Mohamed Sathak College of Arts and Science,

Sholinganallur, Chennai-600119

B.A.ENGLISH –Programme Outcome

The Students are expected to get acquainted with the Literature that has deep relevance with Historical, Geographical and the Culture of a Society and its Origin.

The Students are expected to equip themselves with the Potential to analyze and critically evaluate even the complex concepts such as Literary Theories and Criticism from a wide range of Genres.

The Students will have the ability to comprehend the texts of multiple theories from remarkable Eras, as well as interpret them and provide new panorama of Values by explaining the Literal and Theoretical applications of those Ideologies.

The Students would come to wield their acquired knowledge into productive Outcomes such as producing analytical essays, research papers, reflective writing, and even critical reviews of Primary as well as secondary sources of multiple Genres.

As Literature is based on both Subjective and Objective Aspects of Life, the Students will be able to Understand, interpret many of such collective outcomes of individual and social emotions that emanate from Political, Social and Cultural perspectives. They will be able to perform a complex dissection of the Human values and lay bare the distinct facts.

Upon a total observation of their Capacity, we will be able to see their honed skills in a Lively Animation while they work and present colorful results on Prose, Poetry, Drama and Fiction after a thorough scrutiny. They can research upon the origin of various Movements, Trends and even the Trendsetters. They can track the

transformation of those ideas through the ages and record their impact on the Individual and Social life of Humans during several stages and also reinterpret known and complex Literary Criticisms in their reviews and research papers. With such amassed observations they can definitely produce new theories on the Linguistic and Grammatical system of a language and offer successful experiments in the learning process of LSRW too. They are certain to learn the Scope of employability and entrepreneurship in the field of Media and Journalism, Teaching, Public Relations, Human Resource, Civil Service, Creative Writing etc.

Home Science-Clinical Nutrition & Dietetics

The students will learn different principles, common food preparation methods and chemistry underlying the properties of various food components. Student gain knowledge on food groups, food pyramid and understand cooking methods with the application in balanced menu planning.

The student will utilize knowledge from foundational sciences as a basis for understanding the role of food and nutrients in health and disease and apply knowledge of biochemistry and physiology to human nutrient metabolism.

Students will have a strong foundation in nutritional programmes and policies to overcome malnutrition. Student understand the role of national, international and voluntary nutritional organizations to combat malnutrition and able to organize community nutrition education programme.

The course will help the student to understand the principles of clinical nutrition and to correlate with the biochemical findings

The new syllabus change brings in additional subjects such as Principals of Interior Decoration, Public Health and Nutrition, Fundamentals of Textiles and Clothing and Family Management and Counselling.

The course will enable the students to apply nutrition indicators for different public health purposes, including: estimating prevalence, monitoring and surveillance, and investigating diet and disease relationships, identifying at-risk individuals and groups, and evaluating programs.

The course will help the students to identify the elements and principles of design and their applications.

The course will help the student to know about the meticulous details of textile and can identify the careers in textile and fashion industry.

The course will enable the students to understand the concept, functions and factors associated with family and understand the underlying principles of counselling and acquire the basic skills and techniques for counselling.

The course will learn about the importance of entrepreneurship as an effective way to a "White collar" job.

PG Dept of Electronics Science

In recent years, electronics the world over, has made unprecedented growth in terms of new technologies, new ideas and principles. The rate of obsolescence of technologies also has been extremely high. Researchers, academicians, industries and the society at large have to work in unison to meet the challenges of the rapidly growing discipline. The research organizations and industries that work in this frontier area are in need of highly skilled and

scientifically oriented manpower. This manpower can be available only with flexible, adaptive and progressive training programs and a cohesive interaction among the research organizations, academicians and industries. Since its inception in 1984 the Department of Electronic Science at Pune University has been consistently working towards this goal.

The Department of Electronic Science is an integral part of the Pune University. It is producing post-graduates and doctors of excellent caliber. The well-equipped laboratories form the backbone of the department by contributing significantly to the practical adeptness of the students. The department offers courses, which are industrial as well as research oriented.

http://www.unipune.ac.in/dept/science/electronic_science/es_webfiles/profile.htm

The Department of Electronic Science was established in 1985 and is widely recognised as one of the most prestigious Electronic Science Departments in the country. The Department is conducting courses leading to M.Tech in Microwave Electronics and M.Sc. in Electronics. The aim of these programmes is to provide the necessary theoretical background and practical experience in order to meet the requirements of the R&D Organizations and Industries. All students joining the M.Sc. course are required to undergo summer training in the Industry or R&D Organisations. In addition, the M.Tech and M.Sc. students work for one Semester on projects in collaboration with Industry and R&D Organisations. The curriculum of these courses is updated regularly to keep it in consonance with the changing industrial environment. The interface with the Industry is further enhanced by an annual seminar under the Visitor's Programme in which professionals from industry, R&D organizations and academics are invited. Our alumini, now spread

over a large number of government and private organisations, facilitate these interactions.

M.Sc. Electronics

The M.Sc. program which follows the B.Sc.(H) Electronics aims at training the students in the area of Semiconductor Electronics, Digital and Analog Electronics, DSP, Material Science and IC Technology. The students also have undergone courses in computer oriented numerical techniques and computer aided analysis of electronic networks. The objective of this course is to produce professionals for the industrial needs. Keeping this in mind the students are required to undergo two months summer training and a comprehensive six months project work.

The course is designed with a view to catering to the present day requirements in Industries, R&D fields, Higher studies and Self-employment. Moreover the course structure intends to inculcate strong laboratory skills so that the student can take up independent projects which will help to be an enterpreneur. The students passed out from the revised course will serve as quality human resource to take up the state of art research work of the Department.

This course provides exposure to the students to the technologies in-vogue and trains them to take up projects relevant to the industrial needs, the R& D activities and self employment opportunities.

In addition the course caters to the requirements of providing complete exposure to NET/SET syllabus for Electronics farmed by the U.G.C.

Download Course Details

http://du.ac.in/du/index.php?page=news

Library

Department provides students with an inbuilt library facility which has about 2827 books on latest topics, magazines and 1 journals and other reference material.

Teaching labs

- **Basic Circuit and Devices Lab**
  This lab has many test and measurement instruments, Digital and analog Oscilloscopes, Curve Tracer, Hall Effect measurement setup, Four-Probe setup and a number of kits for digital and analog circuits.

- **IC processing Lab**
  This lab has a thin film-coating unit and PECVD system, deionised water plant, mask aligner, laminar flow chemical bench, photoresist coater, diffusion, oxidation and annealing furnaces and other facilities for IC fabrication.

- **VLSI Design Lab**
  This lab has different software tools mentioned below for design of ICs
- **Mentor Graphics** – 30 Licenses for digital design and for backend design including IC layout
- **MATLAB** – 5 Licenses for use in Communication and DSP based design

- **IMAGE**
- An open source based digital IC lab with a 1 million gates FPGA board with shared capabilities is also the part of this lab

- **Electronic Communication Lab**
  This lab is intended to give practical exposure to the Microwave techniques and Communication techniques. It has microwave benches and communication kits to perform the basic and advances experiments

- **Microprocessor and embedded systems Lab**
  This lab is well equipped with 8086 microprocessors kits as well as 8051 microcontroller kits. The cross-assembler for 8086 and 8051 are also available, so that the kits can be connected to the PC and it easier to program them

- **Device and Material Characterization Lab**
  This lab has a Atomic force Microscope, a Surface Profilometer, Keithley simultaneous C-V analyzer, Keithley Programmable Electrometer, Le-Croy Digital Storage Oscilloscope, Digital and Analog high frequency Oscilloscopes, Logic Analyzer, Ellipsometer, Scanning probe Microscope, UV-Vis Spectrometer, XRD and other test and measurement equipment

Nano Simulation and Technology Lab:
This lab has different software tools mentioned below:
1. MEMS Microheater Tool : Sensimer : This Tool is used for

to measure the temperature of heated membrane.

2.MEDEA : This Tool is used for Material Modeling and Simulation with 5 licenses.

3.MATLAB : 4 Licenses for use in semiconducting properties based design.

4.COMSOL 4.4 : This Tool is used for Simulation and Modeling design with 4 licenses.

5.TURBO 'C' : An open source tool for familiarization with C.

***MEMS Design Lab :**

Department has a well established MEMS Design lab consisting of following Design tools :

1.Coventor Ware – 2 Licenses

2. Intellosuite – 5 Licenses

3.Comsol Multiphysics – 30 Classkit Licenses

This lab was set up as part of National Programme on Materials and Smart Structures(NPMASS) funded by ADA, Banglore

Other facilities

The department provides consultancy services to the electronics industries in the neighbourhood. The faculty members and supporting technical staff have undertaken some industry sponsored consultancy projects to help design, develop and improve the performance of certain products. The department has potential to undertake industrial projects in various areas of design and development of digital systems, microprocessors based process control systems, software development, FPGA based ASIC design, thin film coating, MEMS and vacuum systems etc. The department has a well equipped Test

and Measurement Lab and computer facilities to undertake testing and characterization of electronic instruments and devices.

PLACEMENT CELL

The department has an internal placement cell under the guidance of a senior teacher.This cell prepares the placement brochures and arranges campus interviews for placement and training. It also arranges talks by experts from industry and facilitates interaction between students and industries. This cell has been successful in placing the students in many reputed industries and institutes.

BCA – Programme Outcome

A learner get foundation of computing principle and business practice for effectively using and managing information systems and enterprise software. The learner will get the knowledge of internal architecture and functionality of system which guide them in developing system software and utility software and also gets the knowledge to work towards hardware development industry. Students get the programming knowledge through which gets the practical experience of application development. The students specialize in legacy application software, system software or mobile application development. The students will growth to the dynamic developments of electronic world. The project based learning inculcate the research aspect and gives practice towards society need.

PG Department of B.Sc Computer Science

Name: Formal languages (Python & Java Data structures)

Academic year : 2020 - 2021

Program Specific Outcomes (PSO)

PSO1: Ability to incorporate standard practices and technological advancements in software development life cycle.

PSO2: Expertise in providing optimized algorithmic solutions.

PSO3:Expertise in recent technologies like SMAC(Social, Mobile, Analytics, Cloud), Machine Learning and IOT.

PSO4: Demonstrate skills in ideation, innovation and commercialization of IT products and services

Course Outcomes (CO)

Course Name	Course Outcomes
Programming in Java	CO1: Describe the features of Java CO2: Design classes with object-oriented features CO3: Describe advanced features of Java like exception handling, multi- threading etc. CO4: Write programs in JAVA featuring its core capabilities

Programming in Python	CO1: Read, write, and execute simple Python programs. C02: Write simple Python programs for solving problems. CO3: Decompose a Python program into functions, lists etc. CO4: Read and write data from/to files in Python Programs CO5: Underline the use of package

B.COM (INFORMATION AND SYSTEM MANAGEMENT)

Course Leering Out comes:

The objective of the course is to impart high quality of education and prepare the young Students to challenge the world by bridging commerce and computer application.

Our graduates will develop and deploy IT to create value for their business.

Our Information system course offer a unique blend of technology and management.

The students are also trained on personality development and communication skills and they are motivated to do project work. It maintains a good industry and institutional interaction.

Training in computer applications in the field of commerce is an extra mileage in placements.

DEPARTMENT OF MATHEMATICS

2.6.1 Program outcomes, program specific outcomes and course outcomes

for all programs offered by the institution are stated and displayed in website of the institution

(to provide the weblink)

B.SC(Mathematics) – 45 students completed the course and passed in 2019-2020. Among them 16 opted and joined in Higher Studies(M.SC.,MBA.,B.ED,LLB etc.), 5 joined in jobs and 24 preparing for competitive exams like TNPSC,NET etc.

M.SC(Mathematics) – 17 students completed the course and passed in 2019-2020. Among them 1 opted and joined in Higher Studies(M.SC.,MBA.,B.ED,LLB etc.), 1 joined in job and 15 preparing for competitive exams like TNPSC,NET etc.

B.Sc. Psychology

Programme/ course outcome

- To provide a fundamental training in the basic principles of Psychology and create

awareness about the various fields which employ these principles.

- To create pioneering research that can pave new insights into the field of mind and
- behaviour.
- To empower students to become career-ready and guide them towards a lucrative career

Course Learning Outcomes (CLO) 2020-2021

SEM	Course Code	Course	Course Title	Course Learning Outcomes (CLO)
I	ST21A	Core Paper I	General Psychology - I	The students will learn the scientific and theoretical underpinnings in each psychological process in human mind and behavior. Topics like learning, perception, memory etc. are dealt elaborately.
	ST21B	Core Paper II	Biological Psychology– I	This paper will facilitate the students to gain knowledge about the complex biological process behind each psychological process. Topics like nervous system, synaptic transmission etc. are elaborated.
	ST31A	Allied Paper I	Introduction to Indian Psychology	The students will be able to outline the fundamental concept of Indian Psychology in comparison with Western Psychology concepts and examine various concepts of Indian Psychology on Personality and states of consciousness through Upanishads, Nyaya, Advaita Vedanta etc.
II	ST22A	Core Paper III	General Psychology - II	The students will learn the scientific and theoretical underpinnings in thinking, intelligence, personality, motivation, emotion etc. elaborately. Psychology of oneself also

				emphasized.
	ST22 B	Core Paper IV	Biological Psychology– II	Students will learn the biological basis of sleep, dreams, sensory systems, brain damage, motor control etc. in this paper
	ST32 A	Allied Paper II	Introduction to Community Psychology	The students will be able to define and explain the core values of community psychology in Indian context and appraise the role of human development and family structure on Mental Health.
III	SAT3 A	Core Paper V	Developmental Psychology - I	The student will be able to understand the physical, motor, sensory, emotional, perceptual and other developments across the human life stages like conception, infancy, early childhood, adolescence
	SAT3 1	Core Paper VI	Experimental Psychology (Practical)	The student will gain hands on experience in observing, recording and interpreting the human behavior in a given environmental setup. This paper will enhance the students' employability skills.
	SBT3 A	Allied Paper III	Statistics in Psychology	This paper will help the students to employ statistical tests while interpreting the cause of human behavior with massive numerical data. This paper enlightens about facilitating

				research analysis.
IV	SAT4 A	Core Paper VII	Developmental Psychology - II	Students will learn the characteristics, developmental tasks, physical development, sensory and motor development, intellectual development, hazards etc. elaborately during the human life stages like adulthood, middle age, old age.
	SAT4 1	Core Paper VIII	Psychological Assessment (Practical)	The students will gain hands on experience in collecting, summarizing and analyzing the quantitative data. This clearly encompasses only paper and pencil tests. This paper will enhance the students' employability skills, research skills, analytical skills etc.
	SBT4 A	Allied Paper IV	Marketing and Consumer Behaviour	Students will have a strong foundation in applying psychological principles in advertising, so that the benefits will get quantified.
V	SAT5 A	Core Paper IX	Psycho pathology - I	This core paper will throw light on pathological conditions of human mind and behavior. Classification of disorders, diagnoses, treatment, therapies especially of anxiety disorders, dissociative and somatoform disorders are studied elaborately.
	SAT5	Core	Psycholog	The students will gain knowledge in the

	B	Paper X	ical Research and Measurement	research steps like data collection, analysis, sampling, report writing etc. Thus they can master their research skills.
	SAT5C	Core Paper XI	Applied Psychology	The students will learn the method of applying psychological principles in .various domains like industries, clinic, community, health, environment, medicine etc. They will apply psychology wherever human beings exist.
	SAT5D	Core Paper XII	Social Psychology I	Students are enlightened on how people's thoughts, feelings, and behaviours are influenced by the actual, imagined or implied presence of others. Topics like cognition, attitudes, conformity, interpersonal attraction, altruism etc. are discussed.
	SET5A	Core Elective I	Health Psychology	The students will learn about the effective ways of promoting health like cognitive and behavioral approaches, health enhancing behaviors, health compromising behaviors, health habit modification etc.
	SAT5Q		Case study	The students will learn the way to record the development of a particular person, group, or

				situation over a period of time as a research.
VI	SAT6 A	Core Paper XIII	Psychopathology - II	The students will learn about the clinical features, causes and treatment of mood disorders, schizophrenia, personality disorders, addiction disorders, sexual variants and sexual dysfunctions.
	SAT6 B	Core Paper XIV	Organizational Psychology	The student will gain knowledge on organizational structure, culture, team, leadership, communication, work motivation, work environment and job satisfaction
	SAT6 C	Core Paper XV	Social Psychology II	The students will learn the basics of group dynamics, aggression, prejudice, conflict and peace making. Applying social psychology in the legal system, health, sports , media etc, also emphasized.
	SET6 A	Core Elective II	Counselling and Guidance	Students will understand the different approaches in counseling, counseling processes, educational and vocational guidance etc. elaborately.
	SET6 B	Core Elective III	Human Resource Managem	Students get to be aware about the recruiting, selecting, training and development, performance assessment and compensation

			ent	benefits in Human Resource Management.
	CES6Q		Extension activity	This paper is the final report of applying psychological principles in any domain. It also helps to enhance research skills.

Department of B.Com (Computer Application)

Course Details for B.Com (Computer Application)

In 1992, Mohamed Sathak Trust established **Mohamed Sathak Industrial Training Institute** at Kilakarai, with the purpose of offering training to technical personnel at the basic level. This institution offers in Automobile Engineering, Draughtsmanship, Carpentry and Electronics for fitters. Mohamed Sathak Trust approached the Government of Tamil Nadu and University of Madras for establishing a college of Arts and Science in the city of Chennai. The Government of Tamil Nadu accepted the proposal of Mohamed Sathak Trust and granted permission for the establishment of **Mohamed Sathak College of Arts and Science**, under self-financing scheme(vide GO. Ms.o. 1125, dated 6th August 1990). Further, B.Com. Computer Application is started from the academic year 2014-15.

Objective - To enrich the accounts with computerized knowledge to the students for the suitability of job opportunity provided by modern Industrial sectors.

Admission Eligibility:

As per the University of Madras Rules and Regulations to admit the degree of B.Com (Computer application) +2 pass in the group of Computer Commerce and Accounts.

Course speciation

In addition the B.Com CA students studying specialized knowledge, Tally, C++, Java, Web Technology and Information Technology

Scope of the Studies

- **M.Com (All Branch)**
- **MBA (All Branch)**
- **CA, ICWA, ACS, etc**
- **To attend all competitive Exam including UPSC, State Board Job Exam etc**
- **Software Development**
- **Web Designer**
- **Accountant with Tally knowledge**

Placement:

Students of **B**.Com with **Computer Application** are having an opportunity of getting placed in organizations like Banks, BPO, MNC, IT and ITES Industries. Other job prospects include railways, PSU jobs, Income Tax Department etc. They can prepare for IBPS, CDS, AFCAT, IAS, TNPSC examinations.

Our passed out students in the academic year from 2014-2017 were placed many private companies in the area of IT, BPO, Auto mobile Companies and Marketing sectors.

Course Specialization: Students learn Tally software along with the curiculam.

COURSE: BCOM COMPUTER APPLICATION	**OUTCOMES**
Financial accounting	On successful completion of this course the student are enabled with the Knowledge in the practical applications of accounting, learn principles and concepts of Accountancy, basic concepts of Partnership Accounting, company accounts etc.
Business statistics and mathematics	students acquire new skills on the application of statistical tools and techniques in Business decision-making, Popular Quantitative Tools used in Business, practical exposure on calculation of measures of average, correlation and regression
Cost and management accounting	It enable the students to understand the theories of costing and management accounting in a wide aspects, idea regarding cost control and preparation of financial statement
Financial management	awareness about capital structure and theories of capital structure, cost of capital in wide aspects, dividend policies and various dividend models, working capital

	management
Computer fundamentals & office automation	Awareness of basics of computer
Object oriented programming using C++	To inculcate knowledge on Object-oriented programming concepts using C++
Database concepts & oracle	To inculcate knowledge on RDBMS concepts and Programming with Oracle.
Java programming	To inculcate knowledge on Java Programming concepts
VB NET programming	To enable students to create a software package using VB
Software engineering	To introduce software project management and to describe its distinctive characteristics and to discuss project planning and the planning process and show how graphical schedule representations are used by project management and the risk management process
Programming in C	On successful completion of this subject the students have the programming ability in C Language
Operating system & Linux	This course will prepare students to develop software in and for Linux environments
Multimedia & DTP	Knowledge of DTP
Web design	Get practical experience of web designing
Modern marketing(E-	Gain idea about Modern marketing and its functions, consumer behavior, product and its classifications, pricing policies

Commerce)	
Auditing	To develop an understanding of audit concept

Department of B.Com. BANK MANAGEMENT

1. ABOUT THE DEPARTMENT

Department of B.Com. BANK MANAGEMENT is an under graduate course, started in the academic year 2016-2017 with the prime aim of providing education in the field of commerce where students can learn the latest trends in banking, business, finance and commerce. The faculty team guides students in every step by motivating them constantly to upgrade their personal and professional skill.

2. ELIGIBILITY OF THE COURSE

Programme	Eligibility for Admission
B.Com Bank Management	The candidates should complete their 10+2 or its equivalent exam with subject like Accounts, etc. in Commerce stream.

3. PROGRAMME/ COURSE OUTCOME

1. Three years UG Degree Program which lay stress on subjects like banking, communication, accounting, taxation, business laws, entrepreneurial development and economics.

2. This course is beneficial in nature that provides many career scopes for the candidates after its completion.
3. This course provides a better curriculum in order to produce well qualified professionals required in banking, corporate sector, Automobile Industry, Transportation, IT Companies, Educational Institutions, Insurance Sector, Export & Import and you can also come up with knowledge to the real world perspective.

4. CRITERION II -TEACHING-LEARNING AND EVALUATION					
2.1 Student Enrolment and Profile					
2.1. 1 Demand Ratio during the year					
Name of the Programme	Number of seats available	Number of applications received	Students Enrolled		
2.2 Catering to Student Diversity					
2.2.1. Student - Full time teacher ratio (current year data)					
Year	Number of students enrolled in the institution (UG)	Number of students enrolled in the institution (PG)	Number of full time teachers available in the institution teaching only UG courses	Number of full time teachers available in the institution teaching only PG courses	Number of teachers teaching both UG and PG courses

2.3 Teaching - Learning Process					
2.3.1 Percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc. (current year data)					
Number of teachers on roll	Number of teachers using ICT *(LMS, e-Resources)*	ICT tools and resources available	Number of ICT enabled classrooms	Number of smart classrooms	E-resources and techniques used
2.3.2 Students mentoring system available in the institution? Give details. (maximum 500 words)					
Number of students enrolled in the institution		Number of fulltime teachers		Mentor: Mentee Ratio	

2.4 Teacher Profile and Quality				
2.4.1 Number of full time teachers appointed during the year				
No. of sanctioned positions	No. of filled positions	Vacant positions	Positions filled during the current year	No. of faculty with Ph. D

2.4.2 Honours and recognitions received by teachers

(received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the year)

Year of award	*Name of full time teachers receiving awards from state level, national level, international level*	*Designation*	*Name of the award, fellowship, received from Government or recognized bodies*

2.5 Evaluation Process and Reforms

2.5.1 Number of days from the date of semester-end/ year- end examination till the declaration of results during the year

Programme Name	Programme Code	Semester/ year	Last date of the last semester-end/ year-end examination	Date of declaration of results of semester-end/ year- end examination

2.5.2 Reforms initiated on Continuous Internal Evaluation(CIE) system at the institutional level (250 words)

2.5.3 Academic calendar prepared and adhered for conduct of Examination and other related matters (250 words)
2.6 Student Performance and Learning Outcomes
2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed in website of the institution (to provide the weblink)
The MBA course will enable to develop competent management professionals with strong ethical values, capable of assuming a critical role in various sectors of the Indian and Global Economy, aligned with the national priorities. This degree helps the students develop a toolbox of quantitative and soft skills in business and management, which they can use to grow in their chosen career.
2.6.2 Pass percentage of students

Programme Code	Programme name	Number of students appeared in the final year examination	Number of students passed in final semester/year examination	Pass Percentage

2.7 Student Satisfaction Survey
2.7.1 Student Satisfaction Survey (SSS) on overall institutional performance (Institution may design the questionnaire) (results and details be provided as weblink)

Department of Hotel & catering Management

PROGRAM OUTCOMING

- To coach the students to acquire efficiency, knowledge and experience to work in Star Hotels & Similar Institutions.
- To coach the students to excel in the Field of Hospitality Industry.
- To groom our students to the Industrial standard.

- French-Students will learn basic French with French cooking vocabularies. How to build the hotel dialogues and conversations in French.
- Communication in English- helps the students to get updated knowledge on business strategies, writing business letters, circulars, report writing which enhance the students overall writing skills.
- Food Production-students will learn about kitchen equipment, Layout, Organization chart, Culinary history, HACCP, Indian Cuisine, menu Planning, Standard recipe, Larder Products, Appetizers and Garnishes, Molecular Gastronomy ,Food decoration, International Cuisine ,Bakery confectionery, Food costing and budgeting.
- Food & Beverage Service- students will learn the organization structure, restaurant equipment, & various types of food & beverage operations, catering establishments, Menu planning, style of service, alcoholic beverages ,banquets, Buffet and Gueridon service etc. .
- Front Office Operation-students will learn about the Hierarchy of front office department, Classification of Hotel & Types of room, Reservation & Registration in hotel industry, salesmanship technique, How to upsell the

product, Guest relation and social skill, cash and card settlements, Front office security systems, Types of folios & Yield Management.

- Accommodation Operation- Hierarchy of Housekeeping Department, Various types of cleaning agents & cleaning equipments and usage of cleaning equipments & agents in different surfaces, classification of fiber, Laundry, Procedure of stock taking in housekeeping department, Interior designing & role of colours in interior design, Procedure of Redecoration and Refurnishing in guest room.
- Nutrition and Food Science- Basic knowledge regarding various nutrients and uses, preventing food borne diseases, Awareness of food adulteration.
- Tourism Management- Different types of tourism, Job outlets in tourism, How an individual as well as the country give its GDP from tourism.
- Hotel engineering & maintenance- The students will learn about the types of current, fuse, fire extinguisher, refrigeration & air conditioning maintenance, equipment replace polices.
- Principles of management- The student learn about the functions of management in detail.
- Hotel accounting system- The students will learn about the basic of book-keeping procedures, final accounts, depreciation account, departmental account & auditing.
- Food & beverage management- The students will learn about the basic cost dynamics and concept of sales, beverage control, budgetary control, menu merchandizing and engineering, marginal costing and MIS.

- Marketing & sales management- The students will able to understand the need and importance of marketing practices & improve the sales ability in development of hotel industry.
- Hotel law- The student will learn about the various act & its importance, food legislation & factories act.
- Hotel financial management- The student will learn about the various types of business organization, budgetary control & cost control, CVP Analysis & Break-even analysis.
- Facility planning- The students will learn about hotel design, classification of hotel, planning for physically challenged, kitchen and stores-layout and design, project management.
- Human rights & Relation Education- The students will learn about the types of human rights, powers and functions of human rights commission.
- Application of computer- The students will learn about the basics in computer application &Software applications in hotel industry.

BBA course Program/ learning outcomes:

- Graduates will understand effective leadership techniques, including aspects of character and ethical decision-making.
- Human resource management helps the students to know the scope of HRM, Human resource planning and environment of HRM.

- Marketing management enables the students to learn the role of marketing and their relationship with other functional areas.

- Financial management enables the students to learn the basic concepts of finance and the role of financial manager in any organizations.

- Financial accounting helps the students to prepare financial statements in accordance with appropriate standards.

- Managerial economics helps them to apply the economic way of thinking to individual and business decisions.

- Business communication imparts principles of effective communication to eliminate the barriers in communication.

- Computer application in business helps the students to know about MS-office and to program under a DBMS environment

- Business Regulatory framework teaches them the Tax system in India and types of taxes. It helps them to know the works of Income tax department, central excise duty, customs duty-their powers and functions.

- Entrepreneurial development enables the students to know the qualities that an entrepreneur should possess and their functions. It teaches them different entrepreneurial development agencies, commercial banks, small industries development organizations and All India Financial Institutions.

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B.COM GENERAL (SHIFT II)

PROGRAMME OUT COME DETAILS

- To enable the Students to get a Comprehensive understanding of the Financial Accounting and the significance of Management in Business provided the relevance of Marketing in day-to-day business World.
- Create innovative marketing strategies for the success of the organization.
- Acquire skills necessary to start entrepreneurial activities and solving Management problems apart from learning the awareness about the ever changing Business Climate.
- To provide knowledge on research method, techniques and process and to develop skills in the application of research methods for business problem solving.
- To provide knowledge on research method, techniques and process and to develop skills in the application of research methods for business problem solving.
- To enable the students to know about Assessment procedure and Tax planning.

PG & Research Department of Microbiology

BSc Microbiology

Course Learning Outcomes (CLO) 2018-2019

SEM	Course Code	Course	Course Title	Course Learning Outcomes (CLO)
I	TAN1A	Core 1	General Microbiology and Microbial Physiology	The students will become skilled at learning history of microbiology, principles of instrumentation, sterilization, culture techniques and growth conditions of microbes
	TAN21	Core II Practical 1	General Microbiology and Microbial Physiology	The course will build the student to understand & develop skills and hands on training in basic sterilization techniques, culture techniques, microscopy, handling of cultures and staining to see the morphology of eukaryotes and

				prokaryotes.
	TBPBA	Allied 1 Paper I	Biochemistry 1	This course will facilitate the students to gain knowledge about biochemical properties of important molecules such as carbohydrates, amino acids, proteins, lipids and nucleic acids.
	TBPB1	Allied 1 Paper II Practical	Biochemistry	It gives an understanding about volumetric and qualitative analysis of sugars and aminoacids
II	TAN2A	Core III	Immunology and Microbial Genetics	The students will gain knowledge of history and detailed concept of immunology and also the molecular concept of genes and gene transfer mechanisms
	TAN22	Core IVPractical	Immunology and Microbial Genetics	Students will be trained in diagnosis by immune reactions analysis of

				lymphocytes, anaphylactic reactions and assays
	TBPBB	Allied I Paper III	Biochemistry II	The subject gives an idea about metabolic pathways, disorders, structure and functions of microbial enzymes, DNA replication, transcription and translation.
	TBPB1	Allied 1 Paper IV Practical	Biochemistry	The course elaborates qualitative analysis of important molecules such as carbohydrates, amino acids and estimation of proteins, and ascorbic acid
III	TAN3A	Core V	Molecular Biology	The student will be able to Learn about structure, synthesis and processing of DNA, RNA and proteins as well as control of gene

				expression
	TAN41	Core VI Practical III	Molecular Biology	The Students will be trained about estimation of genetic material following different methods and also preparation of competent cells and transformation techniques.
	TBN3A	Allied III Paper I	Bioinstrumentation	The subject gives the working principle and structure of instruments, chromatographic techniques, electrophoretic techniques and spectroscopy and radio isotopic techniques.
	TBN41	Practical III Paper II	Bioinstrumentation	The student will gain hands on experience on identification, separation and quantitative estimation of different macromolecules using

				suitable techniques.
IV	TAN4A	Core VII	Soil and agricultural Microbiology	The subject will offer knowledge about the microbiology of soil, biogeochemical cycles, interactions of microbes, different crop infections and their remedial measures.
	TAN41	Core VIII Practical	Soil and agricultural Microbiology	The student will gain hands on training on isolation and enumeration of soil microbes, demonstration of enzymes, study of nitrogen fixing bacteria and demonstration of various bacterial diseases of plants.
	TBN4A	Allied IV Paper III	Biostatistics	Students will receive a strong foundation in statistical management of biological data through different models.

	TBN42	Allied Practical IV	Biostatistics	This course offers knowledge about common bio statistical methods such as distribution, dispersion, significance and ANOVA.
V	TAN5A	Core IX	Medical Bacteriology	Students will learn about different medically important bacteria, their classification, characteristics, pathogenicity, epidemiology, treatment and prevention.
	TAN5B	Core X	Medical Mycology and Parasitology	Students will learn about fungal classification, characteristics, pathogenicity, epidemiology, treatment and prevention of fungal diseases and other parasitic protozoans.

	TAN5C	Core XI	Medical Virology	The students will learn cultivation, classification, characteristics, pathogenicity, epidemiology, treatment and prevention of all viral diseases and zoonotic diseases.
	TAN61	Core XII Practical	Medical Bacteriology, Mycology,Parasitology and Virology	This course gives a complete understanding of isolation of pathogens from various clinical specimens and their identification through biochemical characteristics.
	TEN 5A	Elective 1	Genetic engineering	This course will offer a detailed knowledge about different genetic engineering techniques including gene cloning, recombinant DNA, sequencing and vectors.
VI	TAN6A	Core XIII	Environmental	The students will find

			Microbiology	out prevalence, growth pattern and application of microbes present in air, aquatic environments and extreme environments.
	TAN 6B	Core XIV	Food and Dairy Microbiology	The student will gain knowledge about important bacteria in food and dairy industry and about food borne diseases and control measures.
	TAN62	CoreXV Practical	Environmental, Food and Dairy Microbiology	This subject provides idea on isolation and identification of bacteria and molds from food and dairy samples, water analysis methods and quantification of microbes in air.
	TEN6A	Elective II	Industrial and pharmaceutical Microbiology	The course will delivers information about fermentation process, microbial products,

				downstream processing and ecology, spoilage of pharmaceutical products and good pharmaceutical manufacturing process.
	TEN6B	Elective III	Biotechnology	The subject offers knowledge about the production of enzymes by microbes, strain improvement, production of pharmaceuticals, crop improvement, cell cycles and transgenic animals.

PG & Research Department of Microbiology

MSc Microbiology

Course Learning Outcomes (CLO) 2018-2019

SEM	Course Code	Course	Course Title	Course Learning Outcomes (CLO)
	MDT1A	Core 1	Microbial	The subject offers

I			Taxonomy	information about microbial taxonomy, detailed classification of prokaryotes and eukaryotes.
	MDT1B	Core II	General Microbiology and Laboratory Animal Science	The subject deals with the instrumentations of microbiology lab, growth kinetics, pure culture techniques, life cycle of algae, maintenance of laboratory animals and transgenic animal models.
	MDT1C	Core III	Immunology	This subject facilitates the students to gain expertise in history, immune responses, immunoglobulin study, antigen- antibody reactions and transplantation immunology.
	MDT11	Core IV Practical	General Microbiology, Physiology and Immunology	The course delivers hands on training in handling instruments, staining of microbes, pure culture techniques, diagnostic

				immunology by diffusion, and precipitation reactions, electrophoretic techniques
	MDTAA	Elective I	Metabolic Pathways	This course offers a detailed view of enzymes, metabolism of macromolecules and different energy pathways of bacteria.
	MDTAB	Elective II	Microbial Diversity	This course offers knowledge on diversity and classification of microbes in extreme environments, microbes present in space and Martian environments.
II	MDT2A	Core V	Virology	The subject proposes general properties of viruses, bacterial viruses, plant viruses, DNA and RNA viruses, epidemiology, diagnosis and treatment of viral diseases.
	MDT2B	CoreVI	Systematic Medical	The subject gives knowledge in normal microbial flora, collection and dispatch of

			Bacteriology	clinical specimens, pathogenicity, diagnosis and prevention of bacterial diseases.
	MDT2C	CoreVII	Mycology and Parasitology	The subject delivers classification and life cycle of disease causing fungi and protozoan parasites.
	MDT21	Core VIII Practical	Systematic Medical Bacteriology, Mycology, Parasitology and Virology	The subject gives hands on training on processing of clinical specimens, isolation of bacteria and fungi from clinical specimens, examination of parasites.
	MDTAC	Elective III	Industrial and Pharmaceutical Microbiology	The subject delivers knowledge on different industrially important bacteria and fungi, production processes of primary and secondary metabolites.
	MDTBA	Extra Disciplinary Elective 1	Biostatistics and Bioinformatics	This subject offers knowledge about bio statistical and bioinformatics

				methods and its applications.
III	MDT3A	Core IX	Microbial Genetics	This subject delivers structure and properties of DNA, gene expression concepts, plasmids and gene transfer mechanisms, mutations and molecular recombination.
	MDT3B	Core X	Genetic Engineering	This course will offer students a detailed knowledge about different genetic engineering techniques including gene cloning, recombinant DNA, sequencing and vectors.
	MDT3C	Core XI	Molecular Biology	The Students will learn about structure, functions, synthesis of DNA, RNA and proteins and their expression.
	MDT31	Core XII Practical	Microbial Genetics, Molecular Biology and Genetic Engineering	The subject delivers hands on expertise on isolation and estimation of DNA, RNA, estimation and separation of proteins and competent cell

				techniques.
	MDTAD	Elective IV	Soil and Agricultural Microbiology	The subject will offer knowledge about the microbiology of soil, biogeochemical cycles, interactions of microbes, different crop infections and their remedial measures.
	MDTBB	Extra Disciplinary Elective 2	Environmental biotechnology	The Students will acquire knowledge about Characteristic features of biofilm, principles of designing of bioreactors, waste water treatment, study of recalcitrant and bioremediation strategies.
IV	MDT4A	Core XIII	Food, dairy and Environmental Microbiology	This course will deliver the contents of Methods of food preservations, fermented food products, air borne microbes and assessment, waste treatment and degradation of xenobiotic compounds.

	MDT41	Core XIV Practical	Soil, Agricultural, Food and Environmental Microbiology	The subject delivers Isolation and enumeration of soil microbes, study on plant diseases, quality checking of milk, isolation of spoilage organisms and physical, chemical and microbial assessment of water.
	MDT4Q	Core XV	Project	The project involves selection of a topic, protocol, collection of literature, experimental part of the project and writing.
	MDTAE	Elective V	Research Methodology	The subject gives ideas on defining the research problems, fundamentals of bioethics, writing the research report, mutagenesis, histochemical, immuno and radiolabeling techniques.

Course Learning Outcomes (CLO) 2018-2019

SEM	Course Code	Course	Course Title	Course Learning Outcomes (CLO)
	NBA	Part I Paper I	Research Methodology	The subject gives ideas on defining the research problems, fundamentals of bioethics, writing the research report, mutagenesis, histochemical, immuno and radiolabeling techniques.
	NBB	Part I Paper II	Advanced Paper in Microbiology	This course will deliver the contents of Microbial techniques, food and environmental microbiology, microbes and health, microbes in nanotechnology and pharmaceutical microbiology.
	NBZ	Part I Paper III	Background paper of proposed	The course will deliver knowledge in the respective fields of

			Dissertation	Dissertation
I	NBQ	Paper IV	Project	Research work involves selection of a topic, protocol, collection of literature, experimental part of the project and writing.

Biotechnology

PROGRAMME/ COURSE OUTCOME in Points:

- The students will understand the various aspects of Biotechnology and its allied areas – their applications and its importance.

- The students will gain the practical knowledge on Handling of different types of microbes, its identification methods, biochemical techniques, chemical analysis, Immnotechnology, Bioprocess techniques, growth stage analysis of small animal and insects and genetic & Molecular Biological based analytical techniques

PROGRAM: MASTER OF COMPUTER SCIENCE

Course Learning Objectives (CLO) 2020-2021

SEM	COURSE CODE	COURSE	COURSE TITLE	COURSE LEARNING OBJECTIVES (CLO)
I	PSG1A	Core	Programming in C and C++	Students will attain an ability to use Programming techniques, skills, and tools necessary for developing Programs.
	PSG1B	Core	Digital Computer Fundamentals	Students will gain knowledge about the hardware and fundamentals of computers and working nature of Microprocessors.
	PSG1C	Core	Open Source Software	Students can learn to analyze the local and global impact of computing on individuals, organizations, and society. Students will attain an ability to apply design and development principles in the construction of software systems of varying complexity.
	PSG11	Practical	Practical – I: Programming in C and C++Lab	Students will attain knowledge to use java elements in their Programming techniques, skills, and tools necessary for developing Programs.
	PSG12	Practical	Practical –II: Open Source Software Lab	Students will attain knowledge to use different elements in their Programming techniques, skills, and tools necessary for developing Programs.
	PEG1A	Elective	Non Major Elective –I Mathematics for Computer Science	Students will attain an ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.

II	PSG2A	Core	Data Structures	Students will gain the fundamental concepts of Data Structures and an ability to use Programming techniques, skills, and tools necessary for developing Programs.
	PSG2B	Core	Programming in Java	Students will attain knowledge to use java elements in their Programming techniques, skills, and tools necessary for developing Programs.
	PSG2C	Core	System Software	Students will improve thier ability to ANALYSE the use of the current softwares and its techniques, skills, and tools necessary for system side programming.
	PSG21	Practical	Data Structures Using C++ Lab	Students will get an knowledge to Create and design innovative methodologies to solve complex problems
	PSG22	Practical	Programming in Java Lab	Create and design innovative methodologies to solve complex problems
	PEG2A	Elective	Statistical Methods	Students learnt the Statistical method, foundations, principles, and computer science theory in the modeling and how to design the computer-based systems in a way that demonstrates comprehension in design choices.
III	PSG3A	Core	Design And Analysis of Algorithms	Students will develop an ability to use Algorithmic techniques, skills, and tools necessary for developing Programs.
	PSG3B	Core	Computer Graphics	Students will get an ability to design, implement, and evaluate a Graphics-based system, process, component, or program to meet desired needs.

	PSG3C	Core	Advanced Java Programming	Students will attain an ability to use current techniques, skills, and tools necessary for computing practice.
	PSG3D	Core	Operating Systems	Students will gain the fundamental concepts of Operating systems and an ability to use its techniques, skills, and tools necessary for developing Applications.
	PEG3A	Elective	Accounting & Financial Management	Students learnt the Accounts and finance methods, foundations, principles, and computer science theory to design the computer-based systems in a way that demonstrates different domain in design choices.
	PSG31	Practical	Advanced Java Lab	Create and design innovative methodologies to solve complex problems in Java Programming
	PSG32	Practical	Operating Systems and Computer Graphics Lab	Create and design innovative methodologies to create problems in system side with graphics.
IV	PSG4A	Core	Computer Networks	Students will attain the knowledge of the fundamental concepts of Computer networks and an ability to use techniques, skills, and tools necessary for developing network based Applications.
	PSG4B	Core	Database Management Systems	Students will gain the fundamental concepts of Data Base concepts and an ability to use techniques, skills, and tools necessary for developing Backend for Applications.
	PSG4C	Core	Software Engineering	Students will gain the fundamental concepts of Data Base concepts and an ability to use techniques, skills, and tools necessary for

				developing Backend for Applications.
	PSG4D	Core	Multimedia Systems	Students will attain an ability to apply knowledge of computing methods to create multimedia programs.
	PSGEC	Elective	E-Commerce	Students will gain an ability to apply knowledge of Electronic commerece in their computing methods.
	PSG41	Practical	RDBMS Lab.	Students will attain an ability to use current techniques, skills, and tools necessary for computing practice.
	PSG42	Practical	Multimedia Systems Lab	Students will attain an ability to apply knowledge of computing methods to create multimedia programs.
V	PSG5A	Core	Object Oriented Analysis and Design	Students will get exposure in UML Languages to apply knowledge of computing methods in Objects and design.
	PSG5B	Core	Web based Application Development	Students will attain an ability to apply knowledge of computing methods to create multimedia and web based programs.
	PSGED	Elective	Big Data Analytics	Students will improve thier ability to use the current techniques, skills, and tools necessary for Analytics practice.
	PSGEJ	Elective	Cloud Computing	Students will gain an ability to use current techniques, skills, and tools necessary for computing practice.
	PSG51	Practical	Web Applications Lab.	Students will attain an ability to apply knowledge of computing methods to create web based programs.

	PSG52	Practical	Practical – X: Mini project	Analyze, design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs for developing small projects.
VI	PSG6Q		Main Project	Students will work on the projects during the last semester of their course; moreover, they will follow the stages in the development of the software system. For each stage, some widely known methods and techniques from the software development are introduced. Both simple and more advanced examples are provided to illustrate the techniques and to serve as guidelines. They design students to practice the methods on a small scale project before going to their real time projects. Students will have experience programming in at least one high-level language, and have had an introduction to algorithms and data structures. Due to the style and project-focused approach used in the course, it is suitable for any student.

Master of Computer Applications (MCA) - Programme Outcome

On completion of MCA degree, the graduates will be able to:

1. Apply the knowledge of mathematics and computing fundamentals to various real life applications for any given requirement
2. Design and develop applications to analyze and solve all computer science related problems
3. Design applications for any desired needs with appropriate considerations for any specific need on societal and environmental aspects
4. Analyze and review literatures to invoke the research skills to design, interpret and make inferences from the resulting data
5. Integrate and apply efficiently the contemporary IT tools to all computer applications
6. Solve and work with a professional context pertaining to ethics, social, cultural and cyber regulations
7. Involve in perennial learning for a continued career development and progress as a computer professional
8. Function effectively both as a team leader and team member on multi disciplinary projects to demonstrate computing and management skills
9. Communicate effectively and present technical information in oral and written reports
10. Utilize the computing knowledge efficiently in projects with concern for societal, environmental, and cultural aspects
11. Function competently as an individual and as a leader in multidisciplinary projects
12. Create and design innovative methodologies to solve complex problems for the betterment of the society

13. Apply the inherent skills with absolute focus to function as an successful entrepreneur

PROGRAM: M.Sc - INFORMATION TECHNOLOGY

Course Learning Objectives (CLO) 2020-2021

SEM	COURSE CODE	COURSE	COURSE TITLE	COURSE LEARNING OBJECTIVES (CLO)
I	PSB1A	Core	C++ and Data Structures	Students will attain an ability to use Programming techniques, skills, and tools necessary for developing Programs.
	PSB1B	Core	Computer Architecture	Students will gain knowledge about the hardware and fundamentals of computers and working nature of Microprocessors.
	PSB1C	Core	Database Management Systems	Students can learn to analyze the local and global impact of computing on individuals, organizations, and society. Students will attain an ability to apply design and development principles in the construction of software systems of varying complexity.
	PSBEA	Elective-I	Visual Basic	Students can emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files

	PSBEB	Elective-I	E-Commerce	Students can learn the examination of e-commerce in altering the structure of entire industries, and how it affects business processes including electronic transactions, supply chains, decision making and organizational performance.
	PSBEC	Elective-I	Programming in C	Students will attain knowledge to use c and c++ elements in their Programming techniques, skills, and tools necessary for developing Programs.
	PSB11	Practical	Data Structures Lab. Using C++	Students will attain knowledge to use c and c++ elements in their Programming techniques, skills, and tools necessary for developing Programs.
	PSB12	Practical	RDBMS Lab	Student will gain the concept of data-driven program execution flow in Visual Basic programming and control in Visual Basic programming.
	PSB2D	Core	Operating Systems	Students gain knowledge on distributed operating system concepts that includes architecture, Mutual exclusion algorithms, deadlock detection algorithms and agreement protocols. To know the components and management aspects of concurrency management 6. To learn programmatically to implement simple OS mechanisms
	PSSEA	Practical	Data Structures Using C++ Lab	Students will get an knowledge to Create and design innovative methodologies to solve complex problems

	PSB23	Practical	Programming in Java Lab	Create and design innovative methodologies to solve complex problems
	PSB2E	Core	Programming in Java	Students Learn how to create secure, portable, high-performance applications using the java programming language.
II	PSBED	Elective-II	Software Engineering	Students will attain a professionally guided education in software engineering that prepares graduates to transition into a broad range of career options: industry, government, computing graduate program, and professional education
	PSBEE	Elective-II	Data Warehousing and Data Mining	Student learn Modeling and design of data warehouses. Algorithms for classification, clustering and association rule analysis. The use of software for data analysis.
	PSBEG	Elective-II	Software Testing	Students gain knowledge of Various test procesess and continuous quality improvement
	PSBEH	Elective-III	Internet Technology	Students can attain the knowledge of the principles of Internet services such as Listserv Mailing Lists, Usenet Newsgroups, and Instant Messaging.
	PSBEJ	Elective-III	Multimedia Systems	Students are Explored in different roles, skill sets, jobs and equipment associated with the development of digital media. Examines the processes involved in producing content to meet a specific communication goal toward a target

				audience
	PSBEK	Elective-III	Windows Programming	Students attain a sound knowledge in program requirements Design/develop programs with GUI interfacesPerform tests, resolve defects, and revise existing code
	PSB23	Practical	Java Programming Lab.	Students Learn how to create secure, portable, high-performance applications using the java programming language.
	PSBE1	Core	Practical – IV: Lab. Based on Elective III	Students attain a knowledge to identify both theoretical and practical aspects in designing multimedia systems surrounding the emergence of multimedia technologies using contemporary hardware and software technologies.
	PSB3G	Core	Computer Networks	Students learn networks and digital communications with a focus on Internet protocols: Application layer architectures (client/server, peer-to-peer) and protocols (HTTP-web, SMTP-mail, etc), Layer 2/3 protocols (ATM and MPLS);
III	PSB3H	Core	Design and Analysis of Algorithms	Students learn the asymptotic performance of algorithms Write rigorous correctness proofs for algorithms.Demonstrate a familiarity with major algorithms and data structures..

	PSB3J	Core	Advanced Java Programming	Students attain a knowledge of Content includes inner classes, multithreading, reflection, collection classes, Swing, TCP/IP networking, Java database connectivity (JDBC), remote method invocation (RMI), CORBA (interactive data language), servlets, and Java server pages (JSP).
	PSB3A	Core	Information Security	Students learn the ability to: Identify computer and network security threats, classify the threats and develop a security model to prevent, detect and recover from the attacks
	PSBEL	Elective-IV	Elective – IV: Mobile Computing	Students attain Design effective mobile interfaces using human computer interaction principles. Evaluate the role of mobile applications in software intensive systems.Evaluate the usability of representative mobile devices such as smartphones and tablets.
	PSBEM	Elective-IV	Elective – IV: Artificial Intelligence	Students learn different types of AI agentsKnow various AI search algorithms (uninformed, informed, heuristic, constraint satisfaction, genetic algorithms) Understand the fundamentals of knowledge representation (logic-based, frame-based, semantic nets), inference and theorem proving

	PSBEN	Elective-IV	Elective – IV: Computer Graphics	Basic principles and techniques for computer graphics on modern graphics hardware. Students will gain experience in interactive computer graphics using the OpenGL API. Topics include: 2D viewing, 3D viewing, perspective, lighting, and geometry
	PSB34	Practical	Practical – V: Advanced Java Lab.	Students learn Content includes inner classes, multithreading, reflection, collection classes, Swing, TCP/IP networking, Java database connectivity (JDBC), remote method invocation (RMI), CORBA (interactive data language), servlets, and Java server pages (JSP).
VI	PSB4Q	Practical	Project & Viva-Voce	Students will work on the projects during the last semester of their course; moreover, they will follow the stages in the development of the software system. For each stage, some widely known methods and techniques from the software development are introduced. Both simple and more advanced examples are provided to illustrate the techniques and to serve as guidelines. They design students to practice the methods on a small scale project before going to their real time projects. Students will have experience programming in at least one high-level language, and have had an introduction to algorithms and data structures. Due to the

				style and project-focused approach used in the course, it is suitable for any student.

14.

15. Program outcome

16. 1. Acquire in-depth knowledge with an ability to discriminate, evaluate, analyze and synthesize solutions for real time problems in the field of Information Technology.

17. 2. Explore IT related problems; apply knowledge for synthesizing information to promote research.

18. 3. Apply effective problem-solving techniques to arrive at optimal solutions.

19. 4. Apply appropriate research methodologies and contribute for the development of science and technology.

20. 5. Assimilate and use state of the art computing techniques and tools to solve complex problems.

21. 6. Possess knowledge, recognize opportunities and contribute to collaborative and multidisciplinary research.

22. 7. Understand the management principles to manage projects efficiently considering economical and financial factors.

23. 8. Acquire professional ethics and intellectual integrity, understand the responsibility and contribute to the sustainable development of the society.

24. 9. An ability to apply knowledge of mathematics, computer science fundamentals and concepts of Information Technology to solve complex problems.

25. 10. An ability to design, conduct experiments, as well as to analyze and interpret data.

26. 11. An ability to design, implement, and evaluate computer-based systems considering economic, environmental, social, political, ethical, health and safety issues.

27. 12. An ability to function individually and in teams on diverse and multidisciplinary domains.

28. 13. An ability to study a problem, identify and formulate the computing requirements appropriate to its solution.

29. 14. An understanding of professional and ethical responsibilities.

30. 15. An ability to communicate effectively.

31. 16. An ability to analyze the local and global impact of computing on individuals, organizations, and society ability to engage in life-long learning.
32. 17. An ability to engage in life-long learning.
33. 18. Knowledge of contemporary issues.
34. 19. An ability to use current techniques, skills, and modern tools necessary for information technology and computing practice.
35. 20. An understanding of computer science , information technology , finance and management principles to manage projects.

Course Learning Objectives (CLO) 2020-2021

COURSE CODE	COURSE TITLE		COURSE LEARNING OBJECTIVES (CLO)
PSD1A	Core	Design and Analysis of Algorithms	Students will attain an ability to use Programming techniques, skills, and tools necessary for developing Programs.
PSD1B	Core	Advanced Java Programming	Students will gain knowledge about the fundamentals of java programming.
PSD1C	Core	System Software	Students will attain an ability to apply design and development principles in the construction of software systems of varying complexity.
PSD11	Practical	Algorithms Lab	Students will attain an ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.

PSD12	Practical	Advanced Java Lab.	Students will attain an ability to use current techniques, skills, and tools necessary for computing practice.
PED1A	Elective	Theoretical Foundations of Computer Science	Students will attain an ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
PSD2A	Core	Computer Networks	Students will gain knowledge about the hardware and fundamentals of computers and working as networks.
PSD2B	Core	Digital Image Processing	Students will attain an ability to apply knowledge of computing and mathematics appropriate to the discipline Image processing.
PSD21	Practical	RDBMS Lab.	Students learn to apply computing theory and programming principles to develop application in software design and development.
PSDEA	Elective	Mobile Computing	Students apply knowledge of computing techniques in Mobile computing.
PSDEB	Elective	Computer Simulation and Modeling	Students will attain an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
PSDEC	Elective	Computer Graphics	Students will gain the ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
PSD22	Practical	Image Processing in Java- Lab	Students evaluate and use appropriate methods and professional standards in computing practice of java programming.

PED2A	Core	Object Oriented Analysis and Design	Students will develop an ability to use Algorithmic techniques, skills, and tools necessary for developing Programs.
PSD3A	Core	Principles of Compiler Design	students analyses simple problems involving text, numbers and graphics, producing a top-level plan with refinements
PSD3B	Core	Information Security	students will programmer builds up a repertoire of techniques for solving problems, usually adapting and reusing techniques as each new problem is encountered
PSD3C	Elective	Artificial Intelligence	Students will be ability to use the current techniques, skills, and tools necessary for Analytics practice.
PSDED	Elective	Big data Analytics	Students will improve their ability to use the current techniques, skills, and tools necessary for Analytics practice.
	Elective	Cryptography	Students will attain an ability to apply design and development principles in the construction of software systems of varying complexity.
	Elective	Distributed Database Systems	Students will gain the fundamental concepts of Data Base concepts and an ability to use techniques, skills, and tools necessary for developing Backend for Applications.
PSG4D	Elective	Multimedia Systems	Students will attain an ability to apply knowledge of computing and mathematics appropriate to the discipline.
PSGEC	Elective	E-Commerce	Students analyze a problem, and identify and define the computing requirements appropriate to its solution.

PSDEJ	Elective	Cloud Computing	Students will attain an ability to use current techniques, skills, and tools necessary for computing practice.
PSD31	Practical	Mini Project	Students Analyze, design, implement, and evaluate a computer-based system, process, component, or program to meet the desired needs to develop projects.
PSG6Q	Practical	Project & Viva-Voce	Students will work on the projects during the last semester of their course; moreover, they will follow the stages in the development of the software system. For each stage, some widely known methods and techniques from the software development are introduced. Both simple and more advanced examples are provided to illustrate the techniques and to serve as guidelines. They design students to practice the methods on a small scale project before going to their real time projects. Students will have experience programming in at least one high-level language, and have had an introduction to algorithms and data structures. Due to the style and project-focused approach used in the course, it is suitable for any student.

POST GRADUATE & RESEARCH DEPARTMENT OF BIOCHEMISTRY

PROGRAMME/ COURSE OUTCOME

- To Make the students know the various methods of maintaining the accounting records in various forms of business
- To customize the importance of business statistics for the commerce students
- To motivate the students Understand the various provisions of the companies act
- To facilitate the understanding of various financial services
- To make the students to get practical skills in solving management problems
- To enable the students to know about Assessment procedure and Tax planning

B.COM GENERAL

- To enable the Students to get a Comprehensive understanding of the Financial Accounting and the significance of Management in Business provided the relevance of Marketing in day-to-day business World.
- Create innovative marketing strategies for the success of the organization.
- Acquire skills necessary to start entrepreneurial activities and solving Management problems apart from learning the awareness about the ever changing Business Climate.
- To provide knowledge on research method, techniques and process and to develop skills in the application of research methods for business problem solving.
- To provide knowledge on research method, techniques and process and to develop skills in the application of research methods for business problem solving .
- To enable the students to know about Assessment procedure and Tax planning.

B.COM ACCOUNTING AND FINANCE

To Make the students know the various methods of maintaining the accounting records in various forms of business

To customize the importance of business statistics for the commerce students

To motivate the students Understand the various provisions of the companies act

To facilitate the understanding of various financial services

To make the students to get practical skills in solving management problems

To enable the students to know about Assessment procedure and Tax planning

CHEMISTRY

Understand the elementary concepts in pure and applied fields of Chemistry.

Demonstrate the ability of critical observation, organization, analytical and problem-solving skills.

Effectively communicate scientific ideas both orally and in writing.

Design and perform simple experiments, analyze data, interpret, relate to the theories and conceive potential applications.

Show proficiency in professional, employability and soft skills required for higher education and placements.

Work in teams with superior inter-personal skills.

Perceive the significance of chemical and environmental disputes faced by humanity at the local, national and international level.

DEPARTMENT OF VISUAL COMMUNICATION

The students will learn about types of communication and communication skills, models of communication elements of design principles of design and color psychology.

The students will learn about Drawing, painting, Graphic Design, geometrical shapes, patterns, surface textures etc. Perspectives, Overlapping objects. Lights and shades, different types of lines, curves shapes, patterns distortions lettering (fonts), alphabets, fonts numbers.

The students will learn about theoretical and practical knowledge oriented photography, Functions of camera, types of lighting, Basics of photo journalism, photo features, photo essays, and also learn about Advertising Photography for promoting the products in a commercial manner.

The students will learn about theoretical and practical knowledge oriented photography, Functions of camera, types of lighting, Basics of photo journalism, photo features, photo essays, and also learn about Advertising Photography for promoting the products in a commercial manner.

The students will learn about Elements of Computer Graphics, Image Editing and Publishing works using software's like Adobe Photoshop and Adobe Indesign and also the students will learn about compositing techniques, keying, colour correction, VFX techniques and animatronics.

The students will learn about Television production process theoretically and practically. Introductions of visualization, Principles of script writing, Camera Techniques, Video recording format, Editing procedures. The students will learn about Television Production process practically. Have to produce 5 to 6 minutes Documentary/Short film, Advertising Film /PSA for their final year projects compulsory. Final year students have to go for One month compulsory Media Internship during sixth semester.