Appasaheb R.B.Garud Art`s, Commerce and Science College Shendurni,Tal-Jamner, Dist- Jaljaon 424204

Course outcomes

DEPARTMENT OF ENGLISH

Class	Course	Outcomes
FYBA	COMPULSORY ENGLISH	• The students could express themselves in oral and written communicative situations.
		• Students use the values learnt through literary works.
	OPTIONAL ENGLISH	• Development of the comprehensive ability of students.
		• Inculcation of moral and human values among students.
		• Understanding of the basic forms of poetry.
SYBA	COMPULSORY ENGLISH	• The students' literary tendencies are developed.
		• The students could express themselves in oral and written communicative situations.
		• The students could improve vocabulary.
		• The students are able to use English effectively in formal and informal situations of life.
	G: 2 Study of English	• The students are able to appreciate literature critically.
		• The students could use their creative and critical faculties of mind in real life situations.
		• The learners are able to apply the science of pronunciation and oral form of English language.
		• The students use literature to develop their social and moral sense in life.
	SI : 16th & 17th century English literature	• The students learn to correlate literature to socio-political conditions of its time.
		• The students are able to use their creative and critical faculties of mind in real life situations.
		• The learners could implement the values of literature in life.
	SII : 18th & 19 th century English literature	• Students could learn Language through literature.
		• The syllabus can implement the values of literature in life.
		• Students know the culture of the times.
TYBA	Compulsory English	• The students understand the basic concept of literary genre, poem, prose and stories.
		• To help the students to develop literary abilities.
		• The students' communicative skills are developed.
	GII Study of English Drama	• The students learn the origin of drama and dramatic art.
		• The students learn the aspects and genres of drama.
	S: III Indian english Literature and American	• The students develop the critical understanding literature.
		• The students are exposed to Indian writing in English and American literature.
		• The students are exposed to social, political and cultural background.
	S: IV The Study of English Language	• The students understand the properties and functions of language.
		• Inculcation of phonological competence among students.
		• The students are acquainted with English grammatical forms and functions.
		• The students are acquainted with morphological concepts and processes.

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FYB.Com	Business for Communication	• The students are able to make accurate use of English Language in their respective fields.
		• The students could communicate effectively in their various business situations.
		• The verbal and non-verbal skills of communication are developed.
S.Y.B.Sc.	General paper	Students will be introduced with new techniques of technical communication.
		Students will be equipped with enough English to enable them to enter the usual profession open to them.
		Students will be equipped to communicate effectively in the changed circumstances and the present business environment.
DEPARTMENT OF HISTORY		
Class	Course	**Outcomes (Students will be able to)**
FYBA	HIS- 101 – G1 History of Indian Freedom	• Understand modern Indian history
		• Identify the importance and the legacy of Freedom Movement.
		• Distinguish the detail account of British raj as well as its overall impacts on the Indian society.
		• Evaluate the renaissance and social reform movement in India.
		• Understand some of the early resistance to British rule.
	HIS - 201 - G1 History of Indian Freedom	• Understand early political awakening in Indian freedom struggle.
		• Identify the social institutions of late nineteenth century.
		• Understand various phases of the national movement.
		• Understand the difference between moderates, extremists and revolutionaries.
		• Comprehend the socio-religious scenario and the social reformation.
		• Grasp the details of freedom movement under the Mahatma Gandhi's leadership.
		• Understandthe evolutionary processes of constitutional developments.
SYBA	HIS - 231-G-2 Rise of Maratha Power (1630-	• Understand the inspiration behind the establishment of swarajya.
		• Explain the reasons behind ChatrapatiShivaji'searly conflicts with the regional lords and the outsiders.
		• Know about the administrative need and the importance of grand coronation of ChatrapatiShivaj
		• Asses the ChhatrpatiShivaji's invasion on Karnataka.
	HIS- 232 – (B) S1 History of USA (1776-	• Explain the processes of the colonisation of American land.
		• Understand the founding principles and ideals propagated by the American Revolution.
		• Evaluate the development and the nature American democracy.
		• How the American people successfully overcame from the stigma of Slavery and the Civil War.
		• Describe the policies of US's President Theodore Roosevelt and President Woodrow Wilson.
	HIS- 233- S2 History of Ancient India	• Perceive various sources to study of Ancient India.
		• Know about the development and the achievements of man in the Stone Age.
		• Understand the glory of Indian history in the age of Harappan civilization.
		• Comprehend the history of Vedic period.
		• Understand the philosophy of Jainism and Buddism.
		• Perceive influence of political support on religion.

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	HIS 241 (G-2) : Rise of Maratha Power (1674-	• Understand the formation of welfare state during the Maratha rule
		• Understandtheindustrial and agricultural aspects of ChhatrpatiShivaji's regime
		• Understand the administrative aspect of the Swarajya.
		• Understandthe conflict for throne after the death of ChhatrpatiShivaj
	HIS- 242 – B S1 History of USA (1914-1970)	• Explain how the America marched towards to become a world power.
		• Critically assess the importance of the role played by US in the world war-I and world war-
		• How the America became the world economic power.
		• Understand the Civil Rights Movement.
		• Explain and critique the Indo-US relations.
	HIS 243 (S-2) : History of Ancient India	• Know about the MauryanEmpire.
		• Perceive socio-economic, religious situation under the Maurya.
		• Comprehend about the Gupta period.
		• Understand emergence of feudal system in Indian society
		• Understand the History of Satvahanas, Shungas, Kushans, and Hunas.
		• Know about the Sangam age, the Cholas, Pallavas and Chalukyas.
TYBA	HIS 351 -G3- History of Modern World (1789-	• Learn about the causes and aftermaths of the French revolution.
		• Understand the factors responsible for the end of monarchy in France.
		• Understand the rise of Nepolean and how Meternic dominated the European politics.
		• Describe how feudalism came to end In Europe.
		• Describe the historical process which leads to rise of nationalism in Europe.
		• Understandhow industrial revolution encouraged to colonial expansion.
	HIS 352(B)- S3 - Expansion of the Maratha	• Understand the importance of the Maratha history in 18th century.
		• Asses the circumstances under which rise of the Peshwas took place.
		• Understand the political scenario of the Maratha power in the early 18th century
		• Understand the policies adopted by early Peshwas.
	HIS 353 - S4 - History of Sultanate (1206-	• Understand early difficulties of Sultans in India
		• Grasp territorial expansion of Sultanat Period.
		• Understand the administrative setup of Sultanat from central to local level.
		• Know the system of trade & commerce during the period of Sultant .
		• Understand the nature of village community & the relationship between the different sections of society.
		• Understand the aspects of fiscals & monetary system under the Sultanat.
		• Grasp the attitude of emperors towards religion under the regime of Sultanat.
	HIS 361 - G3 - History of Modern World	• Understand the importance of world peace right after the world war Ist.
		• Evaluate the Russian revolution and the first experiment of the communist government.
		• Understand the fascism and the rise of dictatorship in Europe.

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		• Explain the aftermaths of the World War II on the world politics.
		• Understand how Russia and America emerged as superpowers on the verge of cold war.
	HIS 362(B) -S3- Expansion and fall of the	• Explain the circumstances of the Maratha power after the battle of Panipat.
		• Knowthe reasons of political disintegration of the Marathas.
		• Understandthe nature of Aglo-Maratha relations.
		• Understandthe central and provincial administration of Marathas under the Peshwas.
	HIS 363 -S4- History of Mughal (1526-1707)	• Understand the political situation of India on the eve of Babar's invasion.
		• Grasp territorial expansion of Mughal empire
		• Understand the emergence & consolidation of Sher Shah.
		• Grasp the Mughal concept at divine theory of kingship & state
		• Understand the administrative set up of Mughals.
		• Comprehend the basic features of Mansabdari& change in it during 17th century.
		• Know the system of trade & commerce during the period of Mughals.
		• Understand the nature of village community.
		• Grasp the some aspects of fiscals & monetary system of Mughals.
		DEPARTMENT OF ECONOMICS
Class	Course	Outcomes
FYBA	Economy of Maharashtra since Reform Era I	To aware students about the various issues of the Economy of Maharashtra
		To increase the understanding of Students about Social and Economic Problems before Economy of Maharashtra
		To prepare Student for Competitive exams.
	Eco G-201(A) - Fundamentals of Economics-II	• Students will be aware about various forms of market
		• Students will be able to understand concept of cashless society
		• Students will be able to understand BOT, BOP & type of exchange rates.
		• Students will be able to understand concept of govt. financing.
SYBA	ECO 231- Indian Economy since 1980 – I	• Students will be able to understand nature of Indian economy
		• Students will be able to understand population & economic development
		• Students will be able tounderstand infrastructure and economic development
		• Students will be able tounderstand role of agriculture in Indian economy
	ECO 241 - Indian Economy since 1980 – II	• Students will be able to understand industrial sector in India
		• Students will be able to understand cooperative sector in economy
		• Students will be able to understand economic planning in India
		• Students will be able to understand recent structural changes in economy
	ECO 232- Advanced Micro Economics – I	• To understand individual agents of market
		• Students will be able to understand consumer behaviour
		• Students will be able to understand concept of cost

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		• Students will be able to understand Linear & Non- Linear functional relationship
	ECO 242- Advanced Micro Economics – II	• Students will be able to understand price determination of factors
		• Students will be able to understand various theories of factors
		• Students will be able to understand concept of profit & Interest
		• Students will be able to understand market equilibrium of firm in monopolistic market.
	ECO 233- Advanced Macro Economics – I	• Students will be able to understand macro economic analysis
		• Able to understand of national income
		• Able to understand classical & Keynesian theories of output and employment
		• Able to understand consumption & Investment function
	ECO 243- Advanced Macro Economics – II	• Students will be able to understand process of credit creation by commercial banks
		• Students will be able to understand Quantity theory of money.
		• Students will be able to understand various macroeconomic problems.
		• Students will be able to understand various macroeconomic policy
TYBA	ECO 351 - Indian Economy since 1980 – III	• Students will be able to understand Indian financial system
		• Students will be able to understand money & banking
		• Students will be able to understand India's foreign trade
		• Students will be able to understand concept of globalization
	ECO 361-Indian Economy since 1980 – IV	• Students will be able to understand federal fiancé in India
		• Students will be able to understand Indian tax system
		• Students will be able to understand public expenditure in India
		• Students will be able to understand public debt& deficit finance
	ECO-352(A)- Public Finance and Policies-I	• Students will be able to understand concept of public fiancé
		• Students will be able to understand concept of public revenue
		• Students will be able to understand incidence & approaches of taxation
		• Students will be able to understand government intervention
	ECO-362(A) - Public Finance and Policies-II	• Students will be able to understand concept of public expenditure
		• Students will be able to understand concept of public debt
		• Students will be able to understand concept of fiscal policy
		• Students will be able to understand concept of budget & deficit finance
	Practices-I	• Students will be able to understand international trade theories
		• Students will be able to understand gains from international trade & trade policy
		• Students will be able to understand concept of BOP & BPT
		• Students will be able to understand concept of exchange rates
		POLITICAL SCIENCE
Class	Course	**Outcomes**

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F.Y.B.A.	Introduction to Indian Constitution	On Completion of F.Y.B.A. Syllabus of 'Introduction to Indian Constitution 'students are able to-
		• They will know the basic ideas of Indian Constitution.
		• They will understand their Fundamental Rights to create responsibility among Indian Citizenship.
		• They will be able to explain the composition, powers & functions of Government.
		• They will identify the Center-State relationship.
		• They will get information of various Amendments of the Indian Constitution.
		• They will understand election process and role of election commission in the development of democracy.
		•They will comprehend the emerging challenges before Indian Democracy.
S.Y.B.A. (G2)	Socio-Political Movement in Maharashtra	On Completion of S.Y.B.A. Syllabus of 'Socio-Political Movement in Maharashtra' students are able to-
		• They will understand various socio-political traditions in Maharashtra.
		• They will interpret various Social Reformers and their work in development of human being.
		• They will grasp various causes of Socio-Political Movement.
		• They will realize the differences between the past & present situation of Maharashtra State.
		• They will collect information about the structure & functioning of Local Self Government.
S.Y.B.A. (S1)	Modern Political Ideologies	On Completion of S.Y.B.A. (S1)Syllabus of 'Modern Political Ideologies' students are able to-
	(231144/241144)	• They will identify the political philosophy of political Ideologies.
		• They will be able to compare political ideologies.
		• They will understand merits & demerits of various political ideologies.
		• They will implement moral ethics & values in their political life.
S.Y.B.A. (S2)	Indian Political Thought (231177/241177)	On Completion of S.Y.B.A. (S2) Syllabus of 'Indian Political Thought 'students are able to-
		• They will know the contribution of Political Thinkers in development of India.
		• They will be able to inculcate moral ethics & values in their life.
		•The y will identify the struggle and patriotism of Thinkers.
		• They will understand the political career of Indian Thinkers.
T.Y.B.A.	Personnel Administration & Management	On Completion of T.Y.B.A. (G3) Syllabus of 'Personnel Administration & Management' students are able to-
		• Students will understand the importance of Personnel Administration for welfare state.
		• They will be aware about the process of recruitment & training.
		• They will get information of promotion & retirement process.
		• They will able to know employer & employee relations.
		• They will know the Administrative leadership & Management.
		• They will grasp the policy formation & new trends.
T.Y.B.A. (S3)	Western Political Thought (31145/31146)	On Completion of T.Y.B.A. (S3) Syllabus of 'Western Political Thought' students are able to-
		• They will be able to know the ideas of Western Political Thinkers.
		• They will understand how idea can develop as per the change in the society.
		• They will be able to evaluate the western thought with present situation.

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		• They will be aware about the various opinion about social contract theory, origin of state theory etc.
T.Y.B.A. (S4)	Modern Political Analysis (31175/31176)	On Completion of T.Y.B.A. (S4) Syllabus of 'Modern Political Analysis' students are able to-
		• Students will understand the nature & scope of Tradition & Modern Political Analysis.
		• They will get information of Political System.
		• They will know the Interdisciplinary Approach & Human Rights.
		•They will evaluate the role of media in politics.

Department of Marathi

Class	Course	Outcomes
F.Y.B.A.	MAR-111(A)	• Students understand superstitions and it developed scientific attitude towards them along with different aspects of Novel.
	Vangmay Prakarcha Abhyas(Novel)	
	MAR-121(A)	• Students understand elements of Poetry such as words , figure of speech ,images ,Symbols and developed appreciation.
	Vangmay Prakarcha Abhyas(Poem)	• Students come to know the Poetic Tradition in Khandesh.
	MAR-111(B)	• Students understand the use of Marathi as official, Professional Language and its use in the field of Information Technology.
	Upoyojit Marathi	
	MAR-121(B)	• Students acquired communication skills for Personality Development and Applications.
	Upoyojit Marathi	
S.Y.B.A.	MAR-231(A) (G2)	• Students understand the eliments ,nature and types of Novel.
	Vangmay Prakarcha Abhyas(Novel)	
	MAR-241(A) (G2)	• Students got inspired through Autobiography of Dnyaneshwar Mule in 'Mati,Pankh aani Aakash'.
	Vangmay Prakarcha Abhyas(Atamakathan)	
	MAR-232(S1)	
	Madyayugin Paddya Vangmay Prakaracha	• Students got introduction to strategies and principles during the rule of Shivaji Maharaj. Students studies about ethic and behaviours
	Abhyas	
	MAR-242(S1)	
	Madyayugin Paddya Vangmay Prakaracha	• Students understood spiritual democracy saint literature of that era.
	Abhyas	
	MAR-233(S2)	
	Sahitya Swarup Vichar	• Students got introduced to nature,purpose and creativity of literature.
	MAR-243(S2)	
	Sahitya Swarup Vichar	• Students studied comprehension, appreciation and values of literature.
		• Developing literary interest.
T.Y.B.A	MAR-351(G3)	
	Vangmayin Marathi	• Students understood forms and elements of drama.
	MAR-361(G3)	

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	Vangmayin Marathi	• Students understood tradition of personal essays in Mararthi and got aquainted with Sahitya Academy Awards.
	MAR-353(S3)	
	Adhunik Marathi Vangmayacha Itihas	• Students introduced to literary and cultural events during 1920 to 1960 and literary isms
	MAR-363(S3)	
	Adhunik Marathi Vangmayacha Itihas	• Introduction to poetry and its elements.
	MAR-354(S4)	• Students understsnd nature and function of language in human life and mechanism and function of speech organs.
	Bhasha Vidnyan	
	MAR-364(S4)	• Students understood important events in Marathi traditional grammer.
	Marathi Vyakaran	
F.Y.B.Com	MAR-102(B)	• Students bagged the key of success of the successful business tycoons.
	Marathi	
	MAR-202(B)	• Students bagged the key of success of the successful business tycoons.
	Marathi	
S.Y.B.Sc	MAR-231	• Students get enable to understand the outline of the story,characterization and other elements of the given stories as the form of
	Swapna aani Satya	
	MAR-241	• Students are enable to understand the picture of the society and description of the society life form 'Premachya Gava Jave'.Students
	Premachya Gava Jave	also learned the concept of generation gap through this drama.

DEPARTMENT OF HINDI

Class	Course	**Outcomes (Students will be able to)**
FYBCom	HIN 102 - F. Y. B COM - OPTIONAL HINDI	• develop Hindi reading and linguistic comprehension of students.
		• develop interest in literature, fiction and poetry.
		• use their vocabulary for developing moral and social sense in life.
		• make special use of language for their expression..
FYBA	HIN 111 FYBA General Hindi	• Develop the comprehensive ability.
		• Inculcate moral and human values within themselves.
		• Understand the basic forms of fiction and poetry.
SYBA	HIN 231 S.Y.B.A GENERAL 2 :- Short Story	• develop literary tendencies.
		• understand the types of Hindi Short story writing.
TYBA	Play, Essay and Hindi Grammar	• introduce to the minor genres such as One Act Play, Essay and Hindi Prose
		• study Grammar which acquainted them to the correct usage language.
		• use literature to develop their social and moral sense in life.

DEPARTMENT OF GEOGRAPHY

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Class	Course	**Outcomes (Students will be able to)**
FYBA	Paper I Physical Geography I	• Understand the effect of rotation of revolution the Earth
		• Know the internal structure of the earth know the importance of longitudes & latitudes International Date line and Standard time
		• Understand interior structure of the earth
		• Understand Theory regarding of Origin of Continents and oceans
		• Study the formation of Rocks Understand the work of internal and external forces and their associated landforms.
	Paper II Physical Geography II	• Understand the importance of Atmosphere
		• Understand the composition of atmosphere
		• Know Measurement of Atmospheric Pressure and formation of Pressure Belts
		• Understand the types of winds
SYBA	Gg. 231: G2 Human Geography	• Understand the relationship of man and environment
		• Studies of races of man kinds.
		• Understand the modes of life of eskimo, pigmy, gonad ,Bhil And nagas.
		• Importance of Right to Information Acts.
	Gg. 241: G2 Economic Geography	• Study the Human Economic Activities
		• Explain the Weber theory Rostov modal
		• Understand the mineral and power resources
		• Study of the distribution of engineering, cotton sugar Industries in India
		• Study Of India's foreign tread
	G3 Population Geography	• Understand the history of population
		• Understand the types of data
		• Study of distribution and density of population.
		• Get knowledge of population theories.
		• Investigate Current Issues and Problems in India
	G3 Political Geography	• Understand the history of Political Geography.
		• Get knowledge about Evolution of states & nations.
		• Get knowledge of Geopolitical theories.
		• Investigate Problems and disputes in India
FYB.Com	Optional paper geography of disaster	To Understand basic concepts in Disaster Management
		To Understand Definitions and Terminologies used in Disaster Management
		To Understand Types, Categories and impact of Disasters
		To Understand role and responsibilities of different agencies and government in Disaster
		Management
		To understand role of various modern technologies in Disaster Management
		To get information regarding disaster medicine

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FACULTY OF COMMERCE & MANAGEMENT		
Class	Course	Outcomes
B.Com.	Department of Accountancy and Costing	• The Accounting program aims to cultivate in students virtues of commerce professionals to effectively contribute to the needs of the society with
		• Have fundamental knowledge of Accountancy, Auditing, Taxation, Finance, and provide innovative solutions to problems in business.
		• Develop a thorough understanding of Accounts and Finance functions of an organization.
		• Develop financial leadership qualities.
		• Collate and integrate systems of Accounts and Finance.
		• To encourage the students to undertake higher studies and research in commerce and allied disciplines.
		• Be able to communicate their ideas with industry efficiently and effectively.
		• Develop the ability to work at individual level as well as at team level.
		• Be able to integrate latest technology and apply mathematical and statistical tools and techniques.
		• Have skills to develop business models and be responsible global citizens who exhibit cross cultural competent behavior, and ethical values.
		• Become proficient in using information technology and accounting tools in decision making.
	Department of Business Administration	• Problem Analysis And Decision Making Skill Identify, formulate and analyze problems reaching substantiated conclusions using different
		• Managerial And Business competency Demonstrate knowledge and understanding of the management concepts and apply these to one's own work,
		• Communication and Interaction Communicate effectively on various management problems, cases, and legal issues with the team member and with
		• Business in Global Environment An Understanding of the knowledge of contemporary management issues in the global context recognizing drastic
		• Individual and Teamwork Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings to
		• The Manager and society An understanding of ethical issues and responsibilities relating to the impact of the managerial decision in societal and
	Department of Management Studies	• Apply conceptual business foundations to solve practical decision-making problems, both individually and as part of teams using techniques such as
		• Recognize and address ethical issues and values and apply them in organizational settings.
		• A Knowledge of contemporary issues (Social awareness).
		• An ability to recognize the importance of professional development by pursuing postgraduate studies or face competitive examinations that offer
		• An integrated knowledge of and demonstrated ability to perform as management professionals, and will be prepared for continued learning
		• An ability to communicate effectively, both in writing and orally (Speaking / Writing skills).
		• Use information and knowledge effectively: scanning and organizing data, synthesizing and analysing in order to abstract meaning from information,
		• An ability to use current techniques, skills, and tools necessary for managerial practice (Practical managerial analysis skills).
		• An understanding of professional, ethical, legal, financial, marketing, sales, logistical security and social issues and responsibilities (Professional
		• An ability to function effectively on multi-disciplinary teams (Team work).
		• An ability to analyze a problem, identify, formulate and use the appropriate managerial skills for obtaining its solution.
		• An ability to demonstrate a critical awareness of current issues (e.g., diversity, social responsibility, sustainability, innovation, knowledge
		• An ability to develop a systematic understanding of globalization and its impact on people, businesses and the economy.
	Department of Computer Management	• Understand theory of Digital Design and Computer Organization to provide an insight of how basic computer components are specified.
		• Understand the functions of various hardware components and in depth understanding of different stages of instruction executions.
		• An in depth understanding of how different hardware components are related and work in coordination.

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		• An ability to understand computer buses and input/output peripherals
		• Describe the fundamentals of Information Technology (IT) infrastructure components: hardware, software, and data communications systems.
		• Explain the guiding principles of professional behavior in computing.
		• Demonstrate proper file management techniques to manipulate electronic files and folders in a local and networked environment.
		• Use business productivity software to manipulate data and find solutions to business problems.
		• Identify emerging technologies for use in business applications.
		• Complete projects that integrate business software applications.
		• Apply problem-solving skills and the knowledge of computer Management to solve real problems.
	Department of Commerce and Business Law	• demonstrate a grasp of theory, technically based skills and ethical perspectives relevant to core business areas, including marketing, statistics,
		• Show basic understanding of subject matter related to marketing, statistics, financial accounting, management accounting, finance, economics,
		• Develop their own principles on models useful in business and commerce.
		• Show the understanding and ability to apply the subject matter in hypothetical situations.
		• Evaluate strengths and weaknesses, solve problems and make recommendations in business and commercial practices.
		• Show ability to influence people and/or organizations in relation to business and commercial practices.
	Department of Personnel Management	• Students will be familiar with the industrial work environment.
		• Students would know about the man power planning and sustaining the workforce
		• Students will acquire an insight into the role and responsibilities of the Personnel Management function
		• Students will learn about the different systems within Personnel Management viz. Recruitment and Selection, Performance Management,
		• Students will be able to Identify the necessary managerial skills and competencies required for people management and work on an action plan to
BCom	Department of Commerce and Management	• Program Specific Outcomes (Commerce & Management)
		• To build a strong foundation of knowledge in different areas of Commerce.
		• To develop the skill of applying concepts and techniques used in Commerce.
		• To develop an attitude for working effectively and efficiently in a business environment.
		• To integrate knowledge, skill and attitude that will sustain an environment of learning and creativity among the students.
		• To expose students about entrepreneurship.
		• To enable a student to be capable of making decisions at personal and professional level.
MCom		• The students will develop an ability to apply knowledge acquired in problem solving.
		• Ability to work in teams with enhanced communication and inter-personal skills.
		• The students will be ready for employment in functional areas like Accounting, Taxation, Banking, Insurance and Corporate Law.
		• Ability to start entrepreneurial activities.
		• To inculcate ethical values, team work, leadership and managerial skills.
		• Students will exhibit inclination towards pursuing professional courses such as CA/ CS/ CMA/CFA etc.
DEPARTMENT OF CHEMISTRY		
Class	Course	**Outcomes (Students will be able to)**

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Chemistry	CH-111: Physical and Inorganic Chemistry	• Develop an ability to use conceptual and mathematical tools to express and predict atomic and molecular behavior
FY B.Sc.		• Predict atomic structure, chemical bonding or molecular geometry based on accepted models.
		• Convert scientific equation in straight line to get physical parameter for slope and intercept.
		• Understand deviation of real gas from ideal behavior.
		• Understand critical constant and vanderwall's constant.
	CH-112: Organic and Inorganic Chemistry	• Understand the general properties of organic compounds, applications of organic compounds.
		• Understand the Mono functional compounds - Common and IUPAC nomenclature of various type of organic compound.
		• Understand the the alkane by many organic reaction.
		• Understand of S- block Elements of alkali metals and Alkaline earth metals
		• Understand Arrhenius theory, Bronsted- Lowry theory, and Lewis theory.
		• Understand ionic product of water, Buffer solutions.
	CH-113: Chemistry Practical	• Calibrate the apparatus like volumetric flask, pipette and burette.
		• Understand the determination of heat of solution, equivalent weight, surface tension etc.
		• Carry out qualitative analysis of acidic and basic radicals.
		• Learn the applications of types of titrations for various estimations
		• Carry out quantitative analysis by gravimetric method
		• Carry out quantitative analysis by volumetric method
	CH-121: Physical and Inorganic Chemistry	• Identify methods and instruments that can be used to study chemistry
		• Evaluate data generated by experimental methods for chemical characterization.
		• To understand specific and equivalent conductance.
		• To understand cell constant and use of it to obtain specific and equivalent conductance.
		• To know Kolhaurash's law and application of it.
	CH-122: Organic and Inorganic Chemistry	• understand the preparations, reactions and properties of Monohalogen and Dihalogen derivatives of Alkane.
		• understand the preparations, reactions and properties of Alcohol, Ether and Epoxide.
		• understand the preparations and reactions of carbonyl group.
		• understand the preparation of carboxylic acids.
		• determine the Molecular weight, formula weight, equivalent weight of organic compounds.
		• Understand the Electronic structures, size of atoms and ions, ionization energy, metallic and nonmetallic of p block elements.
	CH-123: Chemistry Practical	• Handle viscometer to determine the viscosity and relative viscosity of liquids .
		• Carry out quantitative analysis by instrumental method using Conductometer.
		• estimate of aniline / phenol.
		• Perform qualitative analysis of organic compounds.
		• Carry out quantitative analysis by volumetric method and gravimetric methods
SY B.Sc	CH 231: Physical and inorganic chemistry	• Understand the Electronic structures, size of atoms and ions, ionization energy, metallic and nonmetallic of d block elements.
		• Understand concept of Helmolthz free energy

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		• Understand numerical calculations of Gibbs free energy.
		• Understand concept of vapor pressure of liquids.
		• Understand the concept of physical properties of metals
		• Learn methods of purification of ores.
	CH 232: Organic and analytical chemistry:	• Review the concept of isomers and discuss the isomer which results from free rotation of C-C single bond, from a chirallity, from restricted rotation,
		• Study of amines their formation reactivity.
		• Study of reactivity, preparation and reactions of organo Li, Cu, Zn compounds.
		• Understand the importance of analytical chemistry in analysis of compounds by titrimetric, gravimetric and instrumental methods.
		• Know the importance of sampling methods and ways of interpretation of results of analysis.
		• Determine the causes of errors and their minimization during analysis
		• Learn the application of types of titrations for quantitative analysis of the samples.
	CH 233: Chemistry practical:	• Understand techniques chromatography for separation of components in the mixture.
		• Understand recrystallization for purification of organic compounds.
		• Prepare various inorganic complexes.
		• analyse compounds by titrimetric, gravimetric and instrumental methods..
		• Understand to determine thermodynamic parameter.
	CH 241 Physical and inorganic chemistry	• Understand colligative properties and its application calculation of molecular weight of solutes
		• Understand concept of electromotive force and its measurement
		• Understand about properties of Lanthanides and actinides.
		• Understand concept of s-s, s-p, p-p, p-d & d-d combination of orbitals.
		• Understand about classification of electrodes.
	CH 242: Organic and analytical chemistry	• Understand the synthesis and reaction of 5, 6 member and condensed heterocyclic systems.
		• Understand the synthesis of synthetic reagents and their synthetic utility.
		• Know the mechanism and stereochemistry of E1, E2 reaction.
		• Understand the concept of quantitative analysis by gravimetric methos.
		• Understand the concept for separation of analytes in samples by thin layer, paper and column chromatographic methods.
	CH 243: chemistry practical:	• Carry out qualitative analysis of organic compounds.
		• Determine molecular weight by depression of freezing point method.
		• Handle landsbergers apparatus for determination of molecular weight.
		• Estimate of Nickel and Barium gravimetrically.
		• Make use of potentiometer for determination of standard electrode potential.
T.Y.B.Sc.	CH 351: Physical chemistry	• Understand spontaneous and non spontaneous processes.
		• Understand the importance of salt bridge in electrochemical cell.
		• Understand the concept electrochemical cell and determination of potential of cell
		• Understand the laws of photochemistry (Grothus Draper Law and Stark Einstein law)

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		• Understand the concept quantum yield and fluoresce and phosphorescence from Jalblonski diagram.
		• Understand the various devices to measure the radiation from radioactive sample.
	CH-352: Inorganic chemistry	• Understand the basic concept of the co-ordination compound, and identify the types of given ligand, chelates.
		• Understand the different physical method for the study of complexes and assumptions, drawbacks and isomerism in Werner's theory.
		• Understand Effective atomic number (EAN) and how to calculate EAN for any given complexes.
		• Understand the modern theories of metal-ligand bond related to valence bond theory.
		• Application of CFT related to different geometry e. Square planer, tetrahedral, Octahedral.
		• Understand the basic concept about CFT e. Spin magnetic moment, crystal field stabilization energy related to weak and strong field, limitation of
	CH-353: Organic chemistry	• Understand the modern theories of metal-ligand bond related to Molecular orbital theory. and difference between B.T., C.F.T. and M.O.T.
		• Understand Polarity picture of carbonyl group and nucleophilic addition reaction to it.
		• Introduction concept of aromaticity electrophilic and nucleophilic aromatic substitution reaction.
		• Molecular rearrangement involving migration to C, N and Oxygen.
		• Drawing the resonating structures.
		• Understand Nuclophic substitution reactions.
		• Understanding electrophilic addition reactions.
	CH-354: Analytical Chemistry SEM V	• Understand procedure of extraction of metal ions using Solvent Extraction process.
		• Understand the application of Ion Exchange Chromatography method for the separation of cations and anions using different types of resins.
		• Understand applications of Size Exclusion Chromatography for the separation of analytes based on their size and shapes.
		• Understand the working of Gas Chromatographic unit and apply the knowledge to separate volatile compounds in sample.
		• Understand Principle, choice of column materials for HPLC and its application.
		• Understand Principles of Electrophoresis and choice of techniques of electrophoresis for various applications
	CH-355: Industrial chemistry	• understand general concept of Industrial chemistry.
		• Understand manufacturing of sugarcane.
		• understand general idea of differ physical methods used in manufacturing.
		• understands various types of fertilizer.
		• Understand manufacturing of Beer and spirit.
		• understand the aspects of small scale industry.
	CH 356: B Environmental chemistry	• Understand the concept to awareness about environmental chemistry
		• Understand the concept about atmosphere and different layer and composition
		• Understand the concept. awareness about air pollution and organic inorganic pollutants
		• Understand the concept, water pollution and domestic sewage waste water, industrial pollution agriculture pesticide water pollution.
		• Understand the different methods of water treatment, water effluents and sewage water.
		• Understand the green house gases and global warming.
	CH-357,367: Physical Chemistry Practical	• Prepare molar and normal solutions of various concentrations.
		• determine concentration of unknown solutions by Spectrophotometric method.

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		• Measure the pH, pKa and Ka of various acids by potentiometry.
		• Measure refractive index, molar refraction and unknown concentration of various solvents.
		• Determine the molecular weight of a given polymer by turbidimetry.
	CH 358,368: Inorganic chemistry practical	• Investigate the reaction rate.
		• estimate ores and alloy by gravimetric and volumetric method.
		• Separate and analyze binary mixtures by qualitative method
		• Prepare and determine percent purity of various inorganic complexes.
		• Perform chromatographic technique (paper chromatography).
		• Estimate Lead, Iron by gravimetric method.
		• Estimate Titanium and Iron by Spectrophotometric method.
	CH 359,369: Organic chemistry practical:	• Separate and analyze binary water insoluble mixture
		• Separate and analyze binary water soluble mixture
		• Estimate - acetamide, glucose by volumetric method
		• Estimate basicity of various acids.
		• Prepare various organic compounds.
		• Understand Thin Layer Chromatographic techniques and physical constant.
	T.Y.B.Sc Sem VI CH-361: Physical chemistry.	• Understand the types of spectra, Rotational, Vibration and Electronic energy levels.
		• difference between order and Molecularity
		• Understand the first, second and third order reaction.
		• Understand the concept anisotropic, isotropic, etch figure, polymorphism,
		• Learn concept Photoelectric effect, Compton Effect and Heisenberg's uncertainty principals.
		• Understand the concept of X- ray analysis.
	CH-362: Inorganic chemistry	• understand the electronic structure, Extraction uses, oxidation states biological role of Cu.
		• know about the all basic theory of Acid and bases.
		• understand the concept of Hard and Soft acid bases concept theories, application and limitations.
		• know the different types and theories of Corrosion and how to protect Metal from corrosion.
	CH-363: Organic chemistry	• Understands common terms in spectroscopy.
		• Learn Physical methods of structure determination which includes IR, UV and NMR.
		• Solve the problems based on IR, UV and NMR.
		• understand retro synthesis.
		• predict synthons and reagents.
		• Solve the problems based on retro synthesis.
	CH-364 Analytical Chemistry	• perform the analysis of samples using instrumental methods
		• understand the concepts of spectrometry, know the principles of instruments and their applications
		• understand principle, working and applications of Flame and Plasma Emission Spectrometry.

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		• understand principle, Instrumentation and application of Atomic Absorption Spectrophotometry
		• understand principle, Instrumentation and applications of Turbidimetry and Nephelometry.
		• 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.
		• Understand the process of manufacturing of methanol.
		• Understand the process of manufacturing of soap.
		• Understand the process of manufacturing of detergents.
		• Understand classification of dyes and paints.
		• Understand properties of drugs.
	CH 366: Polymer chemistry	• Understand the basic concepts of polymerization.
		• Understand the different methods of polymerization.
		• Understand various techniques of polymerization.
		• Understand the preparation, properties and applications of PE, PVC, Polystyrene, polyacrilonytrile,
		• Understand the concept Glass transition temperature
DEPARTMENT OF COMPUTER SCIENCE		
Class	Course	**Outcomes (Students will be able to)**
Computer Scien	CS 111 Basics of Computer	• Understand the History of Computers.
FYBSc		• Understand What is Computer and Basic concepts of computer.
		• Aware about various types of Computers, types of input and output devices.
		• Preparation of Algorithm and Flowchart of Program.
		• Learn computer networks, its types and basics of Internet.
		• Understand computer viruses and its types.
	CS 112 C Programming - I	• Develop their programming skills.
		• Be familiar with programming environment with C Program structure.
		• Declaration of variables and constants.
		• Understand operators, expressions and preprocessors.
		• Understand arrays , it's declaration and uses.
	CS 121 Internet Computing	• Understand the Types of Website, it's Structure, Site Organization Model , Site Planning and Testing.
		• Understand how to design website with different website development models.
		• Know the different page types on websites and it's navigations.
		• Designing website using HTML language.
		• Design advanced website using CSS.
	CS 122 C Programming - II	• Design programs using Functions, Pointers , Structures and Unions in C language.
		• Write a program using File Handling
		• Writing programs for drawing different graphical shapes.

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	CS-103 and 203 LAB Course on Paper I&II	• On completion of the course, students are able to develop programs using C to meet real world needs and able to develop their own websites. This
SYBSc	COMP 211 : Data Structure-I	• Know what is data structure and basic algorithmic notations.
		• Analyse the time and space requirement of any algorithm.
		• Understand different linear data structures for conversion of mathematical expressions and polynomial representations.
		• Know the file structures.
	COMP 212 : OOAD & Introduction to C++	• Be familiar with Object Oriented Programming Environment.
		• Differentiate between Structure oriented programming and object oriented programming.
		• Understand different object modelling techniques and analysis like Generalization , Aggregation and Metadata.
		• Write Reusable , Extensible and Robust programs in C++.
	COMP 221 : Data Structure – II	• Know different non-linear data structures that can be used to represent hierarchical relationship between objects.
		• Traverse and represent the graphs in computer.
		• Understand the different approaches of sorting and searching elements in the arrays.
		• Understand different techniques of designing the algorithms.
	COMP 222 : Programming in C++	• Explore polymorphism using Function and Operator Overloading.
		• Write programs for handling runtime errors using exception.
		• Understand the concepts of pointers in C++.
		• Understand the different aspects of hierarchy of classes and their extensibility.
		• Write generic programs using templates and STL.
	COMP 213 and 223 : Practical Course	• On completion of the course, students are able to develop programs using C++ based on object oriented concepts and write the ROBUST.
TYBSc	CS-311 System Programming	• Get aware about system softwares and their tools like Editors and Debug Monitors.
		• Get familiar with language processing activities.
		• Understand detail working of Assembler , Macro and Macro Preprocessor , Compiler and linker & Loader.
	CS-312 Database Management System	• Get aware of Describing & storing data.
		• Know about E-R Model by overview of database design..
		• Get familiar with Conversion of ER to Relational model.
		• Know about functional dependency and Data Normalisation.
		• Understand Database Implementations.
		• Make use of Concurrency control, Backup & recovery for large or huge of databases.
		• Get aware about handling huge databases.
	CS-313 Software Engineering	• Get aware of evaluation of software and Software Development Life Cycle (SDLC).
		• Know about Software Development Model.
		• Get knowledge of Requirement Analysis and Specification in software engineering .
		• Learn use of Fact finding Techniques , Types of Requirement Modeling and Data Modeling Concepts.
		• Get knowledge of Design Concepts in software engineering.
		• Know about Cohesion & Coupling , Decision Table & Decision Tree, Data flow Diagram

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		• Know about Software Coding & Testing.
		• Get aware about Elements of Software Quality Assurance.
	CS-314 Computer Aided Graphics	• differentiate between interactive and non interactive graphics.
		• explore different line and circle drawing algorithms.
		• perform 2D and 3D transformation on different images.
		• know about detail working of image clipping and windowing.
		• understand raster graphics and hidden surface elimination.
	CS-315 Programming in VB.NET	• get aware about .Net platform.
		• understand looping structure, control flow statements and exception handling in VB.NET
		• understand object oriented programming in VB.NET
		• program using ADO.NET
	Elective -B UG-CS-316 B) JAVA Programming	• Get knowledge JDK Environment.
		• Explore polymorphism using Function and Operator Overloading ,overriding .
		• Understand the different aspects of hierarchy of classes and their extensibility .
		• Understand the concepts of streams and files .
		• Write programs for handling runtime errors using exception.
	CS-321 Operating System	• know about functions and services of operating system.
		• aware about different CPU scheduling algorithms
		• get familiar with different memory management techniques.
		• understand different disk and drum scheduling algorithms as well as deadlock concepts.
		• get introductory knowledge about android operating system.
	CS-322 MS SQL Server	• understand features and data types in SQL server.
		• create and manipulate databases for various applications.
		• use procedures and trigger for performing complex operation on databases.
		• handle errors using exception handling concepts.
	CS-323 Internet Programming using PHP	• understand how PHP works with lexical structure of it.
		• program for different applications using arrays, functions and strings.
		• aware about different web techniques used in PHP.
		• integrate PHP with MYSQL.
	CS-324 Theoretical Computer Science	• Understand what is Push down Automata and its applications.
		• understand concepts of Context free grammar and normalization of CFG.
		• convert regular expression to Finite Automata.
		• Design Turing Machines for various applications like enumerator, function computer and universal turing machine.
	CS-325 Computer Network	• understand applications of network, network structures and protocol hierarchy
		• aware about details of physical, datalink, network and transport layer of TCP/IP network model.

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		• understand about different aspects of network security like firewalls, IP security and VPNs.
		• aware about attacks and Confidentiality used in crypotgraphy.
	Elective - B CS-326 B) JAVA Programming-II	• program using graphical user interface with Swing classes.
		• handle different kinds of events generated while handling windows.
		• create programs using menus and dialog boxes.
		• program for websites using applets.
		• understand advanced java concepts like JDBC and servlets.
	CS-Lab-301 Lab on System Programming	• On completion of the course, students are able to develop system programs to provide basic applications for computing like line editor, interrupt
	CS-Lab-302 Lab on Programming in VB.NET,	• On completion of the course, students are able to develop different programs for demonstrating different Computer graphics algorithms like circle.
	CS-Lab-304 Lab on MS SQL Server	• On completion of the course, students are able to develop database management system using features and services provided by MS SQL Server.
	CS-Lab-305 Lab on Internet Programming usin	• On completion of the course, students are able to develop interactive static as well as dynamic websites.
	Elective -A CS-Lab-303 A) Lab on Programmir	• On completion of the course, students are able to develop programs using C# based on object oriented concepts and write the ROBUST.
	Elective -B CS-Lab-303 B) Lab on JAVA Prog	• On completion of the course, students are able to develop efficient programs which provides graphical user interface for easy handling of computers
DEPARTMENT OF PHYSICS		
Class	Course	**Outcomes**
FYBSc	PHY-111: Mechanics and Properties of matter	• Learner will understand basic theorems and concepts of basic physics.
		• To understand the dynamics of different types of pendulum and to determine 'g'.
		• To understand the elastic properties of matter and expression of bending beam with its application as a cantilever.
		• To understand concept of surface tension and its relation with excess pressure and radius of curvature.
		• To determine the surface tension by Jaeger's method from experiments.
		• To understand concept of fluid flow and pressure energy in fluids.
		• To determine Bernoulli's Theorem and its applications: venturimeter, pitot tube.
		• To design experiment to determine coefficient of viscosity by using Poiseuillie's equation.
		• To understand basic theories related with properties of matter and its application to determine values of various physical quantities associated with
		• To develop basic skills to perform experiments to understand the concept from existing theories of Basic physics.
	PHY-112: Electricity and Magnetism	• To understand basic concept of current and current density vector.
		• To understand Kirchhoff's law by loop analysis.
		• To understand and illustrate Network theorem including Thevenin's theorem, Norton's theorem and Maximum power theorem.
		• To determine Time constant of L-R and C-R circuit and its physical significances.
		• To understand the concept of magnetism and and magnetic properties of materials such as Ferromagnetic, Anti ferromagnetic and Ferrimagnetic.
		• To understand the concept of electromagnetic induction, self induction of solenoid, mutual induction of coaxial solenoid
		• To illustrate the working of Inductors in series and parallel
		• To understand the applications of transformers, losses in transformer, and to distinguish between transformers including closed core transformer,
	PHY-121 : Heat and Thermodynamics	• To understand and discuss the results of Andrew's experiment and Amagat's experiments.
		• To determine van der Wall's equation, Critical constants and concept of Bolye's temperature.

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		• Understand basic concept of thermodynamics and to distinguish between work done due to Adiabatic and isothermal changes.
		• To state laws of thermodynamics and concept of internal energy.
		• To understand Carnot's ideal heats engine, Carnot cycle and its efficiency, Carnot's theorem, Otto and Diesel engines with their efficiencies.
		• To state First and Second latent heat equations.
		• To understand Concept of entropy, Change of entropy in Reversible process and Irreversible process, T-S diagram.
		• Knowledge of basic principles of refrigeration methods: Evaporative refrigeration, refrigeration by throttling of gas, vapour refrigeration.
		• To learn basic components of simple vapour compression refrigeration understand its working with Flow diagram.
	PHY-122: THEORETICAL PHYSICS	• To understand Complex number (Addition, Subtraction, Multiplication, Division, Complex conjugate) and Exponential form of complex number.
		• To solve problems using Euler's formula,
		• To state de-Moivere's theorem and to Trigonometrical functions Application of exponential form for power and roots of complex numbers.
		• Be able to solve relevant theoretical problems.
		• To solve partial differentiation.
		• To understand Vector Algebra including Scalar and Vector product Scalar triple product and its geometrical interpretation, Vector triple product
		• To apply vector algebra to interpret physical quantities such as angular displacement, angular velocity and angular acceleration.
		• Application of vector analysis such as vector operator, Gradient, Divergence, Curl of a vector to solve the problems of Physics.
	PHY 103: Practical Physics	• M. of a disc by torsional pendulum.
		• η by torsional oscillation.
		• Determination of acceleration due to gravity by Kater's reversible pendulum.
		• Determination of Y by using flat spiral spring.
		• Determination of ηby using flat spiral spring.
		• To determine Y of rectangular beam by method of bending.
		• To determine Y by vibrational cantilever.
		• Poisson's ratio of rubber by using cord/rubber tube.
		• Determination of coefficient of viscosity of water by Poiseuille's method.
		• Verification of Bernoulli's theorem.
		• To determine the surface tension by Jaeger's method.
		• Thermal conductivity by Lee's method.
		• Thermocouple as thermometer.
		• SECTION-II
		• Verification of Kirchhoff's laws.
		• Verification of Thevenin's theorem.
		• Verification of Norton's theorem.
		• Maximum power transfer theorem.
		• Verification of Joule's law.
		• Determination of time constant of L-R circuit.

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		• Determination of time constant of R-C circuit using charging and discharging of condenser through resistor.
		• To determine efficiency and turns ratio of transformer.
		• Study of spectrometer and determination of angle of prism.
		• Use of analog/digital multimeter.
		• Electric billing with energy meter.
		• Study of I-V characteristics of solar cell.
		• Frequency of a. c. using vibrating wire and magnet.
SYBSc	PHY-231: Waves and Oscillations	• To demonstrate Lissajous figures by mechanical, optical and electrical methods.
		• To understand composition of two S.H.M.s of equal frequencies along same line of vibration, at right angles (analytical method with different cases).
		• To understand Free and damped oscillations.
		• To solve differential equation of damped harmonic oscillator and Energy equation.
		• To demonstrate Resonance and its types- Mechanical resonance (Barton's pendulum), Acoustic resonance (resonance tube), Electrical resonance
		• To solve differential equation of forced oscillations and its solution, and to obtain amplitude, Energy of forced oscillations, Amplitude and
		• To understand concept of sound and to classify sound frequencies.
		• To understand piezoelectric effect, Magnetostriction effect.
		• To learn Generation, Detection and Applications of ultrasonic waves by Piezoelectric and Magnetostriction oscillator.
		• To understand Doppler effect in sound and light and its application.
	PHY- 232 (A): Electronics- I	• To distinguish between P-N diode, Zener diode, LED and Photodiode.
		• To understand Half wave, full wave and bridge rectifiers and filters: capacitance filter, inductor filter and
		• To demonstrate voltage regulation using Zener diode.
		• To understand basic construction and operation of bipolar transistors (NPN and PNP),
		• To distinguish between transistor circuit configurations (CB, CE, CC), current gains (
		) and their interrelationship.
		• To solve problems of electronics using decimal and hexadecimal number system.
		• To learn logic gates and to design R-S, clocked R-S, D , JK and T flip flops using logic gates.
		• To state De Morgan's theorems and understand symbols, Boolean expression and truth tables for gates.
	PHY- 232 (B) - Instrumentation -I	• To understand standards of measurements and calibration.
		• To learn measurement of temperature using: Non - electrical, Electrical and Radiation Methods.
		• To learn measurement of pressure using McLaud Guage (b) Pirani Gauge.
		• To learn Measurement of flow using: Venturi tube, Pitot tube and Rotameter .
		• To understand characteristics of sound and to know typical sound measuring system.
		• To learn Measurement of magnetic field by using search coil method and Hall gauge meter.
	PHY – 241: Modern Physics	• To solve problems associated with energy crisis by means of photo thermal conversion and photovoltaic conversion.
		• To demonstrate construction and working of flat-plate collector, liquid flat plate collector, Basic photovoltaic system and solar modules for power

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		• To understand Laser, its types, applications - Ruby LASER, He-Ne LASER.
		• To verify experimentally of discrete atomic energy levels and correspondence principle
		• To understand atomic spectra and distinguish classical planetary model and Bohr's theory of hydrogen atom and quantum mechanical Bohr's
		• To understand matter wave, concept of wave group, and relations between phase velocity, group velocity, particle velocity.
		• To demonstrate Davission and Germer experiment.
		• To understand Uncertainty principle and its application in Non existence of electron in nucleus, determination of ground state of electron and size of
	PHY-242: Optics	• To learn Power of lens, Spherical aberration in lens, and to distinguish Chromatic aberration and Achromatism aberration.
		• To understand concept of interference pattern due to reflected light in parallel sided thin films and in thin wedge shaped film.
		• To demonstrate experimental set up for Newton's rings, theory and its application to determine wavelength of source and refractive index of liquids.
		• To demonstrate Michelson Interferometer (experimental setup and its application for measurement of wavelength of monochromatic source).
		• To distinguish between Fresnel and Fraunhoffer diffraction.
		• To understand theory of plane transmission grating and its resolving power.
		• To state Brewster's law and Maluss law for polarization by double refraction in crystals.
		• To understand Construction of Polaroid, Quarter and Half wave plates, Nicol prism.
		• To learn production and detection of circularly and elliptically polarized light
		• To demonstrate principle and working of Polarimeter or Sacherimeter.
	PHY 233: PRACTICAL COURSE-I	• Determination of the decrement factor by using Logarithmic decrement (in air / water).
		• Study of acoustic resonance by using bottle as a resonator.
		• Determination of velocity of sound by using Kundt's tube.
		• Study of electrical resonance by using series L-C-R circuit.
		• Study of acoustic resonance by using resonance tube.
		• Study of resonance using Kater's pendulum.
		• Comparison of capacities by De Saughty's method.
		• R, Γ, Q using damped harmonic motion.
		• Demonstration of Lissajous figures by using C.R.O.
		• (ELECTRONICS)
		• Study of full wave rectifier with capacitor filter and to calculate its ripple factor.
		• Study of zener diode as a voltage regulator.
		• Study of CE transistor characteristics to find out 'β' of the transistor.
		• Study of logic gates (AND, OR and NOT) using diodes and transistors.
		• Verification of De Morgan's Theorems (using ICs).
		• To study the characteristics of Light Emitting Diode (LED).
		• Experimental verification of NAND gate as a universal building block.
		• Experimental verification of NOR gate as a universal building block.
		• To study I – V characteristic of (a resistor and (a p–n junction diode and compare it.

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		• Frequency response of CE single stage transistor amplifier and to calculate its bandwidth.
		• OR
		• SECTION-II
		• (INSTRUMENTATION-
		• 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
		• To obtain Lissajous figures using C.R.O.
		• To determine characteristics of Thermistor and to find an unknown temperature by using thermistor.
		• Measurement of magnetic field by search coil.
		• Measurement of magnetic field by hall probe method.
		• Directional characteristics of a microphone.
		• Platinum resistance thermometer. (Determine the melting temperature of Wax)
		• Velocity of sound by phase shift method.
		• Measurement of Noise by Using Sound Pressure level Meter.

DEPARTMENT OF MATHEMATICS

Class	Course	**Outcomes**
FYBSc	MTH-111: Theory of Matrices:	• Understanding of operations on matrices
		• Understanding the concept of inverse of a marix
		• Matrices are used in solving linear equations.
		• Linear equations are vital for solving any differential equations
		• Many areas of Numerical analysis depend upon linear equations.
		• Specific fields of applications are computer graphics, Cryptography etc.
	MTH-112: Calculus of one variable	• It is used in almost all branches of engineering.
		• It is a science that deals with rate of change.
		• Understanding the concept of differentiation.
		• Understanding the concept of Integration.
		• Applications of differentiation include measuring velocity, acceleration, etc.
		• Applications of Integration include estimating areas, volumes, etc.
	MTH-113(B): Discrete Mathematics:	• Understand the basics of graph theory.
	graph theory	• To learn operations on graphs.
		• To learn about connected graphs.
		• To understand various problems related with planar graphs
		• To understand trees and spanning trees.
		• It is used in Genomics, networks, etc.
	MTH-121: Ordinary Differential Equations:	• To understand the necessity of differential equations
		• To learn about forming differential equations from physical situations

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		• To know various types of differential equations
		• To practice methods of solution for various types of differential equations.
		• It is useful for methods of momentum and energy transfer.
		• It is used in all branches of engineering.
	MTH-122: Theory of Numbers and equations:	• To know about number system
		• To learn division algorithm and its application
		• To know about congruence classes
		• To understand the famous Fermat's theorem .
		• To learn how to solve various types of equations.
		• It is used in Cryptography, Computer Science, etc.
	MTH-123(B): Numerical Methods:	• It is used for solving a system of equations
		• It has application in all branches of engineering.
		• To know how to find the roots of transcendental equations.
		• To learn how to interpolate the given set of values
		• To understand the curve fitting for various polynomials
		• T learn numerical solution of differential equations.
SYBSc	MTH 211:Calculus of Several variables :	• It is used in almost all branches of engineering.
		• It deals with calculus of several variables.
		• To understand the importance of Taylors series.
		• To understand Mean value theorem.
		• To find area by double integration.
		• To find volume by triple integration.
	MTH-212(A): Abstract Algebra:	• Algebra is science of operations
		• It is widely used in Computer science and T.
		• It is also useful for logic and fuzzy set theory
		• To understand the concept of groups.
		• To learn homomorphism and isomorphism.
		• To under the structure of ring and integral domain.
		• It is widely used in Fluid Mechanics and Electrical engineering.
		• To learn properties of complex numbers.
	MTH 221:Complex Analysis :	• To understand the use of complex numbers in the field of Calculus.
		• To learn the importance of analytic functions.
		• To gain knowledge of singularities and residues.
		• To apply the knowledge of residues in complex integration.
		• To study properties of Beta and Gamma functions.

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	MTH 222(B) : Differential Equations and	• It is useful for methods of momentum and energy transfer.
		• To study existence and uniqueness about solutions.
		• To learn about the simultaneous differential equations.
		• To understand the methods of solution for total differential equations
		• It is widely used in Civil engineering , Mechanical engineering, etc.
		• To understand definition and properties of difference equations.
		DEPARTMENT OF BOTANY
Class	Course	**Outcomes (Students will be able to)**
F.Y.B.Sc.	BOT.11BACTERIA, VIRUSES AND ALGAE	• Understand the diversity among Bacteria, Viruses and Algae.
		• Know the systematic, morphology and structure, of Bacteria, Viruses and Algae.
		• Understand the life cycle pattern of Bacteria, Viruses and Algae.
		• Understand the useful and harmful activities of Bacteria, Viruses and Algae .
	BOT. 112. PLANTS FOR HUMAN	• Understand the role plants in human welfare.
		• Gain knowledge about various plants of economic use
		• Know importance of plants & plant products
		• Understand the chemical contents of the plant products
		• Know about the utility of plant resources
	BOT.12FUNGI. LICHENS AND PLANT	• Understand the Biodiversity of Fungi
		• Know the Economic Importance of Fungi
		• Understand the features of Lichens
		• Know the terminologies in plant pathology
		• Understand the scope and importance of Plant Pathology
		• Know the control measures of plant diseases
	BOT.122. INDUSTRIAL BOTANY	• Gain thorough knowledge about various plant groups from primitive to highly evolved plants
		• Become aware of applications of different plants in various industries
		• To highlight the potential of these studies to become an entrepreneur
		• To equip the students with skills related to laboratory as well as industries based studies
		• To make the students aware about conservation and sustainable use of plants
		• To create foundation for further studies in Botany
		• To address the socio-economical challenges related to plant sciences
	BOT:103 PRACTICAL COURSE (BASED	• Understand the morphological diversity among Bacteria , Viruses, Algae and Fung
		• Observe vegetative and reproductive parts of various life forms of Bacteria, Viruses, Algae and Fung
		• Detect chemical contents in various plant products of economic use.
		• Know botanical source/s, characteristics and utilities of Plants/ plant products.
		• Learn about the industrial applications of various plants and plant products.

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		• Visit nearby locality to observe algal and fungal diversity as well as plant diseases occur in nature and make a report of it.
		• Visit either of the industries and prepare a scientific report.
S Y Bsc	BOT.-231: Bryophytes and Pteridophytes	• Understand the morphological diversity of Bryophytes and Pteridophytes.
		• Understand the economic importance of the Bryophytes and Pteridophytes.
		• Know the evolution of Bryophytes and Pteridophytes.
	BOT.-232: Morphology of Angiosperms [60	• Understand the habit of the angiosperm plant body.
		• Know the vegetative characteristics of the plant.
		• Learn about the reproductive characteristics of the plant.
		• Understand the plant morphology.
	BOT.-241: Plant Physiology	• Know importance and scope of plant physiology.
		• 2Understand the plants and plant cells in relation to water.
		• Understand the process of photosynthesis in higher plants with particular emphasis on light and dark reactions, C3 and C4 pathways.
		• Understand the respiration in higher plants with particular emphasis on aerobic and anaerobic respiration.
		• Learn about the movement of sap and absorption of water in plant body.
		• Understand the plant movements.
	BOT.-242 Taxonomy of Angiosperms	• Understand the diversity of angiosperms.
		• Understand the comparative account among the families of angiosperms.
		• Know the economic importance of the angiosperm plants.
		• Understand the distinguishing features of angiosperm families.
DEPARTMENT OF ZOOLOGY		
Class	Course	**Outcomes (Students will be able to)**
FYBSc	ZOO-111 Non Chordates-I	• Understand the evolution, history of phylum.
		• Understand about the Non Chordate animals.
		• To study the external as well as internal characters of non chordates.
		• To study the distinguishing characters of non chordates.
		• Understand the economical importance of Molluscs.
	ZOO-112 Cell Biology	• Understand the Scope of cell biology, because cell is the basic unit of life.
		• Understand the Main distinguishing characters between plant cell and animal cell.
		• To study and understand the whole cell organelles with their structure and function.
		• Understand the cell cycle and know the importance of various cells in body of organisms.
		• Understand the various applications of cells by using cell biology like study of various types of tumour.
	ZOO-121 Chordate-I	• Understand the phylum Chordate.
		• Understand the basic concepts about chordates.
		• Understand the external morphology and sexual dimorphism in chordates.
		• Study and understand the various systems, adaptation and dentition in Mammals.

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	ZOO-122 Applied Zoology I	• Understand the concepts of Goatary and Lac culture.
		• Understand the various Indian breeds and their distribution and characteristics of Goats.
		• To aware the students about Goatary and its economical importance.
		• Understand the Various concepts in Lac Cultivation.
		• To know the Economical importance of lac Cultivation.
		• This is a job oriented subject.
	ZOO-111 Non Chordates-I-Sem-I	• Understand the various internal systems like Digestive system, nervous system with the help of charts.
		• Understand the functions of Gemmules and spicules.
		• Understand the economical importance of Molluscan shells.
		• To study and understand the classification of whole phyla includes in Non chordates with the help of charts/models/pictures.
		• Understand the evolutionary history of Non chordates.
	ZOO-112: Cell Biology Sem-I	• Understand the Animal cells and various cell organelles by using microphotographs.
		• Understand the concept vital staining , distinguishing points between nuclear stain and cytoplasmic stain.
		• Understand the techniques using for the study of blood corpuscles.
		• Understand the meaning of Osmotic pressure, isotonic, hypotonic, hypertonic.
	ZOO-121: Chordate-I Sem-II	• Understand the Systematic position and external morphology of Calotese versicolar.
		• Understand and study the various systems like Digestive systems
		• To study and understand the Scales, Fins, Arial adaptation and Dental formula.
		• Understand the Classification various classes of phylum Chordate e.Pisces, Reptiles. Aves and Mammals.
		• Compulsory visit to any Ecosystem gives more knowledge to the students.
	ZOO 122: Applied Zoology I Sem-II	• Understand the concept of Goatary and Lac cultivation.
		• To study and understand the various diseases and treatment of Goats.
		• Observation of Lac Producing insects and their life cycle.
		• Understand the various techniques of isolation of seed lac from raw lac.
		• Compulsory visit to the Goatary and Lac Cultivation Industry gives more knowledge to the students.
SYBSc	ZOO 231: Non Chordates-II	• Understand the Characters of class Asterias with help of animal Sea star.
		• Understand the internal as well as external morphology of that animal.
		• To study and understand the concepts-Metamorphosis, regeneration and autotomy.
		• Understand the Mouthparts of insects.
		• Understand the Canal system in sponges.
		• Understand the Locomotion in Protozoa.
		• To observe and study the Foot in Mollusca.
	ZOO 232: Medical Zoology	• To study and understand the scope and branches of Medical Zoology.
		• To aware the students for various parasites and diseases which spreads in human with the help of study of host-parasite relationship.
		• To increase awareness for the health in students.

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		• Understand the various disease causing vectors like Mosquitoes.
		• To aware about the typhoid, cholera like disease.
		• Understand the importance of medical diagnostic and also understand the term forensic Entomology.
	ZOO 241: Chordates -II	• To study and understand the external as well as internal characters of class Aves,by studying animal Columbia livia domestica.
		• Understand the various systems of pigeon.
		• Understand the General Topics like Accessory respiratory organs in fishes.
		• Able to know the reptiles of Mesozoic era.
		• Understand the adaptations in aquatic mammals.
	ZOO 242: Applied Zoology	• Introduce the term apiculture to the students.
		• To aware the students and provides the economical importance of Apiculture.
		• Understand the Bee keeping equipments and apiary management.
		• To study and understand the various species of Bees.
	ZOO 233: Practical Sem-I	• Understand the external characters and water vascular system in sea star .
		• Understand the locomotion in protozoa and Modification of foot in molluscs.
		• To understand the viruses like chikungunya. Swine flu, tetanus.
		• To aware the students for virus carrying vectors, like Aedes, culex and anopheles.
		• To understand the various diseases diagnostic methods.
	ZOO 243:Practicals sem-II	• Study of Evolutionary history of animals.
		• Study and understand the types of fins.
		• Understand the adaptation in Aquatic mammals ex. whale and seal.
		• Study and understand the diseases, pest, parasites and predators of Honey Bee.
		• To study and aware the students for honey bee products and their uses.
		• To aware the students for Adulteration.

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