understand the importance Balkan Nationalism in Modern World.<br>• Evaluate the work of Dr. SUN-YET-SEN in China.<br>• Evaluate the causes and Effects Russian revolution.<br>• Evaluate the work of The League of Nation.<br>• Understand the fascism, Nazism and the rise of dictatorship in Europe.<br>• Explain the aftermaths of the World War Second. |

| Department of Political Sciences | | |
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| Class | Course | Outcomes |

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| F.Y.B.A | POL-G-101-Introduction to Indian Constitution. | ● To know Indian Political process in India.<br>● To know the citizens rights and duties.<br>● Understand basic structure of Indian Constitution.<br>● Understand basic features of Indian Constitution.<br>● Understand Indian Federal system. |
| F.Y.B.A | POL-G-201-A-Introduction to Indian Constitution. | ● To know the Executive system in India.<br>● To know the Legislative system in India.<br>● To know the Judicial system in India.<br>● To understand the emerging challenges before Indian Democracy.<br>● To understand the concept of National Integrations. |
| S.Y.B.A | - DSC-1C-Introduction to Administration of Maharashtra . | ● Students understand Maharashtra's Historical, Geographical, Social, Political background.<br>● Understand Administration system in of Maharashtra.<br>● Get Knowledge about Panchayati Raj system in Mahatrastra.<br>● To know District Administration of Maharashtra.<br>● To know the various wings of secretariate. |
| S.Y.B.A | DSC-1D-Introduction to local and Administration of Maharashtra. | ● Understand Historical Background of Rural and Urban Administration of Maharashtra.<br>● Students understand Rule of law.<br>● To know Aadivasi Vikas Mandal in Maharashtra.<br>● To know Marathawada Vaidhanic Mandal of Maharashtra.<br>● To know Minority Development board in Maharashtra. |
| T.Y.B.A | POL-351-(A-G-3)- Introduction to Personnel Administration and Management | ● To know the Policy formation in India.<br>● To know the characteristics of Civil services.<br>● Understand Methods of Recruitment of Civil services in India.<br>● To know the Functions of civil services.<br>● To know the methods of Determining Qualifications of civil services. |
| T.Y.B.A | POL-361-(A-G-3)-Introduction of Personnel Administration and Management. | ● Understands the meaning and types of Management.<br>● To understand the importance of leadership.<br>● To know the policy formation and co-ordination in organization.<br>● To know the importance of co-ordination.<br>● Understand new trends in Management. |

| **Department of Psychology** | | |
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| Class | Course | Outcomes |
| F.Y.B.A | Foundations of Psychology PSY-101& Introduction to social psychology PSY-201 | • Impart knowledge of the basic concepts and modern trends in Psychology.<br>• Relate the fundamental principles of psychology in everyday life.<br>• Make the students aware of the applications of psychological concepts in various fields.<br>• Understands the basics of social psychology and to understand the individual in the social world.<br>• Make the students aware of the applications of the various concepts in social psychology in the Indian context. |

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| S.Y.B.A | Advanced social Psychology PSY-231-A & Social Psychology Process PSY-241-A(G2) | • Describe basic concepts, methodology, theories and modern trends in social psychology.<br>• Analyze causes, types and consequences of social behavior.<br>• Identify various fields of social psychology for research.<br>• Identify social problems and able to find out its solution.<br>• Apply various concepts in social psychology in Indian social context. |
| S.Y.B.A | Psycholdiagnostics PSY-232 &Psychopathology PSY-242 (Special 1) | • Define abnormal behavior and explain the rationale behind it.<br>• Discuss procedures used to evaluate and diagnose abnormal behavior.<br>• Explain general causes of abnormalities.<br>• Compare and integrate biological, Psychological and socio-cultural explanation of abnormal behavior.<br>• Identify treatments for mental disorders and compare their efficacy in treating such disorders. |
| S.Y.B.A | Counseling Content and Process PSY-233-A & Counseling Therapy and Application PSY-243-A (special 2) | • Explain nature, process, theories and techniques of counseling.<br>• State applications of counselling for day-to-day problems.<br>• Explain use of psychological tests to understand the clients.<br>• Familiarizes the students with counseling therapy.<br>• Develop knowledge in students about how to follow up the behavioral problems and solve through with the help of therapy.<br>• Students should know the application of the counseling therapy. |
| T.Y.B.A | Modern Applied Psychology PSY-351-A &Applied Psychology and Human Life PSY-361-A(G3) | • Describe applied fields of psychology.<br>• Identify importance of personal control, community relationship and decision making.<br>• State importance of relationship between environment and human being.<br>• Explain importance of relationship between theoretical and practical psychological principles.<br>• Function effectively and confidently in wide range of society. |
| T.Y.B.A | Research Methodology in Behavioral Science PSY-352-A & Experimental Psychology and Test Measurement PSY-362-A(S3) | • Perform scientific research in psychology<br>• Describe general and special abilities with respect to psychological testing. |

| **Department of Commerce** | | |
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| **Class** | Course | Outcomes (Students will be able to ) |
| FY BCOM SEM - I | Computing Skills | • Acquaint to Microsoft office 2013 word, PowerPoint<br>• Understanding the Microsoft office 2013 –excel<br>• Using the Tally- Computerized Accounting<br>• Understood introduce to tally ERP 9 Release 5<br>• Understanding of the voucher entry<br>• How to Maintain trial balance and final account |

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| | Modern Office Management | • Acquaint to Modern Office Management<br>• Understand the Concept of Traditional & Modern Concept of Office & Changing Office View Past Present & Future<br>• Effective Impact of Management Techniques<br>• Selection of Office Layout<br>• Understanding of the Concept System & Procedure, Describe the Flow of Work<br>• How to Maintain Paperless Office<br>• Understanding the Importance of Office Environment & Safety Remedies |
| | Computing Management | • Student learn Accounting using tally ERP 9<br>• Student understanding creation of stock items<br>• Students learn how to make bill wise details<br>• Understanding the key elements<br>• Understanding the hoe to use reporting and Printing<br>• Understanding the concept key Activities |
| | Retail Management | • Acquaint to Retail Management |
| | | • Student Introduce to Retail & Retailing<br>• Understanding to Retail Framework<br>• Identify of the Trends of retailers scenario of Indian and global<br>• Understanding of the Concept of traditional and non-traditional retail format<br>• Describe the economics of retailing ,the MRP Regime in India |
| | Marketing & Advertising | • Student understanding create awareness about marketing<br>• Student acquaint basis concept of marketing<br>• Student know establish link between business & marketing<br>• Student know relevance of marketing on modern competitive worlds<br>• Student develop an analytical to plan for various marketing strategy |
| FY BCOM<br>SEM - II | Retail Management | • Understanding the role of marketing mix ,retail communication mix<br>• Identified the retile Merchandising<br>• Describe the Mall management ,reasons for failure of some malls in India<br>• Classify the types of franchising<br>• Describe the Application of information technology, future trends, smart cards and E-cash<br>• Understanding retail Consumers |
| | Modern Office Management | • Understanding of the Duties & Responsibilities of Manager in Organization<br>• Identified the Office Services<br>• Describe of the Different type of Appliances & Machines Use in Office<br>• How to Use Stationary in the Office<br>• Understanding of the Secretarial Procedure Qualities , Qualification of Secretary<br>• Classified of the Types of Office |

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| | Marketing & Advertising | • Student Know the create awareness about advertising<br>• Student understand basic concept & nature of advertising<br>• Student know the relevance of advertising on modern competitive worlds<br>• Students understanding the develop an analytical ability to plan for various advertising strategies |
| SY BCOM<br>SEM - III | Business Entrepreneurship | • Student understand the concept of entrepreneurship<br>• Student know the qualities of entrepreneurship<br>• Student know about role of entrepreneurship inducement measure |
| | Business Management | • Student understanding The concept of Management& scope of Management<br>• Student acquaint with modern mgt practices<br>• Student know latest trends in Management |
| | Business Tax & Law | • Student learn the Indian contract act 1872<br>• Student understanding the Indian sales of goods act 1930<br>• Students learn crossing and negotiable instrument act ,1881 |
| | | • Understanding the Indian trade union act ,1926<br>• Understanding the information technology act -2000<br>• Understanding the patent act 2002 |
| SY BCOM<br>SEM - IV | Business Management | • Student Know the develop leadership skills & communication skills<br>• Student understand various functions of Management |
| | Business Tax & Law | • Student understanding the Indian partnership act, 1932<br>• Student understanding the industrial dispute act, 1947<br>• Student understanding the factories act ,1948<br>• Student understanding the consumer protection act ,1986<br>• Environment protection act,1986<br>• Understood the goods & service tax act (GST), 2017 |
| TY BCOM<br>SEM - V | Human Resource Management | • Student understanding the concept of HRM ,human resource planning,& job analysis & designing<br>• Student understanding the recruitment ,selection, placement & induction |
| TY BCOM<br>SEM - VI | Human Resource Management | • Student understanding the employee training, grievances, management development<br>• Student understanding the employee discipline, performance appraisal<br>• Student know the resent trends in HRM |

| **Department of BCA** | | |
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| Class | Course | Outcomes |

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| FYBCA | BCA101Foundation Course for Managers | • Define fundamental accounting concepts, Conventions & terminologies.<br>• Describe the importance, functions & objectives of books of entry, subsidiary books, bank reconciliation statement and Final accounts.<br>• Prepare books of entry, subsidiary books, bank reconciliation statement and Final accounts using double entry book keeping.<br>• To rectify the errors located in books of entry & subsidiary books. |
| | BCA102 Computer Fundament and Networking | • Understand the History of Computers.<br>• Understand What Computer and Basic concepts of computer are.<br>• Aware about various types of Computers, types of input and output devices.<br>• Preparation of Algorithm and Flowchart of Program. .<br>• Understand computer viruses and its types |
| | BCA103 Essential of Web Design I | • Student will be able to create a navigation menu using an unordered list.<br>• Student will be able to create a link to another web page on the Internet.<br>• Student will be able to convert a list of words into a functional navigation menu.<br>• Student will be able to set up a same-page link that allows users to skip to the main content of a web page , add an email link to a web page |
| | BCA104 Programming In C | • Develop their programming skills.<br>• Be familiar with programming environment with C Program structure.<br>• Declaration of variables and constants<br>• Understand operators, expressions and Preprocessors.<br>• Understand arrays, it's declaration and uses Functions, Pointers, Structures and Unions in C language.<br>• Design, develop and test programs written in 'C' |
| | BCA105 Practical on Computer & Internet | • Learn computer networks, its types and basics of Internet<br>• Know the different page types on websites and it's navigations |
| | BCA106 Practical on Web Design-I | • Student learned the basic tags required for all HTML documents and be able to create a blank HTML page with all of the essential tags in place.<br>• Use some common tags for adding content to a web page including <h1>, <h2>, <h3>, <p>, and <br>• Student will be able to apply the concepts of nesting and assigning attributes to tags.<br>• Student will be able to properly utilize headings and paragraphs to structure content on a web page will be able to explain the difference between an ordered and unordered list. |
| | BCA107 Practical on C Programming | • Understand the basic terminology used in computer programming<br>• Write, compile and debug programs in C Language.<br>• Use different data types in a computer program.<br>• Design programs involving decision structures Loops and functions.<br>• Explain the difference between call by value and Call by reference. |
| | BCA201Financial Accounting& Costing | • Develop and understand the nature and purpose of financial statements in relationship to decision making<br>• Explain the concepts and procedures of financial reporting, including income statement, statement |
| | | • of retained earnings, balance sheet, and statement of cash flows<br>• Develop the ability to use a basic accounting system to create (record, classify, and— summarize) the data needed to solve a variety of business problems.<br>• Define and apply management/cost accounting Concepts. |

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| | BCA202 Practical on Professional Communication | • Mastering the art of a professional business Presentation.<br>• Distinguishing different communication process and its practical application<br>• More effective written communication |
| | BCA203 Essential of Web Design II | • Use knowledge of HTML and CSS code and an<br>• HTML editor to create personal and/or business websites following current professional and/or industry standards.<br>• Use critical thinking skills to design and create websites.<br>• Use a stand-alone FTP program to upload files to a web server.<br>• Be prepared to pursue future courses in website development and design. |
| | BCA204 Programming In C++ | • Understand advanced use of arrays in C++ programming<br>• Understand functions in C++ programming.<br>• Understand the concept of pointers in C++ programming.<br>• Understand structured variables classes and objects |
| | BCA205 Practical on Professional Communication | • Mastering the art of a professional business presentation .<br>• Distinguishing different communication process and its practical application<br>• More effective written communication |
| | BCA206 Practical on Web Design-II | • Use knowledge of HTML and CSS code and an HTML editor to create personal and/or business websites following current professional and/or industry standards.<br>• Use critical thinking skills to design and create websites.<br>• Use a stand-alone FTP program to upload files to a web server.<br>• Be prepared to pursue future courses in website development and design. |
| | BCA207 Practical on C++ Programming | • Understand advanced use of arrays in C++ programming<br>• Understand functions in C++ programming.<br>• Understand the concept of pointers in C++ programming.<br>• Understand structured variables classes and objects |
| S.Y.BCA | BCA31 Mathematics and Statistics for Managers | • Reason mathematically about basic discrete structures such as numbers, sets, used in computer science.<br>• Students would be able to understand the theories and principles of linear algebra<br>• Students would be able apply their knowledge by solving mathematical problems.<br>• An ability to apply knowledge of mathematics, science .<br>• An ability to design and conduct experiments, as well as to analyze and interpret data. |
| | BCA32 Computer Animation Using Flash | • Create graphics using design elements<br>• Differentiate between vector and raster image<br>• Change attributes of images<br>• Identify the fundamental animation features and functions<br>• Produce key drawings for animations.<br>• Create 2D digital animation Develop vector graphics and 2D animations, making use of various tools and animation techniques provided by Flash 7.Develop animation using action script of flash<br>• Publish flash movie |
| | BCA33 Career Management & Counselling | • To find impacts of career guidance and counseling on student's career development.<br>• To find satisfaction of guided working persons regarding their profession and comparison with unguided professionals. |

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| | BCA34 Java Programming | • Get knowledge JDK Environment.<br>• Explore polymorphism using Function and Operator Overloading, overriding.<br>• Understand the different aspects of hierarchy of classes and their extensibility.<br>• Understand the concepts of streams and files.<br>• Write programs for handling runtime errors using exception |
| | BCA35 Practical on Computer Animation | • Student will learn basic concepts of 2D Animation, Storyboarding and create animated digital multimedia content for media using the tools and techniques as available in the Adobe Flash software.<br>• Produce key drawings for animations.<br>• Create 2D digital animation Develop vector graphics and 2D animations, making use of various tools and animation techniques provided by Flash 7.Develop animation using action script of flash<br>• Publish flash movie |
| | BCA36 Practical on Java | • Understand programming language concepts, particularly Java and object-oriented concepts.<br>• Write, debug, and document well-structured Java applications recursive algorithms.<br>• Implement Java classes from specifications and effectively create and use objects from predefined class libraries<br>• Understand the behavior of primitive data types, object references, and arrays<br>• Apply decision and iteration control structures to implement algorithms |
| | BCA37 Practical on Tally ERP | • Students learn the basics of tally and importance of tally in today‟s computerized environment.<br>• Students learn how to create company accounts using tally and about function keys and shortcut keys.<br>• To know about voucher entry, payment voucher, receipt voucher, credit and debit note.<br>• Students learn how to create single and multiple ledgers, group creation, budget, inventory groups and other functions.<br>• Students learn to prepare final accounts in tally along with cash flow statements and inventory analysis reports. |
| | BCA41 C# .Net | • Create C#.NET programs that solve simple business problems.<br>• Validate user input<br>• Construct a C#.NET class based on a UML class diagram<br>• Perform a test plan to evaluate his/her work<br>• Adequately document C#.NET programs |
| | BCA42 Stock And Commodity Market | • Apply the methodology of trading in secondary market instruments like trade ring, online-trading<br>• Analyze the risk factor associated with these<br>• Understand the methods of fixation of indices and functioning of regulatory agencies in-commodity market. |
| | BCA43 Data Structure | • Appropriate data structure as applied to specified problem definition.<br>• Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.<br>• Students will be able to apply concepts learned in various domains like DBMS, compiler construction etc.<br>• Students will be able to use linear and non-linear data structures like stacks, queues , linked list etc. |

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| | BCA44 Cyber Crime and Security | • Students will be familiar with Cyber World, Internet and online resources, Security of information and Digital signature.<br>• Examine the areas of cyber space, Regulation of cyber space – introducing cyber law, Scope of Cyber laws – e-commerce.<br>• Illustrate online contracts; IPRs (copyright, trademarks and software patenting),e-governance and cyber crimes<br>• Cyber law in India with special reference to Information Technology Act, 2000.<br>• Students will be able to understand Cyber threats,<br>• Data security strategies and Legal aspects . |
| | BCA45 Practical on Transaction related to Stock And Commodity | • Understand the functions of primary markets, floating capital and recent trends in public issues<br>• Learn the concepts of Mutual funds and apply their generalizations towards classification of mutual fund and its necessity.<br>• View the merchant Banking in Indian scenario on both Indian pre issue and post issue management<br>• The legal framework pertaining to securities contract regulation act 1956.¬ |
| | BCA46 Practical on Data Structure using C++ | • Appropriate data structure as applied to specified problem definition.<br>• Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.<br>• Students will be able to apply concepts learned in various domains like DBMS, compiler construction etc.<br>• Students will be able to use linear and non-linear data structures like stacks, queues , linked list etc. |
| | BCA47 Practical on C# .Net | • Create C# programs and use .NET system.<br>• Use selection and repetition commands. ILO 3,2,7<br>• Design C# programs.<br>• Create and use classes and inheritance. |
| TYBCA | BCA51 Entrepreneurship Development | • Have the ability to discern distinct entrepreneurial traits<br>• Know the parameters to assess opportunities and constraints for new business ideas<br>• Understand the systematic process to select and screen a business idea<br>• Design strategies for successful implementation of ideas 5. write a business plan |
| | BCA52 Soft Skills Development | • Understand their strengths and weaknesses, type of personality, work preferences, style of<br>• Communications; Understand and apply knowledge of individual differences and personality type peculiarities in<br>• Communication process and at interaction with other people at learning/working context; Define and analyze a writing or speaking situation, and develop a logical, clear response to that |
| | BCA53 Linux Operating System | • To learn to develop software for Linux/UNIX systems.<br>• Develop shell programs in vi/vim editor.<br>• Understanding the basic set of commands and utilities in Linux/UNIX systems.<br>• To control the behavior of OS by writing Shell scripts<br>• To understand the inner workings of UNIX-like operating systems |
| | BCA54 Internet Programming with ASP.NET | • Successful students will able to design web applications using ASP.NET<br>• Successful students will be able to use ASP.NET controls in web applications.<br>• Successful students will be able to debug and deploy ASP.NET web applications<br>• Successful students will be able to create database driven ASP.NET web applications and web services |
| | BCA55 Practical on Soft Skills Development | • Apply the principles of effective communications in learning/working situations; |

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| | | • Apply the principles and knowledge of effective time-, stress-, conflict management in<br>• Learning/working situations; Develop or improve skills for working effectively in a team, including negotiating and setting<br>• Goals, meeting deadlines and giving and receiving feedback;Use the self and peer evaluation to measure and improve the level of development of their soft |
| | BCA56 Practical on ASP.net & Linux O.S. | • ASP.net<br>• Create a Web form with server controls.<br>• Separate page code from content by using code-behind pages, page controls, and components.<br>• Display dynamic data from a data source by using Microsoft ADO.NET and data binding.<br>• Debug ASP.NET pages by using trace.<br>• Linux O.S<br>• Choose appropriate UNIX/Linux operating system commands to make effective use of the environment to solve problems<br>• Write efficient, effective scripts with documentation<br>• Research the Internet for information and resources utilizing new commands |
| | BCA57 Field Work | • Develop and understand field work concept<br>• Students will learn in teams to complete a Group Field Work, Individual Field Work , |
| | BCA61 Introduction to ERP and SAP | • To comprehend the technical aspects of ERP systems;<br>• To understand concepts of reengineering and∗ how they relate to ERP system implementations;<br>• To be able to map business processes using process mapping techniques & identify and describe typical∗ functionality in an ERP system;<br>• To understand the steps and activities in the∗ ERP life cycle;<br>• To obtain practical hands-on experience with∗ one of the COTS ERP Software e.g. SAP, Oracle |
| | BCA62 System Analysis And Design | • Develop the software projects or prototypes by understanding the requirements.<br>• Meet the project deadlines along with the number of resources and type of tasks to be carried out |
| | BCA63 Server Side Scripting using PHP | • Students should be able to create database using PHP and MYSQL<br>• Program for different applications using arrays, functions and strings.<br>• Aware about different web techniques used in PHP.<br>• Integrate PHP with MYSQL |
| | BCA64 Introduction to Information System Audit | • Identifying business risks, strengths, and opportunities for improvement.<br>• Evaluating employees' awareness of, and compliance with, University policies and procedures and applicable laws and regulations<br>• 3.Facilitating discussions with department employees to develop solutions to problems and promote operational efficiency, including the automation of procedures and the elimination of redundant or burdensome controls<br>• Identifying deviations from management's standards and expectations<br>• Assessing whether resources are used adequately and efficiently. |
| | BCA65 Practical on PHP | • Understand how PHP works with lexical structure of it.<br>• Program for different applications using arrays, functions and strings.<br>• Aware about different web techniques used in PHP.<br>• Integrate PHP with MYSQL. |
| | BCA66 Practical on CASE Tool with MS VISIO | • Utilize Visio to plan, design, create, save, and print the following types of diagrams: |

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| | | • Flow charts, organization charts, project schedule diagrams including timelines and Gantt charts, network and telecommunications diagrams, office space diagrams, building plans.<br>• Apply the following Visio features to create diagrams and charts:Templates and stencils; shapes, lines, connectors, text blocks; backgrounds, borders, titles; page setup, preview, and printing options; custom shape properties.<br>• Use the Request for Proposal (RFP) process by responding to an actual technical RFP in a case study approach using both technical and cost estimation concepts. |
| | BCA67 Project | • Develop and understand project concept.<br>• Students will learn how to work in teams to complete a Group Project, Individual Project , Advanced Project. |

| **Department of Botany** | | |
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| Class | Course | Outcomes |
| F.Y.B.Sc. | BOT. -101 Paper-I: Microbial Diversity, Algae & Fungi | • Students will know the diversity among Microbes.<br>• Students will study systematic, morphology and structure of Bacteria, Viruses, Algae and Fungi.<br>• Students will study the life cycle pattern of Bacteria, Viruses, Algae and Fungi.<br>• Students will study the useful and harmful activities of Bacteria, Viruses, Algae and Fungi. |
| | BOT. -102 Paper II: Plant Taxonomy | • Students will study the diversity of angiosperms.<br>• Students will study the comparative account among the families of angiosperms.<br>• Students will know the economic importance of the angiospermic plants.<br>• Students will study the distinguishing features of angiosperm families. |
| | BOT.-201 Paper I: Diversity of Archegoniate | • Students will study salient features of Archegoniate.<br>• Students will aware about the status of higher cryptogams& gymnosperms as a group in plant kingdom.<br>• Students will study the life cycles of selected genera of Archegoniate.<br>• Students will know economic and ecological importance of Archegoniate. |
| | BOT.-- 202 Paper-II: Plant Ecology | • Students will know scope and importance of the discipline<br>• Students will study plant communities and ecological adaptations in plants.<br>• Students will know about conservation of biodiversity.<br>• Students will study the botanical regions of India and vegetation types of Maharashtra. |
| S.Y.B.Sc. | BOT - 301 Paper-I: Plant Anatomy | • Students will know scope and importance of plant anatomy<br>• Students will study various tissue systems<br>• Students will know primary structure of dicot and monocot plants<br>• Students will study normal secondary growth in plants and their causes<br>• Students will study protective tissue system |
| | BOT.302 Paper – II: Plant Physiology | • Students will know importance and scope of plant physiology.<br>• Students will study plant and plant cell in relation to water.<br>• Students will study different process in relation with structure of organism and its environment.<br>• Students will understand mechanism of absorption of water, gases and solutes.<br>• Students will understand growth at various level. |
| | BOT. 304 Paper – IV: Mushroom Culture Technology Skill Enhancement Course (SEC) | • Students will learn the history, scope and importance of mushroom technology<br>• Students will understand nutritional and medicinal values of edible mushrooms |

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| | | • Students will know about the storage, marketing and various food preparations of mushrooms.<br>• Students will understand the economics of mushroom cultivation. |
| S.Y.B.Sc. | BOT.- 401 Paper- I: Plant Embryology | • Students will know the scope and Importance of Embryology<br>• Students will study structure of micro and megasporangium.<br>• Students will study pollination, fertilization, Endosperm and Embryogeny.<br>• Students will give exposure of techniques in embryology |
| | BOT.- 402 Paper- II: Plant Metabolism | • Students will know the scope and importance of plant metabolism.<br>• Students will study the properties, mechanism and classification of enzymes.<br>• Students will study the process of photosynthesis in higher plants, C3, C4 and CAM pathways.<br>• Students will study respiration in higher plants. |
| | Paper – IV Skill Enhancement Course (SEC)<br>BOT. 304: Mushroom Culture Technology | • Students will learn the history, scope and importance of mushroom technology<br>• Students will understand nutritional and medicinal values of edible mushrooms<br>• Students will know about the storage, marketing and various food preparations of mushrooms.<br>• Students will understand the economics of mushroom cultivation. |
| | BOT. - 401 Paper- I: Plant Embryology | • Students will know the scope and Importance of Embryology<br>• Students will study structure of micro and megasporangium.<br>• Students will study pollination, fertilization, Endosperm and Embryogeny.<br>• Students will give exposure of techniques in embryology |
| | BOT.- 402 Paper- II: Plant Metabolism | • Students will know the scope and importance of plant metabolism.<br>• Students will study the properties, mechanism and classification of enzymes.<br>• Students will study the process of photosynthesis in higher plants, C3, C4 and CAM pathways.<br>• Students will study respiration in higher plants. |
| T.Y.B.Sc. | BOT. - 501 Paper – I: Lower Cryptogams | • Students will study salient features of Cryptogamic plants.<br>• Students will make students aware of the status of cryptogams as a group in plant kingdom<br>• Students will study the life cycles of selected genera.<br>• Students will study economic and ecological importance of Cryptogamic plants. |
| | BOT.- 502 Paper-II: Morphology and Systematics Angiosperm Taxonomy | • Students will study status of angiosperms in plant kingdom<br>• Students will study origin of Angiosperms with respect to time, place, origin and probable ancestors.<br>• Students will study vegetative and floral morphology of angiospermic plants.<br>• Students will study various angiosperm families emphasizing their morphology, distinctive features and biology.<br>• Students will know the role of anatomy and embryology in Taxonomy. |
| | BOT. – 503 Paper- III: Cell Biology and Genetics | • Students will introduce with "Cell Biology and Genetics".<br>• Students will study the Prokaryotic and eukaryotic cell.<br>• Students will know the scope and importance of cell biology.<br>• Students will study linkage and crossing over. |
| | BOT. 504, Paper-IV Plant Physiology and Biochemistry | • Students will learn and understand about growth pattern in plants.<br>• Students will study the different types of movements in plants.<br>• Students will know the phenomenon of photoperiodism and effect of phytochrome on flowering.<br>• Students will study the process of translocation of organic solutes in plants<br>• Students will study the vernalization process.<br>• Students will study the biomolecules in plants. |

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| | | • Students will study secondary metabolism and their role in plants. |
| | BOT.505, Paper-V-Biofertilizers | • Students will know importance of biofertilizers.<br>• Students will introduce application of Biofertilizer technology in Agriculture.<br>• Students will familiarize with microbes used as biofertilizers.<br>• Students will demonstrate the low-cost media preparation and cultural practices in biofertilizers.<br>• Students will aware about benefits of applications of biofertilizer<br>• Students will know about self-employment opportunities. |
| | BOT. 506 (B) Paper -VI Horticulture | • Students will know about horticulture, it's scope, discipline and importance.<br>• Students will understand different horticultural practices and their methods.<br>• Students will study importance, principles and types of Bahar treatment.<br>• Students will learn the role played by green and poly houses in horticulture.<br>• Students will understand methods of preservations and preparations of preserved products. |
| | BOT-601: Paper I- Higher Cryptogams | • Students will study salient features of cryptogamic plants.<br>• Students will make aware about the status of cryptogams as a group in plant kingdom.<br>• Students will learn the life cycles of selected genera.<br>• Students will learn economic importance of cryptogamic plants. |
| | BOT-602: Paper II- Gymnosperms & Paleobotany | • Students will study Gymnosperms with respect to distinguishing characters, comparison with Angiosperms, economic importance and classification.<br>• Students will study the life cycles of *Pinus* and *Gnetum*.<br>• Students will study the scope of Paleobotany, types of fossils and geological time scale.<br>• Students will study the various fossil genera representing different fossil groups. |
| | BOT. 603: Paper-III Molecular Biology | • Students will study molecular biology in relation to genetic material, its inheritance, modification, and replication.<br>• Students will get information about the mitochondria and chloroplast DNA.<br>• Students knows about transcription, translation post translation modification of protein.<br>• Students will learn gene regulation in prokaryotes and eukaryotes. |
| | BOT : 604 Paper - IV Economic Botany | • Students will know about useful bio resources of prime importance to mankind.<br>• Students will acknowledge about various groups of the world as well of India.<br>• Students will know about botanical, chemical and nutritional values and values additions of food grains, legumes, sugars, vegetable, fruits, species, etc.<br>• Students will reveal new vis-à-vis forgotten food sources and their current practices.<br>• Students will know the general account and uses of rubber, fiber and timber |
| | BOT- 605 Paper- V Floriculture | • Students will know about floriculture, its scope and importance.<br>• Students will know the commercial floriculture.<br>• Students will study the different features of garden.<br>• Students will study methods of propagation.<br>• Students will get information diseases and pests of ornamental plants. |
| | 606 BOT Paper – VI Plant Breeding | • Students will introduce with the science of plant breeding.<br>• Students will introduce with the branch of plant breeding for the survival of human being from starvation.<br>• Students will learn the different methods of crop improvement.<br>• Students will study the techniques of production of new superior crop verities. Know scope and importance of plant protection. |

| DEPARTMENT OF CHEMISTRY | | |
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| Class | Course | Outcomes |
| F.Y. B.Sc. | CH- 101: Physical and Inorganic Chemistry | • Develop an ability to use conceptual and mathematical tools to express and predict atomic and molecular behaviour<br>• Understand various gas laws, Kinetic theory of gases, Chemical bonding or molecular geometry based on accepted models.<br>• Convert scientific equation in straight line to get physical parameter for slope and intercept.<br>• Understand deviation of real gas from ideal behavior using compressibility factor.<br>• Understand critical constant ,vander Waal s constant and relation between them. |
| | CH-102: Organic and Inorganic Chemistry | • Learn the general properties of organic compounds, applications of organic compounds.<br>• Gain the Knowledge of Common and IUPAC nomenclature of various type of organic compound.<br>• Learn the alkane, alkene and alkyne by many organic reaction.<br>• Understand of S- block Elements of alkali metals and Alkaline earth metals<br>• Learn the Arrhenius theory, Bronsted- Lowry theory and Lewis theory.<br>• Understand ionic product of water, Buffer solutions. |
| | CH-103: Chemistry Practical | • Calibrate the apparatus like volumetric flask, pipette and burette.<br>• Understand the determination of heat of solution, equivalent weight, surface tension etc.<br>• Carry out qualitative analysis of acidic and basic radicals.<br>• Learn the applications of types of titrations for various estimations<br>• Carry out quantitative analysis by gravimetric method<br>• Carry out quantitative analysis by volumetric method |
| | CH-201: Physical and Inorganic Chemistry | • Understand concept of First law and Second law of thermodynamics.<br>• To learn about spontaneous and non-spontaneous process, Entropy concept and its significance<br>• To understand specific and equivalent conductance with their inter relationship.<br>• To understand cell constant and use of it to obtain specific and equivalent conductance.<br>• To know Kolhaurash s law and application of it.<br>• To understand the term surface tension and viscosity of liquids. |
| | CH-202: Organic and Inorganic Chemistry | • Gain the Knowledge of preparations, reactions and properties of Mono-halogen and Di-halogen derivatives of Alkane.<br>• Gain the Knowledge of preparations, reactions and properties of Alcohol, Ether and Epoxide.<br>• Gain the Knowledge of preparations and reactions of carbonyl group.<br>• Gain the Knowledge of preparation of carboxylic acids.<br>• How to determine the Molecular weight, formula weight, equivalent weight of organic compounds.<br>• Understand the Electronic structures, size of atoms and ions, ionization energy, metallic and nonmetallic of p block elements. |
| | CH-203: Chemistry Practical | • Handle viscometer to determine the viscosity and relative viscosity of liquids.<br>• Carry out quantitative analysis by instrumental method using Conductometer.<br>• Estimate of aniline / phenol.<br>• Perform qualitative analysis of organic compounds.<br>• Carry out quantitative analysis by volumetric method and gravimetric methods |

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| SY B.Sc. | CH 301: Physical and Inorganic chemistry | • Understand the Electronic structures, size of atoms and ions, ionization energy, metallic properties and non-metallic properties of d block elements.<br>• Understand concept of Helmolthz free energy<br>• Understand numerical calculations of Gibbs free energy.<br>• Understand concept of vapor pressure of liquids.<br>• Understand the concept of physical properties of metals<br>• Learn methods of purification of ores. |
| | | • Study of stereoisomerism<br>• Study of amines their formation reactivity.<br>• Study of reactivity, preparation and reactions of organo Li, Cu, Zn compounds.<br>• Understand the importance of analytical chemistry in analysis of compounds by titrimetric,gravimetric and instrumental methods.<br>• Gain the Knowledge of sampling methods and ways of interpretation of results of analysis.<br>• Determine the causes of errors and their minimization during analysis<br>• Learn the application of types of titrations for quantitative analysis of the samples. |
| | CH 303: Chemistry Practical: | • To know the various techniques chromatography for separation of components in the mixture.<br>• Understand recrystallization for purification of organic compounds.<br>• Prepare various inorganic complexes.<br>• Analysis of compounds by titrimetric, gravimetric and instrumental methods.<br>• Understand to determine thermodynamic parameter. |
| | CH-304 Basic Analytical Chemistry (SEC I) | • Understand Basics of Analytical Chemistry<br>• Study the Techniques to perform Acid-Base Precipitation titrations<br>• Understand the Chromatography and Chromatographic techniques |
| | CH 401 Physical and inorganic chemistry | • Understand colligative properties and its application calculation of molecular weight of solutes<br>• Understand concept of electromotive force and its measurement<br>• Understand about properties of Lanthanides and actinides.<br>• Understand concept of s-s, s-p, p-p, p-d & d-d combination of orbitals.<br>• Understand about classification of electrodes. |
| | CH 402: Organic and Analytical chemistry | • Learn the synthesis and reaction of 5, 6 member and condensed heterocyclic systems.<br>• Understand the synthesis of synthetic reagents and their synthetic utility.<br>•To know the mechanism and stereochemistry of E1, E2 reaction.<br>• Understand the concept of quantitative analysis by gravimetric methods.<br>• Gain the Knowledge of concept for separation of analytes in samples by thin layer, paper and column chromatographic methods. |
| | CH 403: Chemistry Practical: | • Carry out qualitative analysis of organic compounds.<br>• Determine molecular weight by depression of freezing point method.<br>• Handle Landsbergers apparatus for determination of molecular weight.<br>• Estimation of Nickel and Barium gravimetrically.<br>• Make use of potentiometer for determination of standard electrode potential |
| | CH-404 Advanced Analytical Chemistry (SEC II) | •Understand Basics of Advance Analytical Chemistry<br>•Study the Techniques to perform Redox and Complexometric titrations<br>•Understand the Chromatography and Chromatographic techniques |
| T.Y. B.Sc | CH 351: Physical Chemistry | •Learn the concept of Radioactivity and its application in various field |

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| | | • Understand the importance of salt bridge in electrochemical cell.<br>•Gain knowledge of Phase rule and its application to water and sulphur system<br>• Understand the concept electrochemical cell and determination of potential of cell<br>• Understand the laws of photochemistry (Grothus Draper Law and Stark Einstein law)<br>• Understand the concept quantum yield and fluoresce and phosphorescence from Jalblonski diagram.<br>• Understand the various devices to measure the radiation from radioactive sample. |
| | CH-352: Inorganic Chemistry | • Learn the basic concept of the co-ordination compound, and identify the types of given ligand, chelates.<br>• Understand the different physical method for the study of complexes and main points of Werner theory and isomerism in coordination compounds.<br>• Understand Effective atomic number (EAN) and how to calculate EAN for any given complexes.<br>• Understand the modern theories of metal-ligand bond related to valence bond theory.<br>• Application of CFT related to different geometry e. Square planer, tetrahedral, Octahedral.<br>• Understand the basic concept about CFT e. Spin magnetic moment, crystal field stabilization energy related to weak and strong field, limitation of theory.<br>• Understand assumption and applications of V. B.T., C.F.T. and M.O.T. |
| | CH-353: Organic Chemistry | • Study structural effects<br>• Study concept of aromatic electrophilic and nucleophilic aromatic substitutions<br>• To study electrophilic aromatic addition to c=c<br>• Learn rearrangement reactions. |
| | CH-354: Analytical Chemistry | • Understand procedure of extraction of metal ions using Solvent Extraction process.<br>• Understand the application of Ion Exchange Chromatography method for the separation of cations and anions using different types of resins.<br>• Understand applications of Size Exclusion Chromatography for the separation of analytes based on their size and shapes.<br>• Understand the working of Gas Chromatographic unit and apply the knowledge to separate volatile compounds in sample.<br>• Understand Principle, choice of column materials for HPLC and its application.<br>• Understand Principles of Electrophoresis and choice of techniques of electrophoresis for various applications |
| | CH-355: Industrial Chemistry | • Understand general concept of Industrial chemistry.<br>• Understand manufacturing of sugarcane.<br>• Understand general idea of differ physical methods used in manufacturing.<br>• Understands various types of fertilizer.<br>• Understand manufacturing of Beer and spirit.<br>• Understand the aspects of small scale industry. |
| | CH 356: A Biochemistry | • Learn the classification of carbohydrates and their reactions.<br>• To gain the basic concept of amino acid and Proteins<br>• Understand the classification of Enzymes<br>• Understand the concept and classification of Lipids and their uses<br>• Gain knowledge of nucleic acids DNA and RNA<br>• Study of energy rich compounds<br>• Study of carbohydrate, amino acid and lipid metabolism |
| | CH-357,367: Physical Chemistry Practical | • Prepare molar and normal solutions of various concentrations.<br>• Determine concentration of unknown solutions by Spectrophotometric method. |

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| | | • Measure the pH, pKa and Ka of various acids by potentiometry.<br>• Measure refractive index, molar refraction and unknown concentration of various solvents.<br>• Determine the molecular weight of a given polymer by turbidimetry.<br>• Investigate the reaction rate. |
| | CH 358,368: Inorganic Practical | • Estimate ores and alloy by gravimetric and volumetric method.<br>• Separate and analyze binary mixtures by qualitative method<br>• Prepare and determine percent purity of various inorganic complexes.<br>• Perform chromatographic technique (paper chromatography).<br>• Estimate Lead, Iron by gravimetric method.<br>• Estimate Titanium and Iron by Spectrophotometric method. |
| | CH 359,369: Organic practical: | • Separate and analyze binary water insoluble mixture<br>• Separate and analyze binary water soluble mixture<br>• Learn how to estimate –sap value of oil, acetamide, glycine and glucose by volumetric method<br>• Learn how to estimate basicity of various acids.<br>• Learn how to synthesis various organic compounds.<br>•Learn technique of recrystallisation. |
| T.Y. B.Sc | CH-361: Physical Chemistry. | • Understand the types of spectra, Rotational, Vibration and Electronic energy levels.<br>• Difference between order and Molecularity<br>• Understand the first, second and third order reaction.<br>• Understand the concept anisotropic, isotropic, etch figure, polymorphism, Bragg relation<br>• Learn concept Photoelectric effect, Compton Effect and Heisenberg s uncertainty principals.<br>• Understand the concept of X- ray analysis. |
| | CH-362: Inorganic Chemistry | • Understand the electronic structure, Extraction uses, oxidation states biological role of Cu.<br>• Know about the all basic theory of Acid and bases.<br>• Understand the concept of Hard and Soft acid bases concept theories, application and limitations.<br>• Know the different types and theories of Corrosion and how to protect Metal from corrosion. |
| | CH-363: Organic Chemistry | • Understands common terms in spectroscopy.<br>• Learn Physical methods of structure determination which includes IR, UV and NMR.<br>• Solve the problems based on IR, UV and NMR.<br>• Study of retro synthesis.<br>•Study the Natural products viz. alkaloid and terpenoid. |
| | CH-364 Analytical Chemistry | • Perform the analysis of samples using instrumental methods<br>• Understand the concepts of spectrometry, know the principles of instruments and their applications<br>• Understand principle, working and applications of Flame and Plasma Emission Spectrometry.<br>• Understand principle, Instrumentation and application of Atomic Absorption Spectrophotometry<br>• Understand principle, Instrumentation and applications of Turbidimetry and Nephelometry.<br>• Understand principle, Instrumentation and applications of thermogravimetric methods like TGA, DTA and DSC. |
| | CH-365: Industrial Chemistry | • Understand the process of manufacturing of petrol and gasoline.<br>• Understand the process of manufacturing of methanol.<br>• Understand the process of manufacturing of soap.<br>• Understand the process of manufacturing of detergents.<br>• Understand classification of dyes and paints.<br>• Understand properties of drugs. |
| | CH 366: Polymer Chemistry | • Understand the basic concepts of polymerization. |

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| | | • Understand the different methods of polymerization.<br>• Understand various techniques of polymerization.<br>• Understand the preparation, properties and applications of PE, PVC, Polystyrene, polyacrilonytrile,<br>• Understand the concept Glass transition temperature |

## Department of Computer Science

| Class | Course | Outcomes |
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| F.Y.B.Sc. | DSC 1 A: CS 101: Essential of Computer Science | • Understand the fundamental components of computer System.<br>• Understand the basic concepts of computer network.<br>• Aware about various types of computer viruses and their types.<br>• Understand several types of operating systems. |
| | DSC 1 A: CS 102: C Programming-I | • Understand history of C programming language and its applications.<br>• Be familiar with programming environment with C Program structure.<br>• Declare variables and constants and use them.<br>• Understand operators, expressions, conditional statements and preprocessors.<br>• Understand arrays, it's declaration and uses.<br>• Develop their programming skills. |
| | DSC 1 B: CS 201: Internet Computing | • Understand the types of Website, it's structure, Site Organization Model, site planning<br>• and testing.<br>• Understand Web design process.<br>• Know the different page types on websites and its navigations.<br>• Design website using HTML language.<br>• Design advanced website using CSS. |
| | DSC 1 B: CS 202: C Programming-II | • Design programs using Functions, Pointers, Structures and Unions in C language.<br>• Write the programs using File Handling concepts.<br>• Write the programs for drawing different graphical shapes. |
| | CS LAB: DSC 1A LAB: Lab Course on Essential of Computer and C Programming CS-103 and 203 LAB Course on Paper I&II | • students are able to develop programs using C to meet real world<br>• need and able to develop their own websites.<br>• This course provides platform to enhance student's<br>• basic skills required for advanced programming. |
| S.Y.B.Sc | CS-DSC 2 C: COMP 211: Data Structure – I | • Know what is data structure and basic algorithmic notations.<br>• Analyze the time and space requirement of any algorithm.<br>• Understand different data structures like stack, queue and linked list, they can also be<br>• aware about the types, applications and operations of these data structures.<br>• Effectively use of the above mentioned data structures depending upon the data of the<br>• application. |
| | CS-DSC 2 C: COMP-212: Programming in C++-I | • Understand basic concepts of C++ programming like data types, keywords, operators and<br>• manipulators.<br>• Be familiar with classes and objects, and Object Oriented Programming Environment.<br>• Understand concepts of Functions in C++ and use them in programs.<br>• Know function and operator overloading in C++ and effectively use them in programs. |

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| | CS SEC-I (Skill Enhancement Course-I): Software & Hardware Installation Skills | • Install Operating System on computer.<br>• Perform various types of Software and device installation.<br>• Diagnostic Tools & PC Maintenance.<br>• Setup Basic Network in a lab. |
| | CS-DSC 2 D: COMP-211: Data Structure – II | • Know different non-linear data structures that can be used to represent hierarchical<br>• relationship between objects. |
| | | • Traverse and represent the graphs in computer.<br>• Understand the different approaches of sorting and searching elements in the arrays. |
| | CS-DSC 2 D: COMP-222: Programming in C++-II | • Define and use constructors and destructors in their programs.<br>• Create classes using the concepts of inheritance.<br>• Deal with runtime error by using several exception handling mechanisms.<br>• Write generic programs using templates and STL.<br>• Use files for storing and retrieving data. |
| | CS SEC-II (Skill Enhancement Course-II): Network Security | • Understand need, approaches and principles of security.<br>• Understand types of Malicious Software, Viruses, Firewall.<br>• Categorized several types of attacks.<br>• Learn Intrusion Detection System and system security. |
| | CS-DSC 2 D: Lab Course on COMP 223: Practical Course | • students are able to develop programs using C++ based on.<br>• The concepts of object-oriented programming.<br>• Students can also able to develop the programs related to several data structures like stack, queue, linked list, tress and graphs. |
| T.Y.B.Sc | DSC (UG-CS-501) System Programming | • Understand details about system software<br>• To do basic system program like development of editors lexical analyzers etc<br>• Students are familiar with language processing activities- functions of translators, loader<br>• and linkers. |
| | DSC (UG-CS-502): Database Management System | • Solve real world problems using appropriate set, function, and relational models.<br>• Design E-R Model for given requirements and convert the same into database tables.<br>• Use SQL. |
| | DSC (UG-CS-503) Software Engineering | • Students are able to perform the E-R Diagram, DFD, Data dictionary, Decision tree about<br>• software.<br>• They can also design the software in learned language using the course content.<br>• Get the knowledge of types of testing & how testing is performed in industry. |
| | DSC (UG-CS-504): Computer Aided Graphics | • Differentiate between interactive and non-interactive graphics.<br>• Study line Drawing and Circle Drawing techniques and algorithms.<br>• Perform 2D and 3D transformation on different images.<br>• Know about detail working of 2D and 3D clipping and windowing.<br>• Understand raster graphics and hidden surface elimination |
| | DSC SEC(UG-CS-505) Python Programming – I | • Explain basic principles of Python programming language<br>• Construct and apply various filters for a specific task.<br>• Apply the best features of mathematics, engineering and natural sciences to program real<br>• life problems. |
| | DSC (UG-CS-506 A): Elective A - Internet Programming using PHP | • To Design dynamic and interactive Web pages.<br>• PHP framework for effective design of web applications. |

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| | DSC (UG-CS-506B): JAVA Programming I | • Get knowledge of JDK environment<br>• Explore polymorphism using method overloading and method overriding<br>• Understand the different aspects of hierarchy of classes and their extensibility<br>• Understands the concept of streams and files<br>• Write programs for handling run time errors using exceptions |
| | DSC (UG-CS-601): Operating System | • Students should familiar with Operating System Services.<br>• Understand CPU scheduling algorithms, memory Management Techniques, Disk Drum Scheduling algorithms, Deadlock preventions and avoidance.<br>• Introduction to android operating systems – its architecture, applications and uses. |
| | DSC (UG-CS-602): Relational Database Management Systems | • Design E-R Model for given requirements and convert the same into database tables.<br>• Use database techniques such as SQL & PL/SQL.<br>• Explain transaction Management in relational database System.<br>• Use advanced database Programming concepts |
| | DSC (UG-CS-603): Computer Network | • Students understand the information exchange done across the network with the help of OSI & TCP/IP models.<br>• Student understands how errors are captured & handled in network.<br>• Student understands various attack & its prevention techniques. |
| | DSC (UG-CS-604): Theoretical Computer Science | • Understanding the use of Sets, Relations and Graphs.<br>• Understand Languages in TCS.<br>• Introduction of Regular Languages and Expressions.<br>• Understanding Pumping Lemma and its applications.<br>• Explore the knowledge of Pushdown Automata.<br>• Understanding Normal Forms with Examples.<br>• Understanding Turing Machine. |
| | DSC (UG-CS-605) Python Programming – II | • Explain basic principles of Python programming language<br>• Implement object-oriented concepts, database applications.<br>• Construct regular expressions for pattern matching and apply them to various filters for a<br>• specific task.<br>• Design and implement Database Application and Content providers.<br>• Apply the best features of mathematics, engineering and natural sciences to program real<br>• life problems. |
| | DSC (UG-CS-606 A): Elective A - Web Programming using ASP.NET | • Upon completion of this course the students should be able to understand the .NET<br>• framework ·<br>• Develop a proficiency in the ASP.NET ·<br>• Develop ASP.NET web applications on any given scenario. |
| | DSC (UG-CS-606 A): Elective B - JAVA Programming II | • Program using graphical user interface with Swing classes<br>• Handle different kinds of events generated while handling GUI components<br>• Create programs using menus and dialog boxes<br>• Program to create applets<br>• Understand advanced java concepts like JDBC, Java Beans |

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| M.Sc. -I | CS-101 Advance C++ Programming | • Understand advanced concepts for handling runtime errors using stack unwinding, uncaught exception and automatic clean-up.<br>• Study the Runtime Type Information of the member variables, functions and the multiple inheritance that are used in the program.<br>• Study advanced concepts of C++ by resolving ambiguities and duplicate sub object in virtual base classes.<br>• Understand applications of C++ like Smart Pointer, Generic Pointer, Object<br>• Validation and Reference Counting. |
| | | • Understand detail concepts of STL |
| | CS-102 Automata Theory and Computability | • Understand what is Push down Automata and its applications<br>• Design Turing Machines for various applications like emunerator, function<br>• computer and universal turing machine.<br>• Study Post correspondence problem, decidability of membership, emptiness and<br>• equivalence problems of natural languages.<br>• Get familiar with Computability and complexity measures.<br>• Understand what is DNA and Membrane Computing. |
| | CS-103 Advanced Operating System | • Master functions, structures and history of operating systems<br>• Master understanding of design issues associated with operating systems<br>• Master various process management concepts including scheduling, synchronization,<br>• deadlocks<br>• Be familiar with multithreading<br>• Master concepts of memory management including virtual memory<br>• Master system resources sharing among the users<br>• Master issues related to file system interface and implementation, disk management<br>• Be familiar with protection and security mechanisms<br>• Be familiar with various types of operating systems including Unix |
| | CS-104 Digital Image Processing | • Analyze general terminology of<br>• digital image processing.<br>• Examine various types of images, intensity transformations and spatial filtering.<br>• Develop Fourier transform for image processing in frequency domain.<br>• Evaluate the methodologies for image segmentation, restoration etc.<br>• Implement image process and analysis algorithms.<br>• Apply image processing algorithms in practical applications.<br>• Understand the application of digital image processing.<br>• Explore knowledge about image processing fundamentals.<br>• Get aware about image sampling and quantization and operation on images<br>• Understand histogram processing and various image filtering algorithms.<br>• Know about various noise models and transformation techniques.<br>• Be aware of various morphological techniques and segmentation schemes. |
| | CS-105- LAB - I Lab on Advanced OS and Digital Image Processing | • Get hands on various linux commands and shell script for different application.<br>• Familiar with MATLAB environment.<br>• Explore various algorithms for digital image processing using MATLAB. |
| | CS -106-LAB - II Lab on Advanced C++ Programming | • students are able to develop ROBUST, EXTENSIBLE and EFFICIENT programs using advanced concepts of STL in C++. |

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| | CS-201- Advanced DBMS | • Master the basic concepts and appreciate the applications of database systems.<br>• Master the basics of SQL and construct queries using SQL.<br>• Be familiar with a commercial relational database system (Oracle) by writing SQL using the system.<br>• Be familiar with the relational database theory, and be able to write relational algebra expressions for queries.<br>• Mater sound design principles for logical design of databases, including the E- R method and normalizationapproach. |
| | | • Be familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B- tree, and hashing.<br>• Master the basics of query evaluation techniques and query optimization.<br>• Be familiar with the basic issues of transaction processing and concurrency control.<br>• (optional) Master working successfully on a team by design and development of a<br>• database application system as part of a team. |
| | CS-202 Machine Intelligence | • List the objectives and functions of modern Artificial Intelligence<br>• Categorize an AI problem based on its characteristics and its constraints.<br>• Understand and implement search and adversarial (game) algorithms.<br>• Understand mathematical models such as belief networks and Markov decision processes and apply them to a range of AI problems.<br>• Have a glance at machine learning algorithms and extracting knowledge models from<br>• data.<br>• Learn different logic formalisms and decision taking in planning problems.<br>• Learn how to analyze the complexity of a given problem and come with suitable optimizations.<br>• Demonstrate practical experience by implementing and experimenting with the learnt algorithms. |
| | CS-203 Compiler Construction | • Master using lexical analyzer and parser generator tools.<br>• Master building symbol tables and generating intermediate code.<br>• Master generating assembly code for a RISC machine.<br>• Master programming in Java.<br>• Be familiar with compiler architecture.<br>• Be familiar with register allocation.<br>• Be exposed to compiler optimization. |
| | CS-204 Design and Analysis of Algorithms | • Design efficient algorithms using various algorithm designing techniques.<br>• Comprehend dynamic programming using control abstraction and longest<br>• common subsequence.<br>• Classifying any problem as NP complete and NP hard |
| | CS-205- LAB - III Lab on DAA and MI | • Students are able to build the program that can solve the problems which requires intelligence to solve them. They can build programs which can generate output in less time and execute in less space |
| | CS -206-LAB - IV Lab on Advanced DBMS | • students are able to build and maintain the databases handling real life applications and daily needs. |
| M.Sc.-II | CS-301 Software Engineering | • Know the requirements of developing software.<br>• Be aware of various models required for software development.<br>• Test the developed software for its functionality and performance.<br>• Understand software quality and quality measures.<br>• Grasp the software configuration management and project planning. |

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| | CS-302 Optimization of Algorithm | • Upon successful completion of this course, students will be able to formulate optimization problems;<br>• Understand and apply the concept of optimality criteria for various type of optimization problems;<br>• Solve various constrained and unconstrained problems in single variable as well asmultivariable;<br>• Apply the methods of optimization in real life situation.<br>• Understanding classification and limitation of quantitative techniques.<br>• Take hold of linear programming problem solving techniques.<br>• Solve various kinds of transportation problems using different techniques. |
| | | • Explore concepts in game theory |
| | CS-303 -Internet Computing | • Upon successful completion of the course, the student will demonstrate the ability to:<br>• Understand the major areas and challenges of web programming.<br>• Distinguish web-related technologies.<br>• Use advanced topics in HTML5, CSS3, JavaScript<br>• Use a server-side scripting language, PHP<br>• Use a relational DBMS, MySQL<br>• Use PHP to access a MySQL database<br>• Design and implement<br>• Typical static web pages and interactive web applications.<br>• Dynamic web applications.<br>• Web applications that use asynchronous communication.<br>• Secure 3-tier data-driven web applications. |
| | CS-304 Windows and Visual C++ Programming | • Demonstrate fundamental skills in utilizing the tools of a visual environment in terms of the set of available command menus and toolbars<br>• Explain and use of delegates and events for producing event-driven application<br>• Implement SDI and MDI applications while using forms, dialogs, and other types of GUI components<br>• Produce and use specialized new GUI components<br>• Explain message passing mechanism between components and threads using messaging<br>• Apply visual programming to software development by designing projects with menus and submenus<br>• Use visual programming environment to create simple visual applications Course Content<br>• Review of object-oriented programming, |
| | CS-305-LAB – V Lab on Windows Programming and VC++ | • On completion of the course, students are able to develop program having graphical user interface for various applications. |
| | CS -306-LAB –VI Lab on Internet Computing | • Create PHP scripts that:<br>• display static and dynamic content<br>• send e-mail<br>• read and write data files<br>• connect to various databases<br>• create and populate database tables<br>• provide user authentication<br>• track users<br>• manage sessions and<br>• provide simple web-based database administration.<br>• Create a web-based system (such as a shopping system).<br>• Test and debug PHP scripts. |

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| | CS-401 Natural Language Processing | • Understand languages and linguistic background<br>• Be familiar with applications and research background in NLP.<br>• Grasp mathematical foundation related to NLP like probability, bays theorem and machine learning.<br>• Know about linguistics essentials and grammar as part of speech and parsing and differentiating them.<br>• Aware about word morphology and N-Gram Models. |
| | CS-402 Advance Network Programming | • Understand network fundamentals with TCP/IP architecture.<br>• Aware with client server programming and its application using socket interface. |
| | | • Understand IGMP ICMP and IP datagrams<br>• Understating the mobile and advoc network programming. |
| | CS-403 -Data Mining | • Understand data warehousing for business analysis using OLAP, OLTP, MOLAP and ROLAP.<br>• Explore the concepts of data mining and data pre-processing.<br>• Understand concept of association rule mining.<br>• Grasp classification and prediction and analyze different issues related to them.<br>• Identify different cluster analysis techniques.<br>• Know about advanced data mining techniques such as spatial data mining and<br>• Understand the concept of big data analysis. |
| | CS -405 Mini Project (200 marks) | • Deal with real world data.<br>• Familiar about real time IT industry environment.<br>• Experience about applying the knowledge they got until now.<br>• Build a whole real time working system which will satisfy all customer's needs. |

| **Department of Mathematics** | | |
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| Class | Course | Outcomes |
| FYBSc | MTH 101: Matrix Algebra | • Upon successful completion of this course the student will be able to :<br>• Understand concepts on matrix operations and rank of the matrix.<br>• Understand use of matrix for solving the system of linear equations.<br>• Understand basic knowledge of the eigen values and eigen vectors.<br>• Apply Cayley-Hamilton theorem to find the inverse of the matrix.<br>• Know the matrix transformation and its applications in rotation, reflection,translation. |
| | MTH 102: Calculus | • Upon successful completion of this course the student will be able to:<br>• Understand basic concepts on limits and continuity.<br>• Understand use of differentiations in various theorems.<br>• Know the Mean value theorems and its applications.<br>• Make the applications of Taylor's, Maclaurin's theorem.<br>• Know the applications of calculus. |
| | MTH 103(B): Graph Theory | • To know the basic graphs and types of graphs<br>• To understand operation on graphs<br>• To understand connected graphs, Eulerian and Hamiltonian graphs<br>• To solve various problems related with planer graphs<br>• To learn trees and spanning trees. |

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| | MTH 201: Ordinary Differential Equations | • Upon successful completion of this course the student will be able to:<br>• Understand basic concepts in differential equations.<br>• Understand method of solving differential equations<br>• Understand use of differential equations in various fields. |
| | MTH 202: Theory of Equations | • To understand the number system<br>• To learn divisibility and its application<br>• To know about congruence relation and classes<br>• To learn Fermat's theorem and Euler's theorem |
| | | • To learn relation between roots and coefficients of polynomial equation |
| | MTH 203(B): Numerical Analysis | • Understand basic concepts of methods of solutions of equations viz. bisection, iteration, Newton-Raphson methods and method of false position.<br>• Understand methods of curve fitting viz. Gauss's forward and backward difference formulae and Lagrange's interpolation formula.<br>• Use of curve fitting such as least square, polynomial and exponential fittings for set of given data.<br>• Use Taylor's series, Euler's method. Modified Euler's method., Runge Kutta methods for solving ordinary differential equations. |
| SYBSc | MTH 211: Calculus of Several variables | • It is used in almost all branches of engineering.<br>• It deals with calculus of several variables.<br>• To understand the importance of Taylors series.<br>• To understand Mean value theorem.<br>• To find area by double integration.<br>• To find volume by triple integration. |
| | MTH-212(B): Computational Algebra | • Introduce the concept of algebra in computer<br>• To learn the types of groups<br>• To understand homomorphism and isomorphism<br>• To learn group codes and decodes |
| | MTH 221: Complex Analysis | • It is used in fluid mechanics<br>• To understand concept of complex numbers<br>• To learn operation of complex numbers<br>• Complex integration, residues and poles<br>• To understand analytic concept |
| | MTH 222(B): Differential Equations and Numerical methods | • It is useful for methods of momentum and energy transfer.<br>• To study existence and uniqueness about solutions.<br>• To learn about the simultaneous differential equations.<br>• To understand the methods of solution for total differential equations<br>• It is widely used in Civil engineering, Mechanical engineering, etc.<br>• To understand definition and properties of difference equations. |
| T.Y.B.Sc. | MTH – 351: Metric spaces | • A metric space is a set for which distances between all members of the set are defined<br>• It is used in fixed point theorem and mapping principles.<br>• To study continuous functions on metric spaces.<br>• To learn connected metric spaces.<br>• To understand complete metric spaces.<br>• To study compact metric spaces. |

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| | MTH – 352: Integral Calculus | • Used estimates areas and volumes<br>• Applied in engineering<br>• Estimates bounds of integrations<br>• Introduce proper and improper integral<br>• Used to find solution of LPP. |
| | MTH – 353: Modern Algebra | • Algebra is science of abstract thinking<br>• It is used in computer science |
| | | • To understand concept of normal subgroups and permutations<br>• To learn quotient groups and polynomial rings and ideals |
| | MTH – 354: Lattice theory | • Primary information of sets, logic and probability theory.<br>• Used in discrete mathematics, computer science and IT.<br>• Introduces posets and chains.<br>• To understand lattices and various types of lattices.<br>• To learn about ideals and homomorphism. |
| | MTH-355(A): C-Programming | • Illustrate the flowchart and design analgorithm for a given problem and to develop IC programs using operators<br>• Inscribe C programs that use Pointers toaccess arrays, strings and functions.<br>• Exercise user defined data typesincluding structures and unions to solve problems<br>• Exercise files concept to show input andoutput of files in C |
| | MTH-356(B): Vector Calculus | • Study of Rate of change of vectors is vector calculus.<br>• It is widely used in Physics and Mechanics.<br>• To study various operations on vectors.<br>• To learn about differentiation and integration of vectors.<br>• To understand the concepts of gradient, divergence and curl.<br>• To know the importance of Stokes theorem and Gauss divergence theorem. |
| | MTH-361: Measure and Integration | • It is used in probability abd analysis<br>• To understand measurable sets and functions<br>• To learn Lebegue integrals and solve examples<br>• To learn Fatou's lemma and Lebegue dominated |
| | MTH-362: Method of Real Analysis | • It is a branch of pure mathematics.<br>• It is useful and Statistics, Probability, Operations Research, etc.<br>• To study sequences.<br>• To study series of real functions.<br>• To know the Fourier series.<br>• To study half range series. |
| | MTH-363: Linear Algebra | • It is one of the branch of algebra<br>• Mostly used in electrical engineering<br>• To understand vector spaces<br>• To learn about basis, dimension<br>• To understand eigen values and eigen cectors<br>• To learn about linear transformation |

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| | MTH-364: Ordinary and Partial differential equations | • To understand the importance of ordinary and partial differential equations.<br>• It is used in solving many problems of engineering and physics.<br>• To learn about exact differential equations and various types.<br>• To learn about second order linear differential equations.<br>• To study series method of solution.<br>• To study about linear partial differential equations. |
| | MTH-365(A): Optimization Techniques | • Optimization techniques is a branch of Operations Research.<br>• Used in solving problems in times schedule formation |
| | | • It is used in Production engineering, Mathematics of finance, Networking, etc.<br>• To study the job assignments<br>• Introduces game theory and used to solve competitive games<br>• To know the fundamentals of game theory. |
| | MTH-366 (A): Applied Numerical Methods | • It is a branch of numerical analysis<br>• It is used for solving a system of equations and used in all branches of engineering.<br>• To solve a system of linear equations.<br>• To learn numerical differentiation and integration.<br>• To learn about interpolation polynomials.<br>• To apply numerical methods for differential equations. |
| F.Y.B.Com. | Quantitative Techniques | • To understand the Meaning of Quantitative Techniques<br>• To understand the Functions and their applications<br>• Know permutation and combinations<br>• To know mean, mode and median<br>• To understand measure of dispersion |

| **Department of Physics** | | |
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| Class | Course | Outcomes |

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| F.Y. B. Sc. | PHY-111: Mechanics and Properties of Matter | • To understand Compound pendulum, Differential equation of motion, time period, explanation of length of equivalent simple pendulum, point of suspension & point of oscillation and their interchangeability, condition of minimum time period.<br>• To know about Kater's pendulum and its application to determine 'g'<br>• To understand Torsional pendulum and its application to determine modulus of rigidity.<br>• To know Bifilar suspension and Bifilar pendulum with parallel threads.<br>• Determination of Bending of beams and Bending moments, general expression and expressions for beams having rectangular and circular cross-section,<br>• To understand Cantilever loaded at the free end, Expressions for cantilevers having rectangular and circular cross section.<br>• Determination of General expression for depression of a beam supported at its both ends and loaded in the middle, expressions for the beams having rectangular and circular cross-section, Experiment to determine 'Y' by bending of a beam.<br>• Basic concepts of surface tension and angle of contact.<br>• To understand Pressure difference across a liquid surface, Excess pressure inside a liquid drop and a soap bubble, Relation between surface tension and surface energy.<br>• To know Relation between surface Tension, excess pressure & radius of curvature.<br>• Determination of surface tension by Jaeger's method, Applications of surface tension with explanation.<br>• General concept of fluid flow, Streamline and turbulent flow, Equation of continuity of flow, Energy possessed by a liquid.<br>• Concept of pressure energy, Bernoulli's Theorem and its applications as venturimeter, Pitot tube. |
| | | • Definition of viscosity, Poiseuille's equation, Experimental determination of coefficient of viscosity by using Poiseuille's equation. |
| | PHY-112: Electricity and Magnetism | • To understand the fundamental Physics related to current electricity.<br>• To study the working and operation of few electrical D.C. circuits.<br>• Classify different types of magnetic materials with their properties.<br>• To acquire knowledge about the phenomenon of electromagnetic induction.<br>• To understand Kirchhoff's law by loop analysis.<br>• To understand and illustrate Network theorem including Thevenin's theorem, Norton's theorem and Maximum power theorem. |
| | PHY-121: Heat and Thermodynamics | • To understand and discuss the results of Andrew's experiment and Amagat's experiments.<br>• To determine van der Wall's equation, Critical constants and concept of Bolye's temperature.<br>• Understand basic concept of thermodynamics and to distinguish between work done due to Adiabatic and isothermal changes.<br>• To understand Carnot's ideal heats engine, Carnot cycle and its efficiency, Carnot's theorem, Otto and Diesel engines with their efficiencies.<br>• To state First and Second latent heat equations.<br>• To understand Concept of entropy, Change of entropy in Reversible process and Irreversible process, T-S diagram.<br>• Knowledge of basic principles of refrigeration methods: Evaporative refrigeration, refrigeration by throttling of gas, vapour refrigeration.<br>• To learn basic components of simple vapour compression refrigeration understand its working with Flow diagram. |

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| | PHY-122: THEORETICAL PHYSICS | • Students understand how to do addition, subtraction, multiplication, division and complex conjugate of complex numbers.<br>• They learned how to write complex numbers in Rectangular, Polar and Exponential forms.<br>• They understand how to complex numbers used to determine velocity and acceleration in circular motion.<br>• They understand how to do differentiation like partial differentiation, total differential, and exact differential.<br>• They learned how to Change of variables from Cartesian to polar coordinates.<br>• They learned scalars and vectors and its Dot product and cross product of two vectors with their properties.<br>• They understand Scalar triple product with properties and its geometrical interpretation.<br>• They learned how to take divergence of vector field and circulation (Curl) of vector field. |
| | PHY 103: Practical Physics | • To acquire knowledge about experiments related to mechanics.<br>• To understand the fundamental related to elasticity and viscosity.<br>• To describe the fundamentals of electricity and magnetism.<br>• Creating awareness about the consumption of electricity with energy meter.<br>• Understanding of the optical phenomenon through experiments of Optics.<br>• SECTION-I<br>• M.I. of a disc by torsional pendulum.<br>• 2.η by torsional oscillation.<br>• Determination of acceleration due to gravity by Kater's reversible pendulum.<br>• Determination of Y by using flat spiral spring.<br>• Determination of ηby using flat spiral spring.<br>• To determine Y of rectangular beam by method of bending. |
| | | • To determine Y by vibrational cantilever.<br>• Poisson's ratio of rubber by using cord/rubber tube.<br>• Determination of coefficient of viscosity of water by Poiseuille's method.<br>• Verification of Bernoulli's theorem.<br>• To determine the surface tension by Jaeger's method.<br>• Thermal conductivity by Lee's method.<br>• Thermocouple as thermometer.<br>• SECTION-II<br>• Verification of Kirchhoff's laws.<br>• Verification of Thevenin's theorem.<br>• Verification of Norton's theorem.<br>• Maximum power transfer theorem.<br>• Verification of Joule's law.<br>• Determination of time constant of L-R circuit.<br>• Determination of time constant of R-C circuit using charging and discharging of condenser through resistor.<br>• To determine efficiency and turns ratio of transformer.<br>• Study of spectrometer and determination of angle of prism.<br>• Use of analog/digital multimeter.<br>• Electric billing with energy meter.<br>• Study of I-V characteristics of solar cell.<br>• 13. Frequency of a. c. using vibrating wire and magnet. |

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| S.Y. B. Sc. | PHY-231: Waves and Oscillations | • The ability of students developed how to do composition of two S.H.M.s having equal frequencies along same line of vibration.<br>• They learned how to get the lissajous figures using mechanical, optical and electrical methods.<br>• They understand what is Oscillations and how it is divided into different type on basis of it motion and different force action on it.<br>• Student learned how energy, power dissipated in the oscillations and how to calculated quality factor.<br>• The ability of student developed how to used Damped free oscillations in LCR ckt..<br>• They understand when the amplitude resonance and its relation with maximum power.<br>• They learned how hearing ability of human being changes on the basis of sound intensity and its relation with loudness.<br>• They learned how we can produce ultrasonic wave. |
| | (b) PHY- 232 (B) - Instrumentation -I | • To know Standards of measurements and calibration<br>• To understand Static performance characteristics such as Accuracy, Precision, Sensitivity, Linearity.<br>• Concepts of errors and their types.<br>• To know the principal, construction and working of Liquid- in-glass thermometer, Pressure thermometers their types Constant volume gas thermometer and Vapour pressure thermometer.<br>• To study the principal, construction and working of Metalic resistance thermometer , Semiconductor resistance sensors ,Thermo-electric sensors .<br>• To know the principal, construction and working of Total radiation pyrometer and Selective radiation pyrometer<br>• Measurement of high pressure , Measurement of low pressure<br>• To study the principal, construction and working of McLeod gauge, Pirani gauge. |
| | | • Characteristics of sound ,Sound pressure level, Sound power level, Variation of intensity of sound with distance.<br>• To know the principal, construction and working of Microphones such as Condenser type microphone,Electret Microphone, Electrodynamic types of microphone .<br>• To study the principal, construction and working of Measurement of magnetic field by Search coil, Measurement of magnetic field by Hall gauge meter. |
| | PHY – 241: Modern Physics | • To study conventional, non-conventional energy sources, solar cell-(types, working principle, operation and its applications)<br>• To learn LASER (principle, characteristics, steps of formation, types, applications)<br>• To understand Bohr’s and Sommer field theories of hydrogen atom along with limitations of quantum mechanical model.<br>• Study of matter waves through few experiments and uncertainty principle. |

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| | PHY-242: Optics | • To study of Deviation produced by thin lenses, equivalent focal length of two thin lenses separated by a distance and when in contact, Power of lens.<br>• To understand Spherical aberration in lens, reduction of spherical aberration, Chromatic aberration, Achromatism. Intensity distribution in the interference pattern, Phase change on reflection.<br>• To study Interference due to reflected light, Interference in thin wedge shaped film, fringe width in case of fringes of equal thickness.<br>• Newton's rings theory and its application to determine wavelength of source and refractive index of liquids, Michelson Interferometer.<br>• To study the concept of Fraunhofer diffraction at single slit and double slits, Theory of plane transmission grating, Intensity distribution in diffraction pattern. Fresnel diffraction, rectilinear propagation of light, Resolving power of grating.<br>• To understand basics of Polarization, Polarization by reflection, Brewster's law, Polarization by double refraction in uniaxial crystals, Double refracting crystals, Huygens explanation for normal incidence, Positive and negative crystals.<br>• Production and detection of circularly and elliptically polarized light, Construction of Polaroid, Quarter and Half wave plates, Nicol prism, Rotation of the plane of polarization, Specific rotation, Polarimeter, Optical Activity |
| | PHY 233: PRACTICAL COURSE-I | • SECTION-I<br>• Determination of the decrement factor by using Logarithmic decrement (in air / water).<br>• Study of acoustic resonance by using bottle as a resonator.<br>• Determination of velocity of sound by using Kundt's tube.<br>• Study of electrical resonance by using series L-C-R circuit.<br>• Study of acoustic resonance by using resonance tube.<br>• Study of resonance using Kater's pendulum.<br>• Comparison of capacities by De Saughty's method.<br>• R, Γ, Q using damped harmonic motion.<br>• Demonstration of Lissajous figures by using C.R.O.<br>• Frequency response of CE single stage transistor amplifier and to calculate its bandwidth.<br>• SECTION-II INSTRUMENTATION-II<br>• Use of C.R.O as a measurement tool for different electrical parameters (frequency, a.c. /d.c.voltage, pulse height, pulse width, rise time and fall time). |
| | | • To obtain Lissajous figures using C.R.O.<br>• To determine characteristics of Thermistor and to find an unknown temperature by using thermistor.<br>• Measurement of magnetic field by search coil.<br>• Measurement of magnetic field by hall probe method.<br>• Directional characteristics of a microphone.<br>• Platinum resistance thermometer. (Determine the melting temperature of Wax)<br>• Velocity of sound by phase shift method.<br>• 9. Measurement of Noise by Using Sound Pressure level Meter. |

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| T.Y. BSc | PHY351: Mathematical Physics | • Have knowledge about, and being able to use, advanced mathematical methods and theories on various mathematical and physical problems.<br>• Use mathematical formulations, analyses and models to obtain insight in specialized areas of Physics.<br>• Be able to apply skills of mathematical, statistical and physical modeling in applied fields and on technological problems.<br>• Be able to carry out, present and document a comprehensive independent work, demonstrating command of the terminology of the subject area.<br>• Identify different special mathematical functions.<br>• Apply techniques of vector analysis, such as gradient of scalar, divergence of vector, curl of vector,<br>• To the study of special functions of mathematical physics<br>• To understand Cartesian (X, Y, Z), Spherical polar ($r,\theta,\varphi$) and Cylindrical ($\rho,\varphi,z$) co-ordinate systems and their transformation equations.<br>• To understand expression for gradient, divergence, curl and Laplacian in curvilinear, spherical polar and cylindrical co-ordinate systems.<br>• Solve partial differential equations with appropriate initial or boundary conditions with Green function techniques<br>• Have confidence in solving mathematical problems arising in physics by a variety of mathematical techniques<br>• To understand special relativity theory and to solve Lorent'z transformation equations, Length contraction, time dilation, |
| | PHY 352: Classical Mechanics | • Students learned how Newton's laws of motion is important in science and what is its Limitations.<br>• The ability of students developed how to differentiate different types of forces.<br>• They understand strategy of satellite launching on the basis of equation of orbit using kepler's laws.<br>• They learned how to calculate virtual work and its relation with virtual displacement.<br>• The ability of students developed how to use Lagranges equation in the different type of motion.<br>• They understand important of phase space and how to derived Hamilton's canonical equation of motion.<br>• They understand how Hamilton's equation is more important than Lagranges equation and Newton's machnics.<br>• The ability of students developed how to use Hamilton's equation in the different type of motion. |
| | PHY 353: Atomic and Molecular Physics | • Upon successful completion of this course it is intended that a student will be able to:<br>• State and explain the key properties of vector atom model and the importance of the Pauli Exclusion Principle.<br>• To explain the observed dependence of atomic spectral lines on externally applied electric and magnetic fields.<br>• To state and justify the selection rules for various optical spectroscopies in terms of the symmetries of molecular vibrations. |
| **Department of Electronics** | | |
| Class | Course | Outcomes |
| F.Y. B. Sc. | ELE-101 Circuit Components and Network Analysis | • 1.Apply knowledge to develop circuits using electronic devices.<br>• Apply the concept and knowledge of electronics devices to real life problems.<br>• Simulate complex circuits and understand the behaviour of the systems.<br>• Understand and analyse, linear and digital electronic circuits.<br>• Review, prepare and present technological developments. |
| | ELE-102 Basics of Digital Electronics | • Apply knowledge to develop circuits using electronic devices.<br>• Apply the concept and knowledge of electronics devices to real life problems. |

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| | | • Simulate complex circuits and understand the behaviour of the systems.<br>• Understand and analyse, linear and digital electronic circuits.<br>• Review, prepare and present technological developments. |
| | ELE-201: Analog Electronics | • Apply the concept and knowledge of digital integrated circuit chips to develop new systems.<br>• Apply practical knowledge to solve real life problems of the society.<br>• Understand of the course and create scientific temperament and give exposure to the students for independent use of digital integrated circuit chips for innovative applications.<br>• Model complex circuits and simulate them.<br>• Handle simulation software to analyse analog and digital electronics circuits. |
| | ELE-202: Digital Circuits | • Understand of the course and create scientific temperament and give exposure to the students for independent use of digital integrated circuit chips for innovative applications.<br>• Model complex circuits and simulate them.<br>• Handle simulation software to analyse analog and digital electronics circuits. |
| | ELE-203: ELECTRONICS LAB-2 | • Apply the concept and knowledge of digital integrated circuit chips to develop new systems.<br>• Apply practical knowledge to solve real life problems of the society.<br>• Understand of the course and create scientific temperament and give exposure to the students for independent use of digital integrated circuit chips for innovative applications.<br>• Model complex circuits and simulate them.<br>• Handle simulation software to analyse analog and digital electronics circuits. |
| SYBSC | ELE-301: Analog Communication ( | • Apply knowledge to develop circuits of analog modulation and demodulation.<br>• Apply the concept and knowledge of microprocessors to real life problems.<br>• Analyse modulation circuits and understand the behaviour of the systems.<br>• Understand and analyse 8085 microprocessor and its programming.<br>• Review, prepare and present technological developments. |
| | ELE-302: Microprocessors and Applications | • Apply knowledge to develop circuits of analog modulation and demodulation.<br>• Apply the concept and knowledge of microprocessors to real life problems.<br>• Analyse modulation circuits and understand the behaviour of the systems.<br>• Understand and analyse 8085 microprocessor and its programming.<br>• Review, prepare and present technological developments. |

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| S.Y. B. Sc. | ELE-303: ELECTRONICS LAB-III | • The ability of students developed how to do composition of two S.H.M.s having equal frequencies along same line of vibration.<br>• They learned how to get the lissajous figures using mechanical, optical and electrical methods.<br>• They understand what is Oscillations and how it is divided into different type on basis of it motion and different force action on it.<br>• Student learned how energy, power dissipated in the oscillations and how to calculated quality factor.<br>• The ability of student developed how to used Damped free oscillations in LCR ckt..<br>• They understand when the amplitude resonance and its relation with maximum power.<br>• They learned how hearing ability of human being changes on the basis of sound intensity and its relation with loudness.<br>• They learned how we can produce ultrasonic wave. |
| | ELE-401: Digital Communication | Learner will be able to—<br>• Apply knowledge to develop circuits of analog modulation and demodulation.<br>• Apply the concept and knowledge of microprocessors to real life problems.<br>• Analyse modulation circuits and understand the behaviour of the systems.<br>• Understand and analyse 8085 microprocessor and its programming.<br>• Review, prepare and present technological developments.. |
| | ELE-402: Microcontrollers and Applications | Learner will be able to—<br>• Apply knowledge to develop circuits of analog modulation and demodulation.<br>• Apply the concept and knowledge of microprocessors to real life problems.<br>• Analyse modulation circuits and understand the behaviour of the systems.<br>• Understand and analyse 8085 microprocessor and its programming.<br>• Review, prepare and present technological developments |
| | ELE-403: ELECTRONICS LAB-2 | Learner will be able to—<br>• Apply knowledge to develop circuits of analog modulation and demodulation.<br>• Apply the concept and knowledge of microprocessors to real life problems.<br>• Analyse modulation circuits and understand the behaviour of the systems.<br>• Understand and analyse 8085 microprocessor and its programming.<br>• Review, prepare and present technological developments |
| TYBSC | ELE- 501: Semiconductor Electronics | • Estimate the number of carriers at a given temperature for a semiconductor.<br>• Understand the importance of doping to change carrier density. |
| | ELE 502: Advanced Digital System Design using VHDL | • Students will able to design digital circuits according to requirements.<br>• Student will able to write VHDL code for digital circuit with the help of different modeling style. |

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| | ELE 503: Advanced Microprocessor | • Student will be able to Aware about the microprocessor and its architecture considerations & Capable to analyze the operating modes<br>• Understand the assembly language programming<br>• Student will be able to understand the advanced microprocessor 80386 and operation of paging mechanism.<br>• To gain the Knowledge about the Pentium series processor |
| T.Y. BSc | ELE – 504: Electronic Instrumentation | • Understand the concept of measurement systems and its various characteristics<br>• Learn about different types of transducers and their working principle.<br>• Know the different electronics measuring instruments and develop the skill to handle them.<br>• Aquent the knowledge of testing instruments. |
| | ELE- 505 : Medical Electronics | • Familiarize with human assist devices<br>• Learn biological signals present in human body<br>• Learn the various blocks of biomedical sensors<br>• The electrodes which are normally used to measure the biological signals<br>• Understand the working principles of various therapeutic and monitoring systems<br>• Understand recording and analysis of prominent biosignals of human<br>• Understand the measurement and analysis techniques for physiological parameters<br>• Understand the patient imaging and monitoring systems |
| | ELE 506 (A): Embedded C | • Learn structure oriented programming concepts required in all other languages.<br>• After completion of this course students are able to built real world applications based on embedded system and automation. |
| | ELE – 601 Power Electronics | • have fundamental knowledge of semiconductor power electronic device<br>• can apply this knowledge for designing power electronic circuits |
| | ELE 602: Consumer Electronics | • Understand the various type of microphones and loud speakers.<br>• To identify the various digital and analog signal.<br>• Understand the various type of consumer goods and acquaint the skill of fault findings.<br>• Develop the skill of electronics appliances like Set Top Box, CATV and Dish TV, water purifier, Air conditioner etc.<br>• Acquaint the knowledge of different types of Television Technology. |

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| | ELE 603: Microprocessor Interfacing Techniques | • Student will be able to Aware about the concept of microprocessor and its interfacing & Capable to analyze the operation and priorities of Interrupt<br>• Understand the concept of memory mapping & DMA<br>• Student will be able to understand the ADC & DAC interfacing<br>• To gain the Knowledge about the programmable interval timer and communication interface 8251 & analyze the operating modes |
| | ELE 604: Computer Network | • Recognize the technological trends of Computer Networking.<br>• Discuss the key technological components of the Network.<br>• Evaluate the challenges in building networks and solutions to those |
| | ELE 605: Embedded Systems | • To gain the knowledge about the 8051-microcontroller programming such as timer & counter and serial port programming<br>• Understand the basic concept of interfacing with microcontroller<br>• Understand the interfacing principle with Stepper motor and temperature sensor<br>• To gain the Knowledge about the serial peripheral interface and two wire interface. |
| | ELE-606 (A) Electrodynamic | • Apply Gauss Law, Amperes Force Law, Lorentz's force, Biot-Savarts Law, Faraday's Law for solving the problems in Electrostatic and Electromagnetic Fields.<br>• Apply the principle of electrostatic to the solutions of problems related to electric field and electric potential, boundary value problem in electrostatic field.<br>• Understand the concept of Faradays law, Lenz's Law and Maxwell Equation<br>• Apply the Maxwell's equation in free space, linear isotropic media and varying fields, energy and electrostatic fields. |
| **Department of Zoology** | | |
| Class | Course | Outcomes |
| F.Y.B.Sc | ZOO-101 Animal Diversity- I | • To know the basic concept of taxonomy.<br>• Identified the taxonomic status of the entire non-chordates up to Echinodermata and discuss the evolutionary model of the group.<br>• Described the general biology of few selected non-chordates useful to mankind.<br>• Know about some of the important and common protozoans, helminthes of parasitic nature causing diseases in human beings.<br>• Understand the important general topics of each phyla such as locomotion in protozoa, metamerism in annelids etc. |
| | ZOO 102 Animal Diversity-II | • Understanding the classification of chordates up to orders and general features of each class.<br>• Understand the important general topics of each class such as osmoregulation in fishes, metamorphosis in frog, parental care in amphibia etc.<br>• Study of different socially important general topics such as poisonous and nonpoisonous snakes, biting mechanism in snakes.<br>• Understanding the origin and evolution of mammals. |
| | ZOO-201 Comparative Anatomy of Chordates | • To know about the structure and functions of various systems of the body.<br>• To understand the evolution of various systems in different classes of chordates.<br>• To get the knowledge of comparative study of different organs in different classes.<br>• To know the structure and functions of different sense organs |

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| | ZOO-103 Practical Zoology SEM-I | • To study the various specimens of non-chordates and chordates with reference to their classification, habit, habitat, biological and economic importance.<br>• To observe permanent slides and correlate with therotical knowledge.<br>• Identification of poisonous and non-poisonous snakes with the help of photographs and key provided. |
| | ZOO 203 Practical Zoology Sem-II | • To study the disarticulated skeleton of fowl and rabbit, their bones with the help of photographs.<br>• To study the developmental stages of frog through permanent slides.<br>• Understand the types of placenta with respect to histology.<br>• To examine frog/ rat gametes through permanent slides/ photographs. |
| S.Y.B.Sc. | ZOO 301 Physiology | • Understanding of the physiology of various systems in the human body.<br>• Explanation of the different functions and mechanism of the systems.<br>• Identification oral and aboral surface of starfish.<br>• Understanding of the hormonal control of reproductive organs. |
| | ZOO 302 Biochemistry | • Knowledge and introduction of the scope of Biochemistry.<br>• Understanding of the metabolism of different food stuffs in human body.<br>• Understanding the enzyme activity, classification, mechanism of action and regulations. |
| | ZOO-401 Genetics | • Introduction of Mendelian work of Genetics and its extension.<br>• Understanding the linkage, crossing over and chromosomal mapping.<br>• Explanations of sex determination with various methods.<br>• Understanding the different types of chromosomal mutations. |
| | ZOO 402 Evolutionary Biology | • Introduction to the major events in history of life and various evolutionary theories.<br>• Study of direct evidences of evolution, organic variations with processes.<br>• Study of macroevolution, concept of species and mads extinction. |

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| T.Y.B.Sc. | Z00 501: Non-chordates-III | • Animal type - Leech<br>• Introduction of anatomy and physiology of non-chordates Animals<br>• Understanding the characters of leech<br>• Classification of the Leech with taxonomic keys<br>• Identification of the characters of phylum Annelida with its characters<br>• Knowledge of the economic importance of Leech. |
| | Z00 502: Cell and Molecular Biology | • Understanding the structure and function of cell<br>• Comparison of the structure and function of different cell organelles<br>• Explanation of the molecular organization of nucleic acids. |
| | Z00 503: Mammalian Histology and Physiology I | • Introduction to the different methods of histology<br>• Study of the physiology of different tissues<br>• Understanding of the different systems of mammals.<br>• Knowledge of the mechanism of digestion and respiration |
| | Z00 504 Biochemistry | • Understanding the nature of the different carbohydrates, lipids and nucleic acids.<br>• Study of the different biomolecules and important role of biomolecules in life. |
| | Z00 305 Systematics, Evolution and Palaeontology | • Study of the different methods classification of animal.<br>• Understanding the hierchic classification of frog and calotes<br>• Explanations the geographical distribution of animals<br>• Identification the different geographical regions. |
| | Z00 506 (B)Pest Management | • Identification of the different kinds of pests with the help of key,<br>• Study of the control mechanism of pests w.r.t. life cycle. |
| | Z00 507 Chordates-III | • Study of the Systematic position, habit, habitat and external characters of scoliodon.<br>• Understanding the different systems of scoliodon<br>• Study of the sense organs of scoliodon.<br>• Explaination of the reproduction, fertilization and development of scoliodon.<br>• Understanding the comparative account of skin, heart and aortic arches in different vertebrates. |
| | Z00 508 General embryology | • Introduction to the concept of embryology.<br>• Understanding the structure of gametes and different types of female gamete.<br>• Study of the chick embryology in detail with reference to various stages of development. |
| | Z00 509 : Mammalian Histology and Physiology II | • Explaination of the excretory system and excretion.<br>• Understanding of the nerve impulses conducted at myelinated and nonmyelinated nerve fibre.<br>• Study of the physiology of hearing and physiology of vision.<br>• Study of the different endocrine glands, its structure and function. |
| | Z00 364 Research Methodology | • Introduction to the scientific approach of research.<br>• To gain the knowledge of the research design<br>• Study of the different types data analysis and data representation.<br>• Understanding the component of research report/project.<br>• Explanations of the parameters of research.<br>• Study to write a letter to editor to publish research work. |
| | Z00 365 Microtechnique | • Study of the materials collected for micro processing<br>• Understanding how the different fixatives works.<br>• To study the theory of washing and dehydration process. |

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| | | • Study of blocks embedding and making, section cutting and affixing. |
| | Z00 356 (C) Applied Zoology III (Vermiculture, poultry and Fishery) | • Introduction to the vermiculture introduction and scope.<br>• Study of the how the vermicomposting and vermiwash units are established.<br>• Comparison of the different poultry breed, housing and equipment of poultry. |