HINDUSTAN COLLEGE OF ARTS & SCIENCE, CHENNAI

COURSE OUTCOME, PROGRAM-SPECIFIC OUTCOME & PROGRAM OUTCOME

B.Sc. DEGREE COURSE IN BIOTECCHNOLOGY

UNIVERSITY OF MADRAS
B.Sc. DEGREE COURSE IN BIOTECCHNOLOGY
PROGRAMME NAME: B.Sc BIOTECHNOLOGY PROGRAMME OUTCOME

PO 1 Grasp of basic and advanced knowledge on various domains of biotechnology.
PO 2 Ability to integrate technologies through an inter-disciplinary learning habit.
PO 3 Develop an independent thinking ability.
PO 4 Ability to communicate effectively.
PO 5 Equip the students with the laboratory skills in biotechnology.

PROGRAMME SPECIFIC OUTCOME:

PSO1 To impart an ability to apply biotechnology skills (including molecular & micro biology, immunology & genetic engineering, bioprocess & fermentation, enzyme & food technology and bioinformatics) and its applications in core and allied fields.
PSO2 To provide students with the concepts and research approaches for their higher career inthe field of biotechnology and develop their scientific interest.
PSO3 To impart in-depth practical oriented knowledge to students in various thrust areas of biotechnology, so as to meet the demands of industry and academia.
PSO4 To apply the principle and applications of different analytical instruments in various research activities of biotechnology.
PSO 5 To help students understand the role of biotechnology in industries and environmental cleanliness for better future.

COURSE OUTCOME:

CELL & MOLECULARBIOLOGY

After completing the course **Cell & Molecular Biology** the students will be able to
CO-1 Understand the structural design of Prokaryotic and Eukaryotic cells.
CO-2 Understand the synthesis, structure, importance and the inter-relationships between the DNA, RNA and Proteins.
CO-3 Understand the major molecular processes which governs all the cellular activities and their regulations.
CO-4 Understand the cell cycle process and the cellular communications.
CO-5 Understand the significance of cellular organelles and their functions.

PO-CO matrix

CELL & MOLECULARBIOLOGY	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X	X		X	X
CO-3		X	X	X	X
CO-4		X	X	X	
CO-5		X	X	X	X

FUNDAMENTALS OF MICROBIOLOGY

Course outcomes:

At the end of the Course, the Student will be able to:

CO-1 Ability to explain core theoretical and practical principles of relevance to history, structure, function and diversity of microorganisms.
CO-2 Sound understanding of the mechanisms and processes used by microorganisms for their replication, survival, spread, and interaction with their environment.
CO-3- Ability to utilize microbiological concepts to summarize, analyze, and synthesize scientific results managing with microbes and related issues In industry and academia
CO-4 Ability to utilize microbes for various beneficial aspects such as biofertilizers ,bioinsecticides etc.
CO-5 Sound understanding of the various diseases associated with microbes and their mechanism of interaction and their diagnosis.

PO – CO matrix

Fundamentals Of Microbiology	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X			X	X
CO-2	X		X	X	X
CO-3	X	X	X	X	
CO-4	X			X	
CO-5	X				X

GENETICS

Course outcomes:

CO-1 Understanding of how genes, their distribution and function in one to next progeny and population on a wider scale exert their effects translating into the sustenance of equalities and diversities among life forms.
CO-2 Understanding the role of genetic technologies in industries related to biotechnology, pharmaceuticals, energy, and other fields.
CO-3- Understanding the population genetics and the role of gene in evolution
CO-4 Sound knowledge on the concepts of heredity, Genes, Mendelian genetics, Blood grouping, genetic map preparation
CO-5 Understanding the genetic regulatory mechanisms at different levels and the processes behind mutations and other genetic changes and various chromosomal abnormalities.

PO – CO matrix

GENETICS	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X			X	
CO-2	X		X		X
CO-3	X			X	
CO-4	X			X	
CO-5	X	X		X	X

CHEMISTRY

Course outcomes:

At the end of the Course, the Student will be able to:

CO-1 Useful knowledge of the chemistry of formation of various bonds and structures.
CO-2 Useful knowledge of the chemistry of formation of various bonds and structures.
CO-3- To understand isomerism and relationship between the various isomeric structures.
CO-4 To understand the fundamentals of coordination chemistry and its applications.
CO-5 To know the fundamentals of nuclear chemistry.

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5
Unit 1	X			X	X
Unit 2	X	X		X	
Unit 3	X	X	X	X	X
Unit 4	X	X	X	X	
Unit 5	X			X	X

GENETICENGINEERING

Course outcomes:

At the end of the Course, the Student will be able to:

CO-1 The students gain knowledge about genes 6 and its manipulation and the techniques involved in the cloning and its applications in genetic engineering

CO-2 To illustrate creativity use of modern tools & techniques for manipulation and analysis of genomic sequences

CO-3 To expose students application of rDNA Technology in biotechnological research.

CO-4 To perform various gene transfer mechanisms in plants

CO-5 To apply the genetic engineering in agriculture, horticulture, disease prevention and diagnostics.

PO – CO matrix

GENETIC ENGINEERING	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
C0-5			X	X	X

ESSENTIALS OF BIOCHEMISTRY

Course outcomes:

CO-1 Understanding of the function of biological molecules through the study of their molecular structure, and interaction with other biomolecules

CO-2 Understanding of the chemical and regulatory inter relationship between major cellular synthetic and catabolic pathways by participating in class discussions, and completing quizzes and exams.

CO-3 To create awareness of the impact of biochemistry on the environment, society, and Other cultures outside the scientific community.

CO-4 To understand major metabolic pathways, role of vitamins and hormones in humans.
CO-5 To understand the importance of enzymes and porphyrins and the basics of biological oxidation.

PO – CO matrix

ESSENTIALS OF BIOCHEMISTRY	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
CO-5			X	X	X

PLANTBIOTECHNOLOGY

Course outcomes:

CO-1 Explain the basics of the physiological and molecular processes that occur during plant growth and development and during environmental adaptations.
CO-2 Understand how biotechnology has been used to develop knowledge of complex processes that occur in the plant.
CO-3 Use basic biotechnological techniques to explore molecular biology of plants
CO-4 Understand the processes involved in the planning, conduct and execution of plan Biotechnology experiments.
CO-5 Understand the use of transgenic plants and its impact on the ecology.

PO – CO matrix

Plant Biotechnology	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
C0-5			X	X	X

BIOINSTRUMENTATIONAND BIOSTATISTICS

Course outcomes:

CO-1 An understanding of physics in biosensor, electrode.
CO-2 An understanding of biomedical instrumentation principles in aspects of device design and applications.
CO-3 An understanding of the techniques, skills and modern engineering tools necessary for engineering practice.
CO-4 Analyze data, interpret, and present information
CO-5 Calculate; analyze and compare observed data; perform simple sums in proportions and algebraic function

PO – CO matrix

Bioinstrumentation And Biostatistics	**PO-1**	**PO-2**	**PO-3**	**PO-4**	**PO-5**
CO-1	X	X	X	X	X
CO-2	X	X		X	
CO-3		X	X	X	
CO-4			X	X	
C0-5			X	X	X

ENVIRONMENTALSTUDIES

Course outcomes:

CO-1 Understand core concepts and methods from ecological and physical sciences and their application in environmental problem-solving.
CO-2 Appreciate key concepts from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions.
CO-3 Appreciate the ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems
CO-4 Waste water treatment solid waste management using biotechnological approaches.
CO-5 Solving the adverse impact of hazardous chemicals by bioremediation techniques.

PO – CO matrix

Environmentalstudies	**PO-1**	**PO-2**	**PO-3**	**PO-4**	**PO-5**

CO-1	X	X		X	
CO-2	X	X		X	
CO-3	X	X	X	X	X
CO-4	X	X	X	X	X
CO-5	X	X	X	X	X

ANIMAL & MEDICAL BIOTECHNOLOGY

Course outcomes:

CO-1 Exhibit knowledge about gene transfer technology for animal and animal cell lines and can able to describe problems both technical and ethical in animal cloning.
CO-2 To provide students with a scientific and Technical understanding of animal biotechnology.
CO-3 To introduce students to the commercial and ethical aspects of the biotechnology industry, and to challenge students with some of the moral and ethical issues that face biotechnologists, legislators and the general public.
CO-4 To present concepts of the potential influence of animal biotechnology on urban and rural communities and to encourage students to derive informed opinions on the potential benefit or danger of biotechnology and its impact on animal agriculture
CO-5 Discuss about various vaccine producing methodologies.

PO – CO matrix

Animal & Medical Biotechnology	**PO-1**	**PO-2**	**PO-3**	**PO-4**	**PO-5**
Unit 1	X				
Unit 2	X		X	X	
Unit 3	X	X	X	X	
Unit 4	X	X	X	X	
Unit 5	X	X			X

BIOINFORMATICS

Course outcomes:

On successful completion of the course the students will be able to:

CO-1 To get introduced to the basic concepts of Bioinformatics and its significance in biological data analysis.
CO-2 Describe the history, scope and importance of Bioinformatics and role of internet in Bioinformatics.
CO-3 Explain about the methods to characterize and manage the different types of biological data.
CO-4 Classify different types of Biological Databases.
CO-5 Introduction to the basics of sequence alignment and analysis.
CO6. Overview about biological macromolecular Structures and structure prediction methods.

PO – CO matrix

BIOINFORMATICS	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	
CO-4			X	X	X
CO-5		X	X	X	X

IMMUNOLOGY

Course Outcome:

CO-1 Exhibit knowledge about immunological response, mechanism of this response, its regulation and the genetic basis. Provide knowledge about protection against disease and Autoimmune disorders to choices in their daily life.
CO-2 Describe the function of phagocytes in the non – specific immune system.
CO-3 Describe professional antigen presenting cells and define their purpose.
CO-4 Define the major histocompatibility complexes (MHCs) type 1 and 2 and explain their functions.
CO-5 Describe the role of Immunoglobulins in Hypersensitivity reactions.

PO – CO matrix

IMMUNOLOGY	PO-1	PO-2	PO-3	PO-4	PO-5

CO-1	X		X	X	X
CO-2	X	X	X	X	X
CO-3	X	X	X	X	X
CO-4	X	X	X		X
CO-5	X	X	X		X

PHARMACEUTICAL BIOTECHNOLOGY

Course outcomes:

CO-1 Aspects of traditional and modern biotechnology viz. Fermentation technology
CO-2 Recombinant DNA technology.
CO-3 Relating the biotechnological aspects to health, and disease.
CO-4 Production of biopharmaceuticals and immunological products.
CO-5 Recent concepts viz; Nanobiotechnology, RNA interference therapeutics and gene therapies. Cell biology and cell culture.

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X	X	X	X	
CO-3	X	X	X	X	
CO-4	X	X	X	X	X
CO-5	X	X	X	X	X

NANOBIOTECHNOLOGY

Course outcomes:

At the end of the course the students will be able to

CO-1 To foundational knowledge of the Nanoscience and related fields.
CO-2 To make the students acquire an understanding the Nanoscience and Applications.
CO-3 To help them understand in broad outline of Nanoscience and Nanotechnology.
CO-4 Depict the role of nanotechnology in drug delivery system.
CO-5 Get knowledge about nanobiosensor and biomimetics.

PO – CO matrix

Nanobiotechnology	PO-1	PO-2	PO-3	PO-4	PO-5

CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
CO-5			X	X	X

INDUSTRIAL BIOTECHNOLOGY

Course outcomes:

The student will learn about the:

CO-1 Understand the need for sustainable Innovation and how biotechnology and bio based Production can contribute to this.

CO-2 Have mastered the basics of industrial biotechnology.

CO-3 Downstream processing and chromatographic techniques

CO-4 Microbial enzymes, polymers, and immobilization techniques

CO-5 Biofertilizers, biopesticides, and biosafety measurements

PO – CO matrix

INDUSTRIAL BIOTECHNOLOGY	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
C0-5			X	X	X

ENVIRONMENTAL BIOTECHNOLOGY

Course outcomes:

CO-1 Provide knowledge about microbial diversity in environmental systems, processes and biotechnology, importance of molecular approaches in environmental microbiology and biotechnology and describe biotechnological solution to environmental issues.

CO-2 Know the basic physiology of a microorganism and how their structure dictates their function in the environment.

CO-3 Understand the bases for microbial metabolism of environmental contaminants.

CO-4 Know various techniques to modify and augment microorganisms in the laboratory and environment

CO-5 Know about environmental toxicants and detoxification of hazardous chemicals

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5

Unit 1	X	X			X
Unit 2	X			X	
Unit 3	X	X	X	X	
Unit 4	X				
Unit 5	X		X	X	

BIO-ENTREPRENEURSHIP

Course outcomes:

CO-1 Bio Entrepreneurship and Innovation minors will be able to sell themselves and their ideas.
CO-2 Students master oral and visual presentation skills and establish a foundation of confidence in the skills necessary to cause others to act.
CO-3 Bio Entrepreneurship and Innovation minors will be able to find problems worth solving
CO-4 Describing the recent status of bioindustries.
CO-5 Sericulture, aquaponics, mushroom cultivation and SCP production strategies.

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5
Unit 1	X			X	
Unit 2	X		X	X	
Unit 3	X		X	X	
Unit 4	X	X	X	X	X
Unit 5	X		X	X	

MARINEBIOTECHNOLOGY

Course Outcome:
CO-1 Introducing the existence of marine ecosystem

CO-2 Updating the knowledge of marine organisms
CO-3 Studying the existing ecosystem in marine diversity and its characteristic features
CO-4 Discussing the importance of marine viruses, molecular approaches of marine products and commercial importance of marine microorganisms.
CO-5 Discussing aquaculture technology and marine byproducts.

PO – CO matrix

MARINE BIOTECHNOLOGY	PO-1	PO-2	PO-3	PO-4	PO-5

CO-1	X		X	X	X
CO-2	X	X	X	X	X
CO-3	X	X	X	X	X
CO-4	X		X		X
CO-5	X		X		X

BASICS IN RESEARCH METHODOLOGY

Course Outcome:

CO-1 Apply a range of quantitative and/or qualitative research techniques to business and management problems/issues.

CO-2 Understand and apply research approaches, techniques and strategies.

CO-3 Demonstrate knowledge and understanding of data analysis and interpretation in relation to the research process.

CO-4 Conceptualize the research process and develop necessary critical thinking skills in order to evaluate different research approaches utilized in the service industries.

CO-5 Planning hypothesis, designing lab experiments, and executing the outcomes.

PO – CO matrix

BASICS IN RESEARCH METHODOLOGY	**PO-1**	**PO-2**	**PO-3**	**PO-4**	**PO-5**
CO-1	X		X	X	X
CO-2	X	X	X	X	X
CO-3	X	X	X	X	X
CO-4	X		X		X
CO-5	X		X		X

B.C.A. DEGREE COURSE

UNIVERSITY OF MADRAS
B.C.A. DEGREE COURSE
SYLLABUS WITH EFFECT FROM 2020-2021

PROGRAM OUTCOME:

PO1. To **Identify, formulate, review** research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO2. To **Design** solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO3. To **Conduct** investigations of complex problems: To Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO4. To **Create, select, and apply** appropriate techniques, resources, and modern engineering and IT tools.

PO5. To **Apply** the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems

PO6.To Convert the real-world problems into computational problem to solve them by using various computational and problem-solving skills.

PROGRAM SPECIFIC OUTCOME:

PSO1: The three-year course of BCA course helps the students to **develop** programming skills, networking skills, learn applications, packages, programming languages and modern techniques of IT

PSO2: The program helps the students to **implement** the analytical skill, communication skill, decision making and problem-solving skill in the field of computational studies.

PSO3: The program helps the students to **fetch** employment in Information Technology Sector of National / International standards and to become a social responsible person.

PSO4: To **Pursue** higher studies in the area of Computer Science / Computer Applications / Information Technology.

COURSE OUTCOME

After completing the course Problem Solving Skills in Python, the students will be able:

1. To **Prepare** students to Learn Python programming and acquire programming and problem-solving skills.
2. To **Create** emerging applications on relevant field using Python.
3. To **Interpret** the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
4. To **Write** simple turtle graphics programs in Python
5. To **Apply** the best features available in Python to solve the computational problems.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		X
CO2	X	X			X	
CO3	X	X		X	X	
CO4	X			X	X	
CO5	X		X	X		X

After completing the course <u>Object Oriented Programming Concepts Using C++</u>, the students will be able:

1. To inculcate knowledge on Object-oriented programming concepts using C++.
2. To gain Knowledge on programming with C++.
3. To write programs using OOP concepts like Abstraction, Encapsulation, Inheritance and Polymorphism
4. To understand the structure and model of the C++ programming language.
5. To solve problems in C++ demonstrating Object Oriented Concepts

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X	X	X	
CO2		X			X	X
CO3		X		X		X
CO4	X		X	X	X	
CO5	X	X	X			X

After completing the course <u>Data Structures</u>, the students will be able:

1. To **Implement** abstract data types for linear data structures.
2. To **Apply** the different linear and nonlinear data structures to solve computational problems.
3. To **Analyze** the various sorting algorithms.
4. To **Solve** linear and non-linear data structure problems.
5. To **Evaluate** various sorting methods and searching algorithms.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X	X		X	
CO2	X			X	X	
CO3		X		X		X
CO4		X	X	X	X	
CO5		X	X			X

After completing the course <u>Java Programming</u>, the students will be able:

1. To **Learn** the structure and model of the Java programming language.
2. To **Implement** the basic principles of Java to create Java applications with GUI.
3. To **Demonstrate** the use of string and String Buffers.
4. To **Develop** multithreaded programs in Java.
5. To **Construct** Applet Programming.

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		X
CO2	X	X			X	
CO3		X		X	X	
CO4	X			X	X	
CO5	X		X	X		X

After completing the course <u>Computer Organization</u>, the students will be able:

1. To **Identify** the major components of a computer system and state their function and purpose
2. To **Describe** the microstructure of a processor
3. To **Demonstrate** the ability to program a microprocessor in assembly language.
4. To **Classify** the operation DMA and peripheral interfaces.
5. To **Learn** the principles of Interfacing I/O devices and Direct Memory accesses

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X	X	X	
CO2		X			X	X
CO3		X		X		X
CO4	X		X	X	X	
CO5	X	X	X			X

After completing the course <u>Open-Source Technologies</u>, the students will be able:

1. To **Recognize** the benefits and features of Open Source Technology.
2. To **Compare and Contrast** different open source products.
3. To **Install** various packages in open source operating systems.
4. To **Learn** the open-source ethics.To **Use** appropriate open source tools based on the nature of the problem.
5. To **Implement and Compile** different open source software.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X		X		X
CO2	X	X		X		
CO3	X			X		X
CO4		X	X		X	
CO5		X	X			X

After completing the course <u>Computer Networks</u>, the students will be able:

1. To **Learn** various principles & concepts of Computer networks.
2. To **Analyze** different network models.
3. To **Evaluate** the data flow through TCP/IP & ISO Layers.
4. To **Assess** key networking protocols and their hierarchical relationship in the conceptual model like TCP/IP and OSI
5. To **Identify** networking and inter-networking devices

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X		X	
CO2	X			X	X	
CO3		X		X		X
CO4		X		X	X	
CO5		X	X			X

After completing the course <u>E-Commerce Technologies</u>, the students will be able:

1. To **Obtain** a general understanding of basic business management concepts.
2. To **Define** basic technical concepts relating toE-Commerce.
3. To **Summarize** the security issues, threats and challenges of E-Commerce.
4. To **Explore** the major issues associated with e-commerce-security, privacy, intellectual property rights, authentication, encryption, acceptable use policies, and legal liabilities.
5. To **Choose** a specific emphasis of E-Commerce which is suited to specific internet Marketing

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		X
CO2		X	X		X	
CO3		X		X	X	
CO4	X			X	X	
CO5	X		X	X		X

After completing the course <u>Software Engineering</u>, the students will be able:

1. To **Specify** software requirements, design the software using tools
2. To **Write** test cases using different testing techniques.
3. To **Construct** of software requirements and the SRS documents.
4. To **Describe** software testing approaches such as unit testing and integration testing.
5. To **Choose** a specific software development life cycle model such as the waterfall model, agile model, spiral model and Rapid Application Development

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X	X		X	
CO2	X			X	X	
CO3		X	X			X
CO4	X		X	X		
CO5		X	X			X

After completing the course <u>Operating System</u>, the students will be able:

1. To **Demonstrate** the structure and functions of Operating System
2. To **Compare** the performance of Scheduling Algorithms
3. To **Explain** the various issues in Inter Process Communication.
4. To **Identify** the features of I/O and File handling methods
5. To **Relate and differentiate** the Memory Management policies

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X	X	X	
CO2		X			X	X
CO3		X		X		X
CO4	X		X	X	X	
CO5	X	X	X			X

After completing the course <u>Relational Database Management System</u>, the students will be able:

1. To **Describe** basic concepts of database system

2. To **Design** a Data model and Schemas in RDBMS
3. To **Write** the uses of SQL
4. To **Analyze** functional dependencies for designing robust Database
5. To **Evaluate** the need of transaction processing and learn techniques for controlling the consequences of concurrent data access.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X		X		X
CO2	X	X			X	
CO3	X			X		X
CO4			X		X	X
CO5		X	X			X

After completing the course <u>Multimedia and its Applications (Elective)</u>, the students will be able:

1. To **Describe** the basic concepts of Multimedia Systems
2. To **Summarize** the technologies behind multimedia applications
3. To **Learn** representations, perceptions and applications of Multimedia
4. To **Compare** multimedia animation s/w tools and techniques
5. To **Sketch** stages of Multimedia projects

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		X
CO2	X	X			X	
CO3	X	X		X	X	
CO4	X			X	X	
CO5	X		X	X		X

After completing the course <u>Web Design and Development</u>, the students will be able:

1. To **Develop** and publish Web pages using Hypertext Markup Language (HTML).
2. To **Optimize** page styles a layout with Cascading Style Sheets (CSS).
3. To **Analyze** and apply the role of languages to create a capstone
4. To **Create** Website using client-side web programming languages like HTML, DHTML, CSS, XML, JavaScript, and AJAX
5. To **Learn** jQuery and AngularJS.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6

CO1		X		X		X
CO2	X	X		X		
CO3	X			X		X
CO4		X	X		X	X
CO5		X	X			X

After completing the course Data Mining, the students will be able:

1. To **Secure** knowledge in Data mining concepts
2. To **Apply** Data mining concepts in different fields
3. To **Characterize** the kinds of patterns that can be discovered by association rule mining, classification and clustering.
4. To **Demonstrate** neural network-based algorithms
5. To **Differentiate** data mining versus knowledge discovery in databases

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X		X	
CO2	X			X	X	
CO3		X		X		X
CO4		X	X	X		
CO5		X	X			X

After completing the course Mobile Application Development, the students will be able:

1. To **Explain** the basics of mobile application development
2. To **Develop** Android application with User interface, networking and animation.
3. To **Use** simulator tools to test and publish the application.
4. To **Develop** and Publish Android application which can use Location and network services
5. To **Develop** and Publish Android applications using Graphical user interface

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X	X		

CO2		X			X	X
CO3		X		X		X
CO4	X		X	X	X	
CO5	X		X			X

After completing the course IoT and Its Applications (Elective), the students will be able:

1. To describe the basic concepts of Internet of Things and the application of IoT.
2. To use Devices, Gateways and Data Management in IoT.
3. To design IoT applications in different domain and be able to analyze their performance
4. To implement basic IoT applications on embedded platform
5. To demonstrate IoT Architecture

CO-PO MAPPING

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1		X		X		X
CO2		X	X		X	
CO3	X	X		X	X	
CO4	X			X	X	
CO5	X		X			X

B.SC. DEGREE COURSE (COMPUTER SCIENCE)

UNIVERSITY OF MADRAS
B.SC. DEGREE COURSE (COMPUTER SCIENCE)
SYLLABUS2021-2022

PROGRAM OUTCOME

PO1: An ability to apply knowledge of computing and mathematics appropriate to the discipline.

PO2: An ability to identify, formulate, and develop solutions to computational challenges.

PO3: An ability to design, implement, and evaluate a computational system to meet desired needs within realistic constraints.

PO4: An ability to function effectively on teams to accomplish shared computing design, evaluation, or implementation goals.

PO5: An understanding of professional, ethical, legal, security, and social issues and responsibilities for the computing profession.

PO6: An ability to apply appropriate techniques, skills, and tools necessary for computing practice.

PO7: An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computational systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.

PO8: An Ability to apply, design and develop principles in the construction of software systems of varying complexity.

PROGRAM SPECIFIC OUTCOME:

PSO1: Model computational problems by applying mathematical concepts and design solutions using suitable data structures and algorithmic techniques

PSO2: Demonstrate basic knowledge of computer applications and apply standard practices in software project development.

PSO3: Understand, analyze and develop computer programs for efficient design of computer-based systems of varying complexity.

PSO4: Design and develop solutions by following standards of software engineering principles and implement by using suitable programming languages and platforms.

COURSE OUTCOME

After completing the course Problem Solving Skills in Python, the students will be able:

CO1.To understand the principles of Python and acquire skills in programming in python.
CO2.To develop the emerging application software in relevant field using Python
CO3. Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
CO4. Able to develop simple turtle graphics programs in Python
CO5. Apply the best features available in Python to solve the situational problems.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1					X			
CO2		X	X	X				X
CO3		X	X		X			
CO4		X		X				X
CO5	X					X	X	X

After completing the course Computer Organization, the students will be able:

CO1. Describe the major components of a computer system and state their function and purpose
CO2. Describe the micro structure of processor.
CO3. Demonstrate the ability to program a microprocessor in assembly language.
CO4.Classify and describe the operation of DMA and peripheral Interfaces.
CO5.Understand the principles of Interfacing

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1							X	X
CO2					X			
CO3			X			X		
CO4				X				
CO5					X			X

After completing the course Java and Data structures, the students will be able:

CO1. Apply the concepts of object-oriented programming.
CO2. Students will be able to develop Java Standalone applications and Applets.
CO3.Choose the appropriate data structures for modeling a given problem.
CO4. Design and develop real world applications

CO5. To select appropriate data structures and algorithms for problems.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X					X	X	X
CO2		X	X	X				
CO3		X				X	X	
CO4			X	X				X
CO5		X	X		X			

After completing the course Web Technology, the students will be able:

CO1. Understand the general concepts of PHP scripting language for the development of Internet websites.
CO2. Understand the basic functions of MySQL database program and XML concepts
CO3. Learn the relationship between the client side and the server side scripts.
CO4.Develop secured web applications.

CO5. Students will be able to write a server-side java application called JSP to catch form data sent
from client and store it on database

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	X						X
CO2	X	X						
CO3				X	X	X		
CO4			X	X				X
CO5		X	X			X		X

After completing the course Visual Programming, the students will be able:
CO1. To understand about the fundamental skills in utilizing the tools of a visual environment in terms of the set of available command menus and toolbars.

CO2. To Design, create, build, and debug Visual Basic applications and explore Visual Basic's
Integrated Development Environment.
CO3.To demonstrate knowledge of programming terminology and how applied using Visual Basic variables, selection statements etc.
CO4.To implement SDI and MDI applications while using forms, dialogs, and other types of GUI components. Learn about programs using mouse activities and keyboard activities.
CO5.To understand about File handling and File system Objects. Develop DLL server and Automate COM/OLE.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X				X			
CO2		X	X			X		
CO3			X	X		X		
CO4			X	X		X	X	X
CO5		X	X		X	X		X

After completing the course Operating Systems, the students will be able:

CO1. To understand the design of control unit.
CO2. Understanding CPU scheduling, Synchronization, Deadlock Handling and Comparing CPU scheduling Algorithms.
CO3. Solve Deadlock Detection Problems. Describe the role of paging, segmentation and virtual memory in operating systems.
CO4. Description of protection and security and also the Comparison of UNIX and Windows based OS.
CO5. Defining I/O systems, Device Management Policies and Secondary Storage Structure and Evaluation of various Disk Scheduling Algorithms.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X		X	X	X			
CO2	X	X			X			
CO3	X		X					
CO4				X		X		
CO5				X			X	X

After completing the course Database Management System, the students will be able:

CO1. Differentiate database systems from file systems by enumerating the features provided by database systems and describe each in both function and benefit.

CO2. Define the terminology, features, classifications, and characteristics embodied in database systems.
CO3. Transform an information model into a relational database schema and to use a data definition language and/or utilities to implement the schema using a DBMS.
CO4. Analyze functional dependencies for designing robust Database
CO5.Understand the need of transaction processing.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X				X			
CO2		X			X			
CO3			X		X			X
CO4					X	X	X	
CO5					X			X

After completing the course <u>Computer Architecture and Organisation</u>, the students will be able:

CO1. To understand basic structure of computer.
CO2. To understand control unit operations.
CO3. To design memory organization that uses banks for different word size operations.
CO4. To understand the concept of cache mapping techniques &concept of I/O organization.
CO5. To conceptualize instruction level parallelism.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X				X			
CO2			X		X			
CO3		X	X		X			
CO4			X				X	
CO5						X	X	

After completing the course <u>Web Technology</u>, the students will be able:

CO1. To develop a dynamic webpage by the use of Java script and DHTML.
CO2. To write a well-formed/valid XML document.
CO3. To connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.

CO4. To write a server-side java application called Servlet to catch form data sent from client, process it and store it on database.
CO5. To write a server-side java application called JSP to catch form data sent from client and store it on database.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	X						
CO2		X	X					
CO3			X	X		X		
CO4							X	X
CO5							X	X

After completing the course Data Communication and Networking, the students will be able:

CO1. Explain the basic concepts of data communication.
CO2. Describe emerging network technologies.
CO3. Understand the terminology and concepts of the OSI reference model and the TCP-IP reference model.
CO4. To understand various application layer protocols and its applications in client/server environment.
CO5.To understand various WAN technologies in computer networks.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							
CO2		X						
CO3		X			X	X		
CO4	X			X	X	X		
CO5	X	X						X

After completing the course Software Testing, the students will be able:

CO1. To study fundamental concepts in software testing, including software testing objectives, process, criteria, strategies, and methods.
CO2. To apply a wide variety of testing techniques in an effective and efficient manner.
CO3. To design and conduct a software test process for a software testing project.
CO4. To conduct tests at various levels to check the flow of data and control, and to check

the code after integrating.

CO5. To able to plan and monitor the development of software systematically using software specification and design document.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							
CO2		X						
CO3			X	X	X			
CO4		X				X		
CO5							X	X

After completing the course Computer Graphics, the students will be able:

CO1. To understand the foundations of computer graphics.

CO2. To understand concept of geometric, mathematical and algorithmic concepts necessary for programming computer graphics.

CO3. To understand the comprehension of windows, clipping and view-ports object representation in relation to images displayed on screen

CO4. To understand the software utilized in constructing computer graphics applications. (e.g. 3D studio, Maya).

CO5. To design computer graphics applications.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1		X						
CO2	X	X	X					
CO3			X	X	X			
CO4						X	X	X
CO5				X			X	X

B.Sc. DEGREE COURSE IN MATHEMATICS

UNIVERSITY OF MADRAS
B.Sc. DEGREE COURSE IN MATHEMATICS
SYLLABUS WITH EFFECT FROM 2020-2021

Programme Outcomes:

PO1: To **analyze** the breadth and depth of mathematics, including the connections between different areas of mathematics.

PO2: To **develop** their basic knowledge in Mathematics, this enables them to be strong in theoretical and application skills.

PO3: To **Apply** real situations and develop mathematical models to **solve** problems.

PO4: To **memorize** the concepts of Algebra, Real Analysis, Complex Analysis, Mechanics, Operation Research, Analytical Geometry, Mathematical Statistics, and Numerical Methods, this in turn helps them to apply this knowledge to analyze a broad range of mathematical phenomena.

PO5: To **formulate &apply** analytical techniques to solve problems.

PO6: To **create, interpret** and analyze graphical representations of data and equations.

Programme- Specific Outcomes:

PSO1: To I**mplement** the concepts of algebra to solve equations of series.

PSO2: To **use** the concepts of envelopes, curvature, and asymptotes to perform operations with basic functions.

PSO3: To **Determine** Laplace transforms and applies these to **solve** differential equations.

PSO4: To **recall** vector algebra concepts to solve differentiation and integration.

PSO5: To **identify** statistical tools to deal with the given data set.

PSO6: To **Associate** the concepts of mechanics to deal with statics and dynamics.

PSO7: To **employ** the basic concepts of algebraic structures to deal with groups, rings, fields and vector spaces.

PSO8: To **explain** the basic principles of mathematical analysis in real and complex.

Course Outcome
Semster-1

After completing the course ALGEBRA, the students will be able:

CO1: To Define and discuss the relationship between roots and its coefficient

CO2: To Apply the Arithmetic, Geometric and Hyperbolic progression **to compute** the equation

CO3: To calculate Eigen values and Eigen vectors of square matrix using characteristic equation

CO4: To describe the prime number and composite number and compute the number of divisors.

CO5: **To evaluate** the highest power of a prime number, Fermat's and Wilson's theorems

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X			
CO2			X	X		
CO3			X			
CO4	X	X				
CO5					X	X

After completing the course DIFFERENTIAL CALCULUS the students will be able

1. **To construct** the graphs of trigonometric functions using exact values.
2. To **manipulate**, derive and use trigonometric identities
3. **To solve** trigonometric equations of a single variable with both specific and general solutions.
4. **To Evaluate** maxima and minima, critical points and inflection points of functions
5. **To Formulate** the concept of curvature and calculate curvature if the curve is defined in Cartesian form or in parametric form.

CO-PO Mapping

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1			X			
CO2			X			
CO3			X			
CO4					X	
CO5						X

After completing the course Calculus OF FINITE DIFFERENCES AND NUMERICAL ANALYSIS – I, the students will be able:

1. To **describe** the basic concept of algebraic and transcendtal equations.
2. **To apply** the basic linear equations.
3. To **summarize** the polynomials and series
4. To **teach** the interpolation with intervals.
5. To **compare** reversion series and inverse interpolation

CO-PO Mapping

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X	X	X		
CO2	X		X	X	X	X
CO3		X	X	X		
CO4	X	X	X	X	X	
CO5	X	X	X	X		X

Course Outcome

Semster-2

After completing the course TRIGONOMETRY the students will be able

1. To **define** the six trigonometric functions. Students will be able to graph the sine, cosine, and tangent functions. Students will be able to fit a sine or cosine function to a given graph.
2. To **solve** with radians and to solve circular motion Problems. Students will be able to solve right triangles. They will be able to draw a sketch in an applied problem when necessary. Students will be able to solve non-right triangles using the law of sines and the law of cosines.
3. To **formulate** higher order derivative of standard functions. Student can express the power series expansion of a given function and evaluate limits. Student can apply De-Moivre's theorem to determine roots of polynomial and can express hyperbolic, inverse hyperbolic functions.
4. To **explain** the basic properties of exponential and logarithmic functions. Learn how to apply these functions to solving problems, including word problem
5. To **determine** the sum of a series. Determine the interval of convergence of a series. Create the Taylor series for a function. Find the limit at infinity of a given function. Find the Taylor polynomial for a given unction. Find a power series for a function. Determine the area of the region bound by functions.

CO-PO Mapping

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1					X	
CO2						X
CO3						X
CO4		X				
CO5			X			

After completing the course INTEGRAL CALCULUS the students will be able

1. **To evaluate** integral values by appropriate reduction formulae
2. **To Construct** (relatively simple) triple integrals in rectangular, cylindrical and spherical coordinates. Compute double integrals over a sector of an annulus using polar coordinates.
3. To **explain** the applications and the usefulness of these special functions. Understand purpose and functions of the gamma and beta functions, Sturm-Liouville problem, Fourier series and Transformation. (Skills)Use the gamma function, beta function and special functions to evaluate different types of integral calculus.
4. **To solve** the magnitude, direction and component form of displacement vectors.
5. **To determine** the following vector operations addition and subtraction, scalar multiplication, dot product, geometric and component forms, crossproduct, geometric and component forms. Use vector models for applications of velocity, force, work, finding angles between vectors, and projections.

CO-PO Mapping

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X			
CO3		X				
CO4			X			
CO5			X			

After completing the course CALCULUS OF FINITE DIFFERENCES AND NUMERICAL ANALYSIS-II the students will be able

1. **To teach the** basic concept divided differences.
2. **To summarize**the basic definitions of summation series and summation formula
3. **To differentiate** the basic of homogenous and non-homogenous difference equation
4. **To find** the ordinary difference equations
5. To make the students to understand the **Modification** of series methods, derivatives etc.

CO-PO Mapping

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X	X	X		
CO2	X		X		X	X
CO3		X	X	X		
CO4	X	X	X		X	
CO5	X	X	X	X		X

Course Outcome

Semster-3

After Completing the course ANALYTICAL GEOMETRY the students will be able to

1. To **discuss** basics of pole and polar
2. To **explain** parametric equations in graphing and analyzing polar coordinates, conic sections.
3. To **Complete** the Length of the perpendicular.
4. To **define** the concept of a line and a plane.
5. To **express** the equation of Sphere and circle.

CO/PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X		X	
CO2		X	X		
CO3	X		X		
CO4	X	X			
CO5		X		X	

After Completing the course DIFFERENTIAL EQUATIONS the students will be able to

1. To **differentiate** between total differentiation and partial differentiation.

2. To **analyze** the special methods of finding complete integral for partial differential equations.
3. To **evaluate** the general integral of the linear differential equation of first order.
4. To **solve** the complete integral of the PDE using carpet's method, Lagrange's method.
5. To **describe** about the equation solvable for dy/dx and explain variable separable method for solving PDE.

CO/PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1				X	
CO2				X	
CO3		X			
CO4			X		
CO5	X				

After completing the course MATHEMATICAL STATISTICS – I, the students will be able:

1. To **describe** the basic concept of probability
2. To **summarize** distribution function
3. To **teach** characteristics function
4. To **explain** correlation and regression
5. To **compare** discrete and continuous distribution.

CO/PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		
CO2		X	X	X	X	X
CO3	X		X	X	X	X
CO4	X		X	X	X	
CO5	X	X		X		X

Course Outcome

Semster-4

After completing the course TRANSFORMS TECHNIQUES, the students will be able:

1. To **Solve** the Laplace Transform and its existence. To **compare** relation between Fourier transform and Laplace transform.
2. To **Apply** the Convolution Theorem to obtain inverse Laplace transforms.
3. To classify and **solv**e wave equations and heat equations involving Partial Differential Equations
4. To **Analyze** the Fourier transform or inverse transform of common functions including Gaussian, Delta, and Unit-Step, sinusoidal and exponential decays.
5. To **Define** the basic concept of the Z transform and its application

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		

CO2		X	X	X	X	X
CO3	X		X	X	X	X
CO4	X		X	X	X	
CO5	X	X		X		X

After completing the course STATICS, the students will be able:

1. To **define** and **evaluating** the motion caused by forces acting on an object remember to find the vector sum of the forces
2. To **solve and evaluating** Rigid body about the movement of systems of interconnected bodies under the action of external forces.
3. To **describe** various kinds of forces and motion highly desirable for engineering and Practical applications. Newton's law of motion defines and gives the expression for the force.
4. To **describe, analyze, apply** and **develop** center of mass. It is **defined** relative to an object or system of object
5. Virtual work **estimate** in the application of the principle of least action to the steady of forces and movement of a mechanical system

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X	X	X	X	
CO2			X	X	X	X
CO3	X		X		X	
CO4	X		X	X	X	X
CO5		X	X		X	X

After completing the course MATHEMATICAL STATISTICS – II, the students will be able:

1. To **summarize** and **estimate** the parameters of sampling distributions
2. To **apply** the basic concepts of Statistical Inference
3. To **practice** the Test of Hypothesis concepts.
4. To **construct** the Analysis of Variance table to **validate** the analytical concepts.
5. To **find errors** in Hypothesis testing.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		
CO2		X	X	X	X	X
CO3	X		X	X	X	X
CO4	X		X	X	X	
CO5	X	X		X		X

Course Outcome

Semster-5

After Completing the course ALGEBRAIC STRUCTURES-1 the students will be able to

1. **To Define** the concept Basics of Groups, and Subgroups.
2. **To Analyze** the concept of Normal Subgroups and homomorphism
3. **To Explain** the concept of Cayley's Theorem; Permutation groups.
4. **To express** the concepts of Rings, whose components ideals, homomorphism and Quotient rings.
5. **To discuss** the concepts of Euclidean Rings.

CO/PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X			X	
CO3		X	X		
CO4	X	X			
CO5		X		X	

After Completing the course REAL ANALYSIS-I the students will be able

1. To **Explain** the concept of sets and mapping functions
2. To **define** sequence of real numbers. That is definition of a sequence, subsequence, limit of a sequence, convergent, divergent, bounded, monotone sequences.
3. To **analyze** the operations on convergent sequences, Cauchy sequences.
4. To **describe** the basic principles of limit and metric spaces.
5. To **explain** the series of real numbers.
6. To **differentiate** between sequences and series of Real numbers.

CO/PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X				
CO2	X					
CO3				X		
CO4	X					
CO5		X				
CO6				X		

After completing the course DYNAMICS, the students will be able:

1. To **describe** basics of kinematics
2. To **identify, apply** and **classify** the powers and simple harmonic motion
3. To **state, express** and **formulate** the projectile and impulse force
4. To **enumerate, compute** and **apply** the circular motion and central orbit
5. To **analyze** and **apply** the moment of inertia

CO/PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X	X			
CO2	X		X	X		X

CO3		X	X	X	X	
CO4	X	X	X		X	X
CO5			X	X		X

After completing the course DISCRETE MATHEMATICS, the students will be able:

1. To **define** set, inclusive element, object and roster notation, subset, proper subset and equivalent set and examine the union of the disjoint set.
2. To **apply** the knowledge of Boolean algebra to employ symbols and truth tables of basic and derived logic gates
3. To **design** ,analyze and interpret data and identify suitable logical gates and combinatorial circuits
4. To **Solve** homogenous recurrence relation using generating function
5. To **recall** some basic properties of graphs and related discrete structures and be able to relate these to practical examples.

CO-PO Mapping

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		
CO2		X	X	X	X	X
CO3	X		X	X	X	X
CO4	X		X	X	X	
CO5	X	X		X		X

Course Outcome

Semster-6

After Completing the course ALGEBRAIC STRUCTURES-2 the students will be able to

1. **To describe** the basics of vector space, linear independent and basis.
2. **To Analyze** the concept of Dual spaces and homomorphism
3. **To Define** inner product space and its finite-dimensional inner product space
4. **To classify** algebra of linear Transformation and its characteristic roots.
5. **To Create** matrix canonical form and triangular form

CO/PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X	X		X	
CO2				X	

CO3	X	X	X		
CO4		X		X	
CO5	X		X		X

After Completing the course REAL ANALYSIS-II the students will be able to

1. To **describe** of open and closed sets.
2. To **describe** the concept of completeness and compactness.
3. To **teach** the concept of Riemann integration.
4. To **Explain** the concepts of Calculus
5. To **compare** the concepts of sequence of functions.

CO/PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		
CO2		X	X	X	X	X
CO3	X		X	X	X	X
CO4	X		X	X	X	
CO5	X	X		X		X

After completing the course COMPLEX ANALYSIS, the students will be able:

1. To **solve** the limits function of complex variable and analytic function.
2. To **apply** the concepts of linear functions.
3. To **integrate** the concept of complex valued function
4. To **Determine** the Convergence of sequences and series
5. To **evaluate** the Residues and definite integral

CO/PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X	X		
CO2	X	X	X	X		X
CO3			X	X	X	
CO4	X	X		X	X	X
CO5		X	X		X	X

After completing the course GRAPH THEORY, the students will be able:

1. To **describe** the Basics of graphs and sub graphs.
2. To **identify** the degree sequences and graphic sequences.
3. To **draw** Eulerian and Hamiltonian graphs (circuits).
4. To **construct** trees and **Determine** the planarity of given graphs.

5. To **define** the concepts of Digraphs and matrices, tournaments.

CO-PO Mapping

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X				X
CO2		X	X		X	X
CO3		X	X	X	X	X
CO4		X	X			X
CO5	X			X		

After completing the course OPERATIONS RESEARCH, the students will be able:

1. **To identify** the characteristic of linear programming problem and also different techniques to solve LPP are introduced
2. **To illustrate** theoretical as well as logical approach of most popularly used simplex method, Big M method, primal dual relation will be explained
3. **To identify** the special feature of the transportation problem and assignment problem
4. To Understand and **to evaluate** quantitative matrices of performance of queuing systems
5. **Describe** mathematical skills **to analyse** and solve integer programming and network models arising from a wide range of applications.

CO-PO Mapping

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X			
CO2			X	X		X
CO3	X					
CO4			X		X	
CO5				X		

B.Sc. DEGREE COURSE IN ELECTRONICS AND COMMUNICATION SCIENCE

UNIVERSITY OF MADRAS
B.Sc. DEGREE COURSE IN ELECTRONICS AND COMMUNICATION SCIENCE
SYLLABUS WITH EFFECT FROM 2020-2021

PROGRAM OUTCOMES

1. PO1: To Develop the skills that enable the students to get employment in industries or pursue higher studies or research assignments or turn as entrepreneurs.
2. PO2: To create the ability in students to apply their knowledge and skills they have acquired to the solution of specific theoretical and applied problems in Electronics.
   PO3: To modify students with learning experiences that develop broad knowledge and understanding of key concepts of Electronics and equip students with recent Scientific or Technological capabilities for analyzing and tackling the issues and problems in the field of Electronics
3. PO4: To design and develop innovative solutions for benefits of society, by leadership, team work and lifelong learning.
4. PO5: To prepare them for national as well as international competitive examinations.

PROGRAM SPECIFIC OUTCOMES

PSO1: To explain the concepts, calculations pertaining to electric, magnetic and electromagnetic fields so that an in depth understanding of antennas, electronic devices, Waveguides is possible
PSO2: To discuss the basic nature and basic concepts of Computer Networks.
PSO3: To describe the aspects of Basic Physics.
PSO4: To integrate and understand common modulation schemes for continuous wave modulation
including amplitude modulation, frequency modulation, and phase modulation.
PSO5: To summarize the fundamentals of computers and their usage in evolution of Advanced electronics.

COURSE OUTCOME :
After completing the course ANALOG ELECTRONICS, the students will be able:

1. To design and analyze of electronic circuits,
2. To recognize power amplifier circuits, their design and uses in electronics and communication circuits.
3. To know the concept of Multistage and feedback amplifier and their characteristics.
4. To design the different oscillator circuits for various frequencies.
5. To design of circuits using Operational Amplifier and IC 555.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	

After completing the course NUMERICAL METHODS, the students will be able:

1. To demonstrate the mathematical skills of the students in the areas of numerical methods
2. To analyze the accuracy of common numerical methods
3. To categorize to solve the numerical problems
4. To define the most appropriate numerical method for its solution
5. To locate the method to correctly interpret the results
6. **CO-PO MAPPING:**

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	
CO2			X		X
CO3	X	X			
CO4				X	X
CO5		X	X		

After completing the course DIGITAL ELECTRONICS, the students will be able:

1. To adentify the structure of various number systems and its application in digital design
2. To analyze various combinational and sequential circuits
3. To analyze how to interface digital circuits with analog components

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X		X	
CO2	X		X		X
CO3		X			X

After completing the course BASIC PHYSICS I, the students will be able:

1. To define the basics of properties of matter, how Young's modulus and rigidity modulus are defines and how they are evaluated for different shapes of practical relevance
2. To describe the fundamentals of harmonic oscillator model, including damped and forced oscillators and grasp the significance of terms like quality factor and damping coefficient
3. To describe the general equation of wave motion in general and TM waves in stretched strings and longitudinal waves in gases
4. To recognize the general terms in acoustics like intensity, loudness, reverberation etc, and study in detail about production, detection, properties and uses of ultrasonic waves

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2				X	X
CO3	X				X
CO4		X			X

After completing PRINCIPLES OF COMMUNICATION, the students will be able:

1. To describe the basic principles of communication system
2. To differentiate analog and digital communication systems
3. To demonstrate the parameters for various types of modulation and demodulation techniques
4. To identify basic communication problem
5. To analyze transmiter and receiver circuits
6. To compare design issues, advantages, disadvantages and limitations of communication systems
7. To define satellite system
8. To differentiate the advantages and disadvantages of geostationary satellites

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	
CO2		X			X
CO3	X		X		
CO4	X		X		X
CO5		X		X	
CO6	X				X
CO7		X		X	
CO8			X		X

After completing the course, MICROPROCESSOR INTEL 8085 the students will be able:

1. To describe the architecture of 8085 microprocessor
2. To analyze assembly language programmes
3. To implement programme efficiency using various addressing modes
4. To perform Interfacing of memory & various I/O devices with 8085 microprocessor

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	
CO2		X	X		
CO3		X			X
CO4	X			X	

After completing the course PROGRAMMING IN C, the students will be able:

1. To implement programs using Functions, Pointers and Structures in C language
2. To implement files and perform file operations.
3. To perform the execution of programs written in C language.
4. To identify the C code for a given algorithm.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		
CO2			X	X	
CO3	X			X	
CO4		X			X

After completing the course BASIC PHYSICS II, the students will be able:

1. To define the basic concepts behind Optics, Nuclear Properties and Radio Activity
2. To describe the basics in Laser
3. To implement the applications of Fibre Optics

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	
CO2	X				X
CO3		X	X		

After completing the course MICROCONTROLLER, the students will be able:

1. To describe the architecture of 8051 microcontroller
2. To describe the operation of microcontroller
3. To implement the machine language programming
4. To demonstrate keyboard, display, stepper motor, ADC & DAC interfaces

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X			
CO2			X		X
CO3	X			X	
CO4		X			X

After completing the course ELECTRICAL AND ELECTRONICS INSTRUMENTATION, the students will be able:

1. To categorize DC and AC indicating instruments
2. To recognize various AC and DC bridges
3. To recognize the basic features of oscilloscope and different types of oscilloscopes
4. To identify the complete knowledge of various electronics instruments/transducers to measure the physical quantities in the field of science and technology.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5

CO1		X	X		
CO2	X			X	
CO3	X		X		X
CO4		X		X	

After completing the course ANTENNAS THEORY AND RADAR SYSTEM, the students will be able:

1. To define the concept of Antenna parameters and types.
2. To explain the fundamental concepts of television transmission, reception and scanning methods.
3. To define the fundamental concepts of Wave Propagation.
4. To describe the working principles of latest digital TV and HDTV, LED and OLED.
5. To recognize the concept of RADAR,

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		
CO2			X		X
CO3	X			X	
CO4				X	
CO5	X	X			X

After completing the course INDUSTRIAL ELECTRONICS, the students will be able:

1. To explain the principle and application of Thyristor
2. To implement the triggering mechanism in various applications
3. To describe the basic operation of Invertors
4. To analyze the applications of LASER, Ultrasonics and Radar in various fields

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X		X	
CO2	X				X
CO3	X		X		
CO4			X		

After completing the course COMPUTER NETWORKS, the students will be able:

1. To explain the OSI Reference Model
2. To analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies

3. To describe the functions of Physical, Data Link, Network layers in OSI model
4. To define the transport, session and presentation layers

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X			X
CO2			X		X
CO3	X			X	
CO4	X		X		

After completing the course REAL TIME EMBEDED SYSTEM, the students will be able:

1. To explain Arduino environment and its applications
2. To design Smart systems applications
3. To implement circuits using Arduino
4. To perform Raspberry Pi using the programming language Python
5. To analyze the IOT based applications

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X	X			
CO2			X		X
CO3		X			
CO4		X			X
CO5	X			X	

After completing the course BIOMEDICAL INSTRUMENTATION, the students will be able:

1. To describe the origin of biopotentials and explain the role of biopotential electrodes;
2. To design and operate biopotential amplifiers

3. To describe common biomedical signals and distinguish characteristic features
4. To measure biomedical information
5. To demonstrate the position of biomedical instrumentation in modern hospital care
6. To explain the Physiological assist devices and Computer Applicatons

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X	X			
CO2			X	X	
CO3	X		X		
CO4		X			X
CO5	X			X	
CO6		X	X		

After completing the course PROGRAMMING IN C++, the students will be able:

1. To implement the object oriented concepts using C++
2. To describe polymorphism, inheritance and virtual functions in C++.
3. To perform exceptions that arise in a C++ program.

Implement applications using files, templates, containers and iterators

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	
CO2			X		X
CO3	X	X			

B.SC MICROBIOLOGY

B.SC MICROBIOLOGY

CO, PO & PSO

PROGRAM OUTCOMES (POs)

PO-1: The Graduates acquire detailed knowledge in the field of microbiology and expertise in handling various microbiological methods.

PO-2: Graduates will be able to communicate scientific information, concepts, experiments and significance, especially relating to microbiology.

PO-3: Graduates acquire knowledge on ethical issues and independently demonstrate lab experiments in competence with laboratory safety and standards.

PO-4: Graduates will be familiarizing to collect, analyze and interpret scientific data related to solving public issue for the welfare of the society.

PO-5: Graduates will Apply knowledge and understanding of microbiological solution to solve problems in day-to-day life in concern with public health and safety, also applicable in all practical area of the subject.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO-1: The undergraduate students will acquire fundamental and applied knowledge in history, classification, morphology and physiological characteristic of Bacteria, Fungi, Virus, algae and protozoa.

PSO-2: Graduates will become expertise in the use and application of various laboratory protocols for basic and advanced microbiological, immunological and molecular techniques with Good laboratory practices.

PSO-3: Graduates will Understand the role of microorganism in Medical, Food, Pharmaceutical, Industrial, Soil, Agricultural and environmental microbiology. PSO-4: Understand the epidemiological status, pathogenesis, immune response, diagnosis, treatment, prevention and control of microbial diseases in Human being, animal and plants.

PSO-5: Apply for career development, entrepreneurship, placement as skilled person in various field of life sciences, research and technology development.

CORE-I: GENERAL MICROBIOLOGY & MICROBIAL PHYSIOLOGY

Course Outcome:

After Completing the course General Microbiology & Microbial Physiology, the students will be able

CO-1. Understand the developments in Microbiology and list the contributions of various scientists.

CO-2. Illustrate the structure and function of Microbial cells. Utilize the principles and applications of different types of Microscopes. Apply various staining procedures for visualising microorganisms under the microscope.

CO-3. Analyse the nutritional requirement of microorganisms and their cultivation techniques under laboratory conditions. Assess the implication of various sterilization procedures and bio safety measures in clinical labs and industries.

CO-4. Assess various metabolic pathways occurring in microorganisms and their significance.

CO-5. Acquire knowledge about antibiotics and mode of action.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X	X	X	X	X
CO3	X	X	X	X	X
CO4	X	X			X
CO5	X	X	X	X	

CORE-I-
PRACTICAL:GENERALMICROBIOLOGYANDMICROBIALPHYSIOLOGY

After Completing the course General Microbiology & Microbial Physiology, the students will be able

Course Outcome

CO-1. To practice sterilization methods. Learn to prepare media and their quality control.
CO-2. To learn streak plate, pour plate and serial dilution. Pigment productions.
CO-3. To understand Microscopy methods, different Staining techniques and Motility test.
CO-4. Observation of different type of algae, isolation of fungi, Size Measurement and Antimicrobial assay.
CO-5. To demonstrate biochemical test for bacteria and culture maintenance Techniques

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X	X			X
CO3	X	X	X	X	
CO4	X			X	X
CO5	X	X	X	X	X

ALLIED:PAPERI–THEORY– ALLIEDBIOCHEMISTRY– I

After Completing the course ALLIED BIOCHEMISTRY – I, the students will be able

. CourseOutcome

CO-1. To learn the basic of classification and significance of carbohydrates.

CO-2. To Understand occurrence and properties of polysaccharides.

CO-3. Learn the molecular structures of 20 amino acids, differentiatingessentialandnon-essentialaminoacids,biologicallyimportantmodified
Aminoacids and their functions.

CO-4. Recognizethestructurallevelorganizationofproteins,3Dstructureof
Proteins ,its functions and denaturation.

CO-5. To learn the Heterocyclic Compounds classification and biological
Importance ,chemical nature and significance.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X	X	X	X	X
CO3	X	X	X	X	X
CO4	X	X			X
CO5	X	X	X	X	

SECOND SEMESTERCOREPAPER-II–THEORY: IMMUNOLOGY

After Completing the course IMMUNOLOGY, the students will be able

CourseOutcome

CO-1. To know about History ,scope of immunology ,also types blood group,
Immunity and hematopoiesis.

CO-2. To learn about cells and organs of immune system ,types of immunity And
complement pathways.

CO-3. To learn about antigen, haptens, adjuvants, immunoglobulin structure
And functions.

CO-4.Understand hypersensitivity reaction, and vaccines.

CO-5. To know antigen and antibody reaction and transplantation, tumor immunology.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X	X			X
CO3	X	X	X	X	
CO4	X			X	X
CO5	X	X	X	X	X

COREII-PRACTICAL:IMMUNOLOGY

After Completing the course IMMUNOLOGY Practical, the students will be able

CONo.Course Outcome

CO-1. Learn various serological techniques including agglutination and Precipitation reactions.

CO-2. To practice the Complement fixation test and ELISA.

CO-3. To practice the enumeration of blood cells and isolation of lymphocytes.

CO-4. To learn antibody production, Arthurs reaction and anaphylactic reaction.

CO-5. To understand the immediate and delayed hyper sensitivity reaction.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X	X	X	X	X
CO3	X	X	X	X	X
CO4	X	X			X
CO5	X	X	X	X	

ALLIED-I & II-BIOCHEMISTRYPRACTICALS (I &II)

After Completing the course BIOCHEMISTRY Practical, the students will be able

CONo.Course Outcome

CO-1. Estimation of ascorbic acid and glycine

CO-2. They acquire knowledge in the Identification of carbohydrate and Amino acids with suitable tests

CO-3. Colorimetric estimation of protein and phosphorous.

CO-4. Preparation of starch from potatoes and case in from milk.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X	X	X	X	X
CO3	X	X	X	X	X
CO4	X	X			X

ALLIEDIITHEORY:BIOINSTRUMENTATION

After Completing the course BIOINSTRUMENTATION Theory, the students will be able

CO No. Course Outcome

CO-1. By the end of the course, the student should be able to learn about the principle, application and uses of various laboratory equipments

CO-2. Learn the principles ,types and application of different chromatography techniques

CO-3. Understand the mechanisms, types and application of electrophoresis techniques

CO-4. Know about the mechanisms, uses and different types of spectrophotometer

CO-5. Understand the principle and application of radioisotopes in the field biology.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X	X	X	X	X
CO3	X	X	X	X	X
CO4	X	X			X
CO5	X	X	X	X	

ALLIEDII –PaperII :PRACTICALIII(BIOINSTRUMENTATION)

After Completing the course BIOINSTRUMENTATION Practical, the students will be

able

CO No. Course Outcome

CO-1. By the end of the course, the student should be able to learn about the Principle pHtitration and draw the pKavalues of acids

CO-2. Learn about the separation of biomolecules using chromatography techniques. Understand the mechanisms and uses of electrophoresis techniques. Know about the principle and application of UV spectrophotometer

CO-3. ToKnowaboutthequantitativeestimationvariouschemicalsusinggaschromatography. Understand the principle and uses of PCR, sequencer, Flow cytometry and fermenter

CO-4.. Learn the calibration of PH meter. Learn the calibrate the weighing balance.

CO-5. To Assess the quality of Autoclaving.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X	X			X
CO3	X	X	X	X	
CO4	X			X	X
CO5	X	X	X	X	X

CORE-PAPERIII-THEORY:MOLECULARBIOLOGY

After Completing the course MOLECULAR BIOLOGY theory , the students will be able

CO No. Course Outcome

CO-1. Understand the chemical components of DNA and various forms of DNA. Know about the organization of prokaryotic and eukaryotic genome.

CO-2. Understand the DNA replication, repair and recombination in Prokaryotes with that of eukaryotes.

CO-3. To know about RNA synthesis and processing and function of different Types of RNA.

CO-4. To know about protein synthesis and inhibition factors of protein synthesis.

CO-5.. To Understand prokaryotic and eukaryotic gene expression and control Of gene expression

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X	X	X	X	X
CO3	X	X	X	X	X
CO4	X	X			X
CO5	X	X	X	X	

COREIIIPRACTICAL:MOLECULARBIOLOGY

After Completing the course MOLECULAR BIOLOGY Practical, the students will be able

CO No. Course Outcome

CO-1. Practice to estimate DNA and RNA

CO-2. Learn to isolate Plasmid, Genomic and Chromosomal DNA.

CO-3. Learn to isolate RNA and antibiotic resistant mutants.

CO-4. Acquire Knowledge in protein by Lowry's method.

CO-5. Acquire Knowledge in DNA molecular size determination.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X	X	X	X	X
CO3					X
CO4	X	X	X	X	
CO5	X	X	X	X	X

ALLIEDIII THEORY:CLINICAL LABTECHNOLOGY

After Completing the course CLINICAL LABTECHNOLOGY Theory , the students will be able

C.no Course outcome:

CO-1. Outline the structure of organization of clinical laboratory and safety regulation

CO-2. Impart knowledge on biological specimen collection

CO-3. Describe haematology process

CO-4. Focus on basic concepts routine urine analysis

CO- 5. Study about Laboratory Standard Accreditation Boards

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X		X	X	X
CO3	X				X
CO4	X	X			X
CO5	X			X	X

ALLIED-III: CLINICAL LAB TECHNOLOGY (Practical)

After Completing the course CLINICAL LABTECHNOLOGY Practical , the students will be able

C.no Course outcome:

CO-1. Outline the structure of organization of clinical laboratory and safety regulation

CO-2. Impart knowledge on biological specimen collection

CO-3. Describe haematology process

CO-4. Focus on basic concepts routine urine analysis

CO- 5. Study about Laboratory Standard Accreditation Boards

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X			X	X
CO3	X	X			X
CO4	X	X	X		X

FOURTHSEMESTER

CORE IV THEORY :SOILANDAGRICULTURALMICROBIOLOGY

After Completing the course SOIL AND AGRICULTURAL MICROBIOLOGY Theory, the students will be able to:

CONo.Course Outcome

CO-1. Upon successful completion of this course, the student should be able to Understand types, structure, formation of soil and microbial flora

CO-2.. Understand the roles oil micro flora in biogeochemical cycle in the environments

CO-3. Know about the mechanism and responsibility of microbial interaction With microbes, plant, animal and insects.

CO-4. Be familiar with the role of microorganism as bio fertilizer and know About the types and mode of action of bio pesticides,

CO-5. Know about defense mechanism, etiology, epidemiology and Management various plant diseases caused by microorganisms

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X		X	X	X
CO2	X		X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X	X	X	X

COREIV–PRACTICAL:SOIL ANDAGRICULTURALMICROBIOLOGY

After Completing the course SOIL AND AGRICULTURAL MICROBIOLOGY Practical, the students will be able

CO No. Course Outcome

CO-1. By the end of the course, the student should be able to learn different Methods for the isolation and enumeration of soil microorganisms

CO-2. Understand the mechanisms and application of enzyme produced by Soil microorganisms

CO-3. Know about the role and methods used for the isolation and Identification of *Rhizobium* and *Azotobacter.*

CO-4. Know about the methods used for isolation and identification of nitrogen fixing algae and its antagonistic effects.

CO-5. Understand the causes, symptoms, control and treatment of various Plant diseases caused by microorganisms.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X	X	X	X	X

CO3	X	X			X
CO4	X	X	X	X	
CO5	X			X	

ALLIED-IV: CLINICAL BIOCHEMISTRY (Theory)

After Completing the course, CLINICAL BIOCHEMISTRY (Theory)the students will be able

CO. no Course Outcome

CO-1. Provide knowledge on blood glucose homeostasis. Maintenance of blood glucose by hormone

CO-2. Discuss the Liver function 3. Study the function of amino acid and Kidney function tests - Inulin, urea and creatinine clearance tests

CO-3. Learn lipid mechanisms and abnormal levels of these lipids in diseases.

CO- 4. Learn about hormonal disorders - Acromegaly, Cushing's syndrome, Addison's disease, Goitre, Grave's diseas

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X	X	X	X	X
CO3	X	X	X	X	X
CO4	X	X			X
CO5	X	X	X		X

FIFTH SEMESTER<u>COREV-THEORY:MEDICALBACTERIOLOGY</u>

After Completing the course, MEDICAL BACTERIOLOGY (Theory)the students will be able

CO No. Course Outcome

COToobtainknowledgeonhandlingofclinicalspecimensofbacterialsamplesandlearnthemethodofcollection,transportandprocessingof

Clinical samples.

CO-2. Students learn as diagnostic part of any specimen to identifying the Antibiotic sensitive bacteria.

CO-3. Learn the morphology, cultural characters, biochemical analysis, Clinical finding and lab diagnosis of gram positive bacteria.

CO-4. Know about medically important gram negative bacteria and diseases.

CO-5. Learn the morphology, cultural characters, biochemical analysis, clinicalfindingandlabdiagnosis,treatmentofspirochetes,sexuallytransmittedmicroorganismsand miscellaneousmicroorganisms.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X			X	X
CO3	X	X			X
CO4	X	X	X	X	X
CO5	X	X	X		

COREVI-THEORY:MEDICALMYCOLOGYANDPARASITOLOGY

After Completing the course, MEDICAL MYCOLOGY AND PARASITOLOGY (Theory)the students will be able

CO No. Course Outcome

CO-1. The students learn about able the systematic of classification & Essentials of fungal taxonomy.

CO-2. To understand the medically important dermatophytic fungi, opportunisticfungiandsubcutaneousfungiforitsmorphology,characteristicfeatures and lab diagnosis, treatment.

CO-3. The students will obtain knowledge on handling of clinical specimens of fungal samples. They acquire a septic method of collection, transport, Isolation and testing of medically important fungi.

CO-4. The students learn about classification and importance of intestinal Parasite and blood parasites.

CO5.Tounderstandmorphology,culturalcharacters,biochemicalanalysis,clinicalfinding,labdiagnosisandtreatmentofintestinallyimportant cestodes, nematodes and helminthes.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X	X		X	X
CO3		X		X	X
CO4		X			X

CO5	X	X	X	X	X

COREVII THEORY:MEDICAL VIROLOGY

After Completing the course,MEDICAL VIROLOGY (Theory)the students will be able

CONo.CourseOutcome

CO-1. To study the general properties, cultivation and Detection techniques.

CO-2. Understand the morphology, pathogenecity, clinical feature, diagnosis And treatment, prophylaxis of arthropod and zoonotic viruses.

CO-3. Information about the viruses like Pox, HIV, Flavi, Oncogenic viruses And recent viral outbreaks.

CO-4. Bacteriophages- properties, lifecycle and importance in microbiology.

CO-5. Viral disease- prevention, diagnosis and treatment.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X			X	X
CO3		X	X		
CO4	X	X			X
CO5	X	X	X	X	X

CORE V – PRACTICAL: BACTERIOLOGY, MYCOLOGY,PARASITOLOGYAND VIROLOGY

After Completing the course,MEDICAL MICROBIOLOGY PRACTICAL the students will be able

CO No. Course Outcome

CO-1. To develop skills for collection, transport and isolate the medically Important bacteria from various clinical specimens

CO-2. Learn about isolation and identification of clinically important bacteria.

CO-3. To Understand methods for isolating viruses, bacterio phages .

CO-4. Learn about both conventional and advanced techniques for isolation And identification of medically important fungi

CO-5. To be familiar with various morphological features to identify the Intestinal and blood protozoans.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X			X	X

CO3	X	X	X	X	X
CO4			X	X	X
CO5	X	X			X

ELECTIVE1–THEORY:BIOTECHNOLOGY ANDGENETIC ENGINEERING

After Completing the course,**BIOTECHNOLOGY ANDGENETIC ENGINEERING(Theory)**the students will be able

CO No. Course Outcome

CO-1.. Gains basic knowledge on the concept of gene and gene transfer mechanism.

CO-2. Learn about the mutation types and its detection.

CO-3. Gives wide knowledge on various vectors for gene cloning.

CO-4. Obtain ideas on the various enzymes used in genetic engineering.

CO-5. Provides overview on the methods of gene cloning and gene transfer.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1			X	X	X
CO2	X	X	X	X	X
CO3	X	X	X	X	X
CO4	X			X	X
CO5	X	X	X		

SIXTHSEMESTER

COREVIII-THEORY:ENVIRONMENTAL MICROBIOLOGY

After Completing the course,**ENVIRONMENTAL MICROBIOLOGY(Theory)**the students will be able

CO No. Course Outcome

CO-1. To know about organization of biosphere and components of ecosystem.

CO-2. To learn about microbes in extreme environments.

CO-3. To learn in detail about microbes in aquatic environment ,water pollution,waterbornedisease,Microbiologicalanalysisofwater,Hometreatmentsystem.
CO-4. To know about Composition of air, airborne microorganism, airborne diseases, quality assessment methods and air sanitation.
CO-5. To learn about solid and liquid waste management.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X			X	X
CO3	X	X			X
CO4	X	X			X
CO5	X	X	X	X	X

COREIX-THEORY:FOODANDDAIRY MICROBIOLOGY:

After Completing the course **FOODANDDAIRY MICROBIOLOGY(Theory)**the students will be able

CO No. Course Outcome
CO-1. To study the role of microorganism in food. Importance of
Microorganism in food.
CO-2. Understand the principles of food Preservation by physical method.
CO-3. To study the contamination of different types of food.
CO-4. Pathogenesis and clinical feature of food borne pathogens. Food analyse and bylaboratorytestingand food sanitation.
CO-5. Fermentationfood –cheesebread,andbeverages.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X	X	X	X	X
CO3	X			X	X
CO4	X	X			X

CO5	X	X	X		

CORE VI- PRACTICAL: ENVIRONMENTAL, FOOD AND DAIRY MICROBIOLOGY

After Completing the course **APPLIED MICROBIOLOGY(Theory)**the students will be able

CONo. CourseOutcome

CO-1. To learn about Detection of number of Bacteria in milk by various method.

CO-2. Gains knowledge to determine the quality of milk

CO-3. Learn to isolate the yeast and molds from spoiled food.

CO-4. Assessment of water quality by selected Biological and chemical methods.

CO-5. Learn to Quantify the microorganisms in air and detection of aflatoxin.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X			X	X
CO3	X			X	X
CO4	X	X	X		
CO5	X	X	X	X	X

ELECTIVE 2 – THEORY:INDUSTRIALANDPHARMACEUTICALMICROBIOLOGY:

After Completing the course**INDUSTRIALANDPHARMACEUTICALMICROBIOLOGY(Theory)**the students will be able

CONo. Course Outcome

CO-1. Learn about of fermentation process and industrially important microorganisms.

CO-2. Learn about types of fermentations and fermentor.

CO-3. Provides knowledge on the production of commercial microbial products.

CO-4. Gain knowledge on separation, extraction, purification and packaging of products.

CO-5. Acquire knowledge on the ecology of Pharmaceutical industries, Good Manufacturing practices, and sterile pharmaceutical preparations.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X	X	X
CO2	X			X	X
CO3	X			X	X
CO4	X	X	X		
CO5	X	X	X	X	X

ELECTIVE3–THEORY:MICROBIAL MARKETABLE PRODUCTS

After Completing the course**MICROBIAL MARKETABLE PRODUCTS**(**Theory**)the students will be able

CONo.CourseOutcome

CO-1. Acquire the knowledge about Spirullina and its cultivation.

CO-2.. Gain in depth knowledge about edible mushroom and its cultivation

CO-3. Acquire a thorough understanding of the importance of probiotics in human health and their production on a large scale

CO-4. Get an awareness of the availability of natural pigment and its application, Bio fertilizers and their application

CO-5. Imbibe knowledge on the various marketing strategy such as patenting, trade mark, marketing, license procurement etc.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X			X	X
CO3	X	X	X	X	X
CO4	X	X			X
CO5	X	X			X

B.Sc. DEGREE COURSE IN PSYCHOLOGY

B.Sc. DEGREE COURSE IN PSYCHOLOGY

PROGRAMME OUTCOME

PO1: To **prepare** students for challenging careers in academia and/or health-care sectors by providing healthy environment for clinical and counseling services, teaching, learning and research in the core and applied areas of the discipline.
PO2: To **provide** an understanding of advanced psychological theories and interventions.
PO3: To keep a balance between fundamental concepts, core areas of psychology and specialized skills required to adapt to the needs of the dynamically evolving health sector.
PO4: To **provide** a strong foundation in theory along with a clear basis of psychological principles, enabling them to make and interpret psychological assessments.
PO5: To **learn** and **evaluate** a range of theories and principles of psychology and applications.
PO6: To **design, analyze, develop** and **evaluate** individualized education plan for those with learning disabilities and individualized intervention plan for the mentally challenged.
PO7: To **undertake** challenging projects and work as active researchers in the field of Psychology.
PO8: To **identify** and **learn** about recent research and trends in education and health sector.
PO9: To **equip** the student with a basic knowledge of other domains, disciplines and skills, a social and environmental consciousness and a strong value base.

PROGRAMME SPECIFIC OUTCOME

PSO1: To **implement** the concept of theory and techniques of counseling and psychology for solving problems in day to day life.
PSO2: To **inculcate** curiosity among students towards learning new and emerging technologies in psychology and to enable them to adapt quickly to changes.
PSO3: To **design, execute** and **evaluate** individualized plans in academia and healthcare.
PSO4: To **make** them known the contextual knowledge in psychology and communicate effectively with stakeholders and with the society at large for enhancing their quality of life.
PSO5: To **encourage** them to be honest in upholding the ethical principles and social responsibilities along with socio-economic innovations.

GENERAL PSYCHOLOGY – I
COURSE OUTCOME
After completing the course GENERAL PSYCHOLOGY – I, the students will be able:

CO1: To **explain** the nature, scope, methods and branches of various fields of Psychology.
CO2: To **summarize** the fundamental processes underlying human behaviour such as sensation, perception and attention.
CO3: To **relate** the nature of consciousness and the underlying theoretical interpretations and **describe** the various stages of sleep & dreams.
CO4: To **outline** and **compare** the nature, principles and the various theories of learning.
CO5: To **summarize** and **compare** the various functions and memory processes involved in memory and forgetting.

CO-PO MAPPING

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
CO1	X					X	X	X	
CO2			X	X	X	X			
CO3	X	X		X	X		X		
CO4	X	X		X	X	X	X	X	
CO5	X	X	X	X				X	

BIOLOGICAL PSYCHOLOGY - I
COURSE OUTCOME
CO1. To **explain** the research methods and perspectives of biopsychology and the reciprocal relationship between brain and behavior.
CO2. To **illustrate** the anatomy and function of the neural cell.
CO3. To **relate** how neurons communicate with each other.
CO4. To **name** the divisions of the nervous system, its chief structure and functions.
CO5. To **outline** the role of Endocrine glands and Hormones in influencing Human Behavior.
CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X	X	X		X	X	
CO2	X	X	X	X	X	X	X	X	
CO3	X	X	X	X	X		X		
CO4	X	X	X	X	X	X	X	X	
CO5	X	X	X	X	X		X	X	X

GENERAL PSYCHOLOGY II

COURSE OUTCOME:

After completion of the General Psychology II course, students will be able:

CO1. To **spell out** the different types of cognition, thinking processes, decision making and language development.

CO2. To **summarize** the various theories of Motivation, frustration and conflicts.

CO3. To **outline** the characteristics and theories of emotions and stress.

CO4. To **explain** the nature, theories and assessment of Intelligence, Emotional Intelligence and creativity.

CO5. To **analyze** various theories of Personality and describe the assessment & application of the Personality tests.

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X	X	X	X	X	X	X
CO2	X	X	X		X	X	X	X	
CO3	X	X	X		X		X		
CO4	X	X	X	X	X	X	X	X	
CO5	X	X	X	X	X	X	X	X	

BIOLOGICAL PSYCHOLOGY - II

COURSE OUTCOME

After completion of the Biological Psychology II course, student will be able:

CO1. To outline the biological basis of Sleep & Dream and various sleep disorders.

CO2. To explain brain development and neuro plasticity.

CO3. To summarize the brain mechanism involved in regulating thirst, hungry and feeding.

CO4. To relate biopsychology of emotions in relation to stress and ill health.

CO5. To identify the brain areas associated with learning& memory and outline the causes of memory disorders .

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1		X		X	X	X	X		
CO2	X				X	X	X	X	
CO3	X			X		X	X		
CO4	X	X	X			X	X	X	X
CO5	X	X	X	X	X	X	X	X	X

DEVELOPMENTAL PSYCHOLOGY I

COURSE OUTCOME

After completion of the Developmental Psychology I course, student will be able:

CO1: To **summarize** the developmental stage of conception through birth.

CO2: To **explain** the developmental stage of infancy and babyhood.

CO3: To **recall** the various developmental process of early and late childhood.

CO4: To **relate** various Developmental stages of socialization, family relations and personality development.

CO5: To **infer** roles of the psychologist at different stages of development.

CO-PO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X	X		X	X		X
CO2	X			X	X		X	X	
CO3	X			X	X	X	X		
CO4	X	X	X		X				X
CO5	X	X	X	X		X	X	X	X

EXPERIMENTAL PSYCHOLOGY

COURSE OUTCOME

After completion of the Experimental Psychology course, students will be able:

CO1: To demonstrate the effect of distraction, division and span of attention.

CO2: To explain the factors involved in errors of perception.

CO3: To demonstrate the concepts of transfer of learning, trial and error learning, insight learning and learning through the knowledge of results.

CO4: To relate to one's own level of aspiration and achievement motivation.

CO5: To infer various emotional patterns in oneself and others.

CO6: Illustrate the use of the motor-skills in manual and tweezer dexterity.

CO7: To demonstrate assessment of IQ levels.

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X				X	X	X		
CO2	X	X							
CO3	X	X	X			X	X		
CO4	X			X			X		X
CO5	X	X	X			X	X		X
CO6	X		X				X		
CO7	X			X		X	X	X	

DEVELOPMENTAL PSYCHOLOGY–II

COURSE OUTCOME

After completion of the Developmental Psychology II course, student will be able:

CO1: To summarize the developmental process of puberty and adolescence.

CO2: To relate the various development process of young adulthood.

CO3:To explain the developmental tasks of middle age.

CO4: To identify problems related to old age.

CO5: To apply and understand various developmental theories according to the developmental age.

CO-PO MAPPING:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X		X	X	X	X	X
CO2	X		X	X	X			X	
CO3	X	X	X		X	X	X		X
CO4	X			X		X		X	
CO5	X	X	X	X	X	X	X		X

PSYCHOLOGICAL ASSESSMENT

COURSE OUTCOME:

After completion of the Psychological assessment course, students will be able:

1. To assess Personality, Aptitude & Interest and interpret the results.
2. To measure and interpret achievement test, stress and coping levels.
3. To select appropriate test to measure attitude, behavior & creativity and discuss the results.

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X		X	X		X	X	X	X
CO2	X		X	X		X	X	X	X
CO3	X		X	X		X	X	X	X

ABNORMAL PSYCHOLOGY-I

COURSE OUTCOME:

After completion of the Abnormal Psychology-I course, students will be able:

CO1: To distinguish between normal & abnormal behavior.

CO2: To outline the historical background and need for classification.

CO3: To summarize the various models of abnormality.

CO4: To identify clinical features and causes of neurodevelopmental disorder, conduct disorder & neurocognitive disorder.

CO5: To explain the clinical features and causal factors of anxiety related disorder.

CO6: To outline the clinical features and causal factors of somatic and dissociative disorder.

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X		X				
CO2	X	X	X						
CO3	X	X	X	X					
CO4	X				X		X	X	
CO5	X	X	X	X					X
CO6	X	X	X	X			X		

SOCIAL PSYCHOLOGY–I

COURSE OUTCOME:

After completion of the Social Psychology-I course, students will be able:
CO1: To outline the nature, history, principles and scope of social psychology and methods used in social psychology research.
CO2: To illustrate the significance of self- presentation behaviors in relation to the multifaceted development of the self.
CO3: To infer the interconnections between attitude and behavior.
CO4:To compare the reasons of conformity, compliance and obedience.
CO5: To summarize the conditions promoting helping behavior and infer conditions of bystander effect.

CO-PO MAPPING:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X	X	X			X	X
CO2	X			X		X			X
CO3	X	X	X		X	X	X	X	
CO4	X	X		X	X	X	X		X
CO5	X	X	X	X	X	X	X	X	X

RESEARCH METHODOLOGY

COURSE OUTCOME:

After completion of the Research Methodology course, students will be able:
CO1: To explain the needs, objectives, importance, problem and process of research based on review of literature.
CO2: To identify research problems and formulating hypothesis.
CO3: To distinguish between the different types of sampling.
CO4. To examine the methods used in data collection.
CO5**.** To demonstrate an understanding of writing a research report.

CO-PO MAPPING:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X		X	X		X	X		X
CO2	X	X		X			X	X	
CO3	X	X		X	X		X	X	
CO4	X	X			X	X	X	X	X
CO5	X		X	X	X		X	X	X

HEALTH PSYCHOLOGY

COURSE OUTCOME:

After completion of the health psychology course, the student will be able:
CO1: To outline the definition and scope of Health Psychology.
CO2: To explain the various models of health behavior.
CO3: To identify types of pain, symptoms and suitable intervention.
CO4: To summarize theories of stress, sources of stress and coping.
CO5: To explain health promoting strategies.

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X						X	
CO2		X	X		X	X	X	X	X
CO3	X	X	X	X			X	X	
CO4	X	X	X	X	X	X	X	X	
CO5	X	X	X			X			

ABNORMAL PSYCHOLOGY – II
COURSE OUTCOME:
After completion of the abnormal psychology - II course, students will be able:
CO1: To explain the causes of unipolar and bipolar disorder and treatment.
CO2: To outline the clinical feature, causal factor and treatment of schizophrenia and other psychotic disorder.
CO3: To summarize types, causes and treatment of Personality disorder.
CO4: To explain the types,causal and treatment of substance related disorder.
CO5: To identify the different types of prevention and summarize the different models of therapies.

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9

CO1	X	X					X		
CO2	X	X	X				X		
CO3	X	X	X				X		
CO4	X	X	X	X			X		
CO5	X	X	X		X	X	X	X	

SOCIAL PSYCHOLOGY-II

COURSE OUTCOME:

After completion of the Social Psychology-II course, students will be able:

CO1: To outline the theories of persuasion and illustrate the factors in resisting persuasion.

CO2: To determine the influence of various group behaviors in relation to individual's performance.

CO3: To outline the nature, sources and consequences of prejudice and illustrate methods to counteract effects of prejudice.

CO4: To summarize the theories of aggression and strategies to regulate aggression.

CO5: To identify the dynamics of intimate relationships in relation to internal and external sources of attraction.

CO-PO MAPPING:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X	X	X	X	X	X	
CO2		X		X	X		X		X
CO3	X	X	X		X	X	X	X	X
CO4			X	X		X		X	X
CO5	X	X	X	X	X	X	X	X	X

INTRODUCTION TO THEORIES OF PERSONALITY

COURSE OUTCOME:

After completion of the Introduction to theories of personality course, students will be able:

CO1: To explain the concept, assessment, measurement and research methods of Personality.
CO2: To outline the various psychoanalytic perspectives of Personality.
CO3: To summarize the life span and trait perspective of Personality
CO4: To outline the existential humanistic perspective of Personality.
CO5: To explain Behavioral, Cognitive and Social perspectives of personality.

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X	X	X	X	X	X	
CO2	X	X	X	X	X	X	X	X	
CO3	X	X	X		X		X		
CO4	X	X	X		X	X	X	X	X
CO5	X	X	X	X	X	X	X	X	X

INTRODUCTION TO INDIAN PSYCHOLOGY
COURSE OUTCOME:
After completion of the Introduction to Indian Psychology course, students will be able:
CO1: To outline the fundamental concept of Indian Psychology in comparison with Western Psychology concepts.
CO2: To examine various concepts of Indian Psychology on Personality and states of consciousness through Upanishads, Nyaya, AdvaitaVedantam etc
CO3: To illustrate the ideas of Yoga and apply the knowledge for self-development
CO4: To analyzing various religious school of thought in explaining the concept of Mind
CO5: To Apply the concept of Indian psychology in various fields like counseling, education, organizational behavior etc.

CO-PO MAPPING:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X		X	X	X	X	X

CO2	X		X	X		X			
CO3	X	X		X	X	X	X		X
CO4	X	X	X	X	X				X
CO5	X	X	X	X	X	X	X	X	X

INTRODUCTION TO COMMUNITY PSYCHOLOGY

COURSE OUTCOME:

After completion of the Introduction to Community Psychology course, students will be able:

CO1: To define and explain the core values of community psychology in Indian context.

CO2: To analyze and evaluate various socio-cultural psychological models and behaviours of Indian youth.

CO3: To critically examine the socio-economic indicators and its impact on development.

CO4: To appraise the role of human development and family structure on Mental Health.

CO5: To develop preventive measures and design promotion programmes for better community development.

CO-PO MAPPING:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X		X	X	X	X	X		X
CO2	X	X		X	X	X	X		X
CO3	X	X	X	X	X		X	X	X
CO4	X	X				X		X	
CO5		X	X	X	X	X	X	X	X

STATISTICS IN PSYCHOLOGY

After completion of the Statistics in psychology course, students will be able:

CO1: To explain the different levels of measurement and methods of organizing data in statistics.

CO2: To make use of mean, median, mode and variability.

CO3: To illustrate and apply the concepts of normal distribution.

CO4: To find out correlation.

CO5: To test for significance in hypotheses testing.

CO6: To select and utilize appropriate non-parametric statistics.

CO-PO MAPPING:

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**

CO1	X		X	X	X		X	X	
CO2	X			X	X	X	X		X
CO3		X		X			X	X	X
CO4	X		X	X	X	X	X	X	X
CO5					X		X	X	X
CO6				X			X	X	X

CONSUMER BEHAVIOUR AND ADVERTISING

COURSE OUTCOME:

After completion of the consumer behaviour and advertising course, students will be able:

CO1: To explain the field and scope of consumer behaviour and impact of new technology on marketing strategies.

CO2: To outline the different aspects of research in the field of consumer process.

CO3: To apply concepts of motivation and perception on consumer behaviour.

CO4: To explain the features, goals, functions, types and models of advertising.

CO5: To determine the framework in advertising, role of media in advertising and ethical standards in advertising.

CO-PO MAPPING:

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
CO1	X	X	X		X		X	X	X
CO2	X						X	X	X
CO3	X	X			X		X	X	X
CO4	X		X		X		X	X	X
CO5	X		X				X	X	X

SPORTS PSYCHOLOGY

COURSE OUTCOME:

After completion of the Sports Psychology course, students will be able to:

CO1: To explain the need, importance and research methods in sports psychology

CO2: To relate physical activity and Mental Health

CO3: To describe the nature, measurement of attitude towards sports behavior
CO4: To classify various abilities and skills
CO5: To explain the prevalence, etiology and intervention of alcohol and drug use among athletes

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X			X			X	X	X
CO2	X	X			X		X	X	X
CO3				X	X		X	X	
CO4					X		X	X	X
CO5	X						X	X	X

GUIDANCE AND COUNSELLING PSYCHOLOGY

COURSE OUTCOME:

After completion of the Guidance and counselling Psychology course, students will be able:
CO1. To identify the need and importance of counselling in the current context.
CO2. To explain the various approaches in counselling and the types, uses & diagnosis in counselling process.
CO3. To summarize the interpretation of psychological tests in counselling.
CO4. To list the qualities of an effective counsellor.
CO5. To identify the special areas of counselling.
CO6. To spell out the ethical guidelines laid down by the American Psychological Association and the role of counsellor in promoting good Mental Health.

CO-PO MAPPING:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X	X		X	X		X	X

CO2	X	X	X	X	X	X	X	X	X
CO3	X			X		X		X	
CO4	X					X			
CO5	X					X			
CO6	X	X				X	X	X	

HUMAN RESOURCE MANAGEMENT

COURSE OUTCOME:

After completion of the human resource management course, students will be able:

CO1. To outline the basic concepts of human resource management.

CO2. To relate the need for job analysis in relation to Human Resource Planning and Recruiting.

CO3. To list strategies for analyzing training needs and developing employees.

CO4. To explain the techniques of performance appraisal.

CO5. To spell out how stress management, conflict management and employee empowerment help in employee motivation.

CO-PO MAPPING:

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
CO1	X	X	X	X	X	X	X	X	X
CO2	X					X		X	X
CO3	X					X		X	
CO4	X		X		X	X		X	
CO5	X	X	X	X	X	X	X	X	X

B.SC. DEGREE COURSE IN ELECTRONIC MEDIA

UNIVERSITY OF MADRAS
B.Sc. DEGREE COURSE IN ELECTRONICMEDIA
SYLLABUS WITH EFFECT FROM - 2022

PROGRAM OUTCOMES

PO1: To develop the skills that enablesthe students to get employment in film industries or pursuehigher studies or research assignments or turn as entrepreneurs.
PO2: To createthe ability in students to apply their knowledge and skills they have acquired to thesolution of specific theoretical and applied problems technicallyin media.
PO3: To modify students with learning experiences that develop broad knowledge andunderstanding of key concepts of mediaand equip students with recent technological capabilities for analyzing and tackling the issues and problems inthe field of media organization.
PO4: To provide a strong foundation in theory along with a strong practical knowledge and skill development
PO5:To learn and evaluate one's individual ability in learning and improving their practical knowledge.
PO6: To provide students with learning of communication in visual media.

PROGRAM SPECIFIC OUTCOMES

PSO1:Tomakethestudentscurioustowardslearningnewandemergingtechnologiesin media industry.
PSO2: To facilitate, execute and support individualized plans in academics and media industry.

PSO3: To educate the students about the advanced media technologies.

PSO4: To make them known the provisional knowledge in media and to provide with proper opportunities for them to showcase their skill and to satisfy the media industry's requirements.
PSO5: To educate the students about the advanced media technologies.

COURSE OUTCOME:

After completing the course History of Electronic Media, the students will be able:

CO1. To acquire knowledge of electronic media and its scope and its importance in various media such as radio, television, cinema and social media.

CO2. To explain the Information about various media organizations in India and their functions.

CO3. To elaborate of Broadcasting regulations in India an-d its governance in media

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X	X			
CO2			X			X
CO3			X			

COURSE OUTCOME:

After completing the course Communication aesthetics, the students will be able:

CO1. To develop the knowledge on Communication aesthetics, 2D and 3D field and its applications in visual media.

CO2. To acquire the Knowledge of Light and shade and colour and its terminologies and lighting techniques and lighting equipment and accessories in depth.

CO3. To educate knowledge of fourth dimensional field time, objective time and subjective time and editing principles in relation to time, screen time and real time.

CO4. To compile knowledge of fifth dimensional field, sound structures and sound picture combinations

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1					X	X
CO2					X	
CO3				X	X	X
CO4						X

COURSE OUTCOME:

After completing the course Videography, the students will be able:

CO1. To create theknowledge of human eye and camera, video camera design and functions, nature of light and its resources.

CO2.To educate information about lighting procedure in indoor and outdoor, aesthetics of videography and framing techniques and different lighting formats.

CO3.To acquire knowledge of works of eminent cinematographers in the industry.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X	X	X	X	
CO2	X				X	X
CO3				X	X	

COURSE OUTCOME:

After completing the course Video editing (Principles and Practices)**, the students will be able:**

CO1. To create the knowledge of fundamentals of editing, editing equipments and functions, linear and non-linear editing functions.

CO2. To describe theinformation of Standards in sound editing, editing accessories, aesthetics of editing, mixing of sound and visuals.

CO3. To acquire knowledge of Latest Editing Softwares and their Applications.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X	
CO2				X	X	
CO3	X			X		X

COURSE OUTCOME:

After completing the course Video editing Television production management**, the students will be able:**

CO1. To describe the knowledge of Television production management and production environment

CO2. To acquire knowledge of pre-production process, planning and research

CO3. To educate knowledge of single and multi-camera operations in Television

CO4. To develop the knowledge of post-production process in television, budgeting and talent management

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1					X	X
CO2					X	
CO3				X	X	X
CO4						X

COURSE OUTCOME:

After completing the course Video editing Graphics and Animation**, the students will be able:**

CO1. To develop the knowledge of graphics and animation, basics of digital technologies, aesthetics and design of computer graphics

CO2.To acquire the knowledge of CG Application areas and equipment, CG Standards and Formats

CO3.To educate the knowledge of 2D images and graphics, 3-D Modeling, rendering color and rendering models

CO4. To define knowledge of animation, dynamics, multimedia systems, products and platforms Recent Developments in software and hardware systems

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X				
CO2						
CO3				X		
CO4					X	

COURSE OUTCOME:

After completing the course Video editing Principles of audiography**, the students will be able:**

CO1. To acquire the knowledge of principles of sound, acoustics, sound equipments, sound aesthetics and sound production.

CO2.To educate the strategies in designing sound, digital recording, Synchronization and functions of sound in relation to picture.

CO3.To make students well in audiography.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1				X		
CO2					X	
CO3	X		X			

COURSE OUTCOME:

After completing the course Video editing VIDEO PRODUCTION PRACTICAL**, the students will be able:**

CO1. To educate the knowledge of making documentary films.

CO2. To acquire the knowledge of documenting the facts in the social perspective and writing draft for documentary.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X		
CO2	X			X		

COURSE OUTCOME:

After completing the course Video editing COMMUNICATION SKILLS**, the students will be able:**

CO1.To develop the knowledge of communication and its nature, scope and types. Verbal and non-verbal communication.

CO2.To educate the knowledge of communication for social change, alternative media for social change and case studies in communication skills.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					X
CO2			X			X

COURSE OUTCOME:

After completing the course Video editing RADIO PRODUCTION**, the students will be able:**

CO1.To acquire the knowledge of radio stations, basics of radio programming, radio station organization.

CO2.To develop the knowledge of radio formats and styles and advanced radio production techniques**.**

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X			X	
CO2						X

COURSE OUTCOME:

After completing the course Video editing FILM STUDIES**, the students will be able:**

CO1.To make the students know the knowledge of history of film, early cinema, cinema after the coming of sound.

CO2.To develop the knowledge of cinema in the third world and national, regional cinemas

CO3.To educate the knowledge of Techniques in cinematography, budget and production process.

CO4.To acquire the knowledge of digital distribution of cinema, film forms and post production techniques.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X				X	
CO2				X		
CO3	X		X			
CO4						X

COURSE OUTCOME:

After completing the course Video editing ACTING AND DIRECTION**, the students will be able:**

CO1.To compose the knowledge of acting, scriptwriting basics and its formats, storyboard.

CO2.To acquire the knowledge of direction basics and its techniques.

CO3.To develop the knowledge of TV direction and its technique.

CO4.To educate the knowledge of Logistics management, production management and film certification process.

CO5.To make the students the knowledge of OTT Platforms and digital release and digital cinema projection packages.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X				X	
CO2		X				X
CO3	X		X			
CO4						
CO5						X

COURSE OUTCOME:

After completing the course Video editing MEDIA ORGANIZATION**, the students will be able:**

CO1.To develop the knowledge of nature and structure of Media organizations, private satellite channels, production houses, employment opportunities in Indian media industry.

CO2.To acquire the knowledge of media economics, state of the industry today.

CO3.Toeducate the knowledge of media project management, production project cycle, risk and impact assessment, budgeting and project responsibility.

CO4.To enhance the knowledge of different kinds of contracts and legal arrangements in media projects.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X	
CO2		X				X
CO3			X			
CO4	X			X		

COURSE OUTCOME:

After completing the course Video editing COMMUNICATION CULTURE AND SOCIETY**, the students will be able:**

CO1.To develop the knowledge in understanding communication, culture and society, mass media and characteristics, media effects, power of media, Indian media, audience theories

CO2.To acquire the knowledge of media and text, Marxism, semiotics, sociology and psychoanalysis and media and realism, social construction of media

CO3.To educate knowledge of Media rhetoric, myth, cultural studies, audience positioning and critical autonomy, popular culture and media, popular text, and people's culture.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X			X
CO2						
CO3	X			X		

COURSE OUTCOME:

After completing the course Video editing INTERNSHIP**, the students will be able:**

CO1.To knowledge from media industry practical training and hands on exposure to media practice from the leading organizations in television, radio, social media, film making, animation industry, special effects lab, video and audio editing studios

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X	X		X

COURSE OUTCOME:

After completing the course Video editing AUDIOGRAPHY LAB**, the students will be able:**

CO1.To acquire knowledge of types of microphones, sound recording formats, mixers and consoles, sound editing and special effects.

CO2.To educate knowledge of technical expertise in handling appropriate software in sound editing.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X	X
CO2					X	

COURSE OUTCOME:

After completing the course Video editing VIDEOGRAPHY LAB**, the students will be able:**

CO1.To educate the knowledge of lighting equipments and types of lighting, indoor and outdoor lighting techniques.

CO2.To develop knowledge of Camera movements and angles and camera support systems and accessories.

COURSE OUTCOME:

After completing the course Video editing RADIO PRODUCTION LAB**, the students will be able:**

CO1.To practice knowledge of Radio announcing, radio commercial, drama, interviews, news, documentary and live shows.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X	X

COURSE OUTCOME:

After completing the course Video editing SCRIPT WRITING (practical)**, the students will be able:**

CO1.To develop knowledge of writing scripts and its formats and script writing concepts.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X		X	X

COURSE OUTCOME:

After completing the course Video editing SCRIPT WRITING (practical)**, the students will be able:**

CO1.To educate the knowledge of writing scripts and its formats and script writing concepts.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X	X		X	

B.SC. DEGREE COURSE IN VISUAL COMMUNICATION

UNIVERSITY OF MADRAS
M.Sc. VISUAL COMMUNICATION
(Syllabus with effect from 2022-2023)

PROGRAMME EDUCATIONAL OBJECTIVES

1. Todevelopskillsrequiredtomeetthedemandsofmediaandentertainmentindustry
2. Togainmeaningfulemploymentinwiderangeofentertainmentandcreativeindustries
3. Todevelopcreativeandinnovativewaystogenerate,anddesigneffectivemessages
4. Across media platforms
5. To gain procedural knowledge, to work as individual and in teams to fulfilworkflows and tasks in media organisations
6. To gain academic and scholarly knowledge to become effective researchers, teachers andmentorsinthedisciplineofcommunication
7. Learns will develop entrepreneurial skills to work independently or find gainfulemploymentinthe established entertainmentindustry
8. Toengageinethicallyandsociallyresponsiblemediapracticesandseverasachangeagent
9. To inculcate the values of truth-seeking, truth-telling, intellectual honesty and respect forview-pointdiversity.

PROGRAMOUTCOME

1. Abilitytodesign,develop andproduce mediacontentonawiderangeoftopic
2. Demonstrate mastery over a range of skill sets and techniques to work onmultipleplatformsandformats
3. Tobecomeanenterprising,enthusiasticandcreativemediaprofessional
4. Tobecomeanactiveandadaptiveleader,tokeepphasewiththerapidchangesinmediaindustry
5. Abilitytoconductindependentacademicandcommercialresearchwithappropriatescientificattitudeandcommitment
6. Ability to make ethical and socially conscious decisions in professional mediapractices.

MAPPINGOFPROGRAMMEEDUCATIONALOBJECTIVESWITH PROGRAMMEOUTCOMES

Abroadrelationbetweentheprogrammeeducationalobjectiveandtheprogrammeoutcomeisgiveni nthefollowingtable.

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

PROGRAMMESPECIFICOUTCOMES(PSOs)

BythecompletionoftheM.Sc.VisualCommunicationprogramme,thestudentswillhavethefollowi ngprogramme-specific outcomes.

1. Learnerswillgainproceduralknowledgetopracticeawiderangeofskillsthedomainofcomputer graphics, multimedia design and visualeffects
2. Learnerswillhavedevelopedcompetencyindesigningprofessionalqualitymultimediapackagesan d adapted to multipleplatforms
3. Learnerswillbeadeptatproducingfictional,non-fictionalandinformation-orientedcontentusingcutting-edgetoolsandcreativestrategies
4. Learnsgaintheabilitytocreateobjects,models,elementsandpropertiesforextendedrealitycontents uchas Virtualreality, Augmentedrealityandgamedesign
5. Learnswilldevelopentrepreneurialskillstoworkindependentlyandadaptiveenoughforgainfulemp loymentinestablished mediaorganizations
6. Learnswillbeable to adherehighethicalstandardsandsocialcommitment for holisticprofessionalpractices

   Learnswillgainin-depthknowledgeofscientifictheoriesunderpinningcommunicationdisciplineandcarryoutscholar lyandcommercialresearchwithscientificattitudeandintegrity

COURSE OUTCOME:

After completing the course UnderstandingHumanCommunication, the students will be able to:

1. Analyse various aspects of communication and articulate good communication principles.
2. Analyse and interpret signals, language, and signs as well as other aspects of human communication.
3. Demonstrate various modes of communication using message design principles.
4. Determine criteria for appropriate message design by distinguishing multi-level communication flows.
5. Analyse and interpret the behaviour of information, communication systems, and the spread of ideas in contemporary mediums.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Graphic Arts & Animation, the students will be able to:

1. Identify and demonstrate the knowledge in 2D Animation and the software
2. To build basic ideas and be familiar with important principles of animations
3. Utilize knowledge on how to generate a still and image processing in animations
4. Develop the fundamentals and various techniques in White board animations
5. Analyse the practical knowledge and understand the Photo voice methods and process.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO		PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		X					X	X
CO2				X	X	X	X	
CO3		X		X	X	X		X
CO4		X	X		X	X	X	X
CO5		X	X	X	X			

COURSE OUTCOME:

After completing the course Computer Graphics – 1 – 3D Designs, the students will be able to:

1. Skills to create 3d designs
2. Skills to create Nurbs & Splines
3. Skills to create polygon modelling
4. Skills to add Textures & material to models
5. Skills to take Render output

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Creative Digital Illustration, the students will be able to:

1. Job profile as Professionals in Visualization, Creative Illustration, Cartoon and Caricature artist
2. Job profile as political Cartoonist, Magazine layout artist, Film Title designers
3. Professionals as Visual Analyzer, Graphic designers, Special visual effects designer
4. Professionalism in Animation design, 2D animation artist
5. Job description as Concept Artist, Game Designer,3D Animator

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Contemporary Trends in Indian Media, the students will be able to:

1. Critically assess the use of rhetoric in an array of advertising and media materials, as demonstrated through successful completion of quizzes and critical analyses and Online critique of advertising and media campaign materials
2. Learners can become script writers content writers and program producers for mass media productions.
3. Learners will be able to write and develop the content for new media.
4. Learners will understand the ethics and basic principles in writing materials for advertisements.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Media Aesthetics, the students will be able to:

1. Learners are exposed to Television channels, news reporting
2. Learners are trained as cinematographers, Designers, Visualizers
3. Learners become program producers, photojournalists
4. Learners are trained as social media experts in the media profession
5. Learners are experts in Television management production

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Mediated Communication, the students will be able to:

1. Analyse and interpret systems of mediated communication
2. Critically evaluate public opinion surveys and polls
3. Outline and write a reflexive essay on the effects of media on self and the other

4. Analyze and interpret developments in mediated communication using multiple theoretical lenses
5. Identify key factors driving the spread of information and virality

Mapping Course Objectives(CO) and ProgramOutcome (PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Computer Graphics – 2 (Camera and Lighting Techniques) the students will be able to:

1. Skills to do basic lighting
2. Skills to add types of lights & lighting
3. Skills to add interior and exterior lighting
4. Skills to add camera & camera movements
5. Skills to Render with camera movements

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Digital Filmmaking, the students will be able to:

1. Identify business opportunities and platforms for digital platforms
2. Critically appraise the opportunities and economic risks in digital platforms.
3. Develop a business plan and online collaboration workspace for entrepreneurship.
4. Prepare a low-cost budget and revenue model for independent filmmaking

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Design Thinking, the students will be able to:

1. Adopt a problem-solving mindset to reframe design challenges
2. Enumerate and select appropriate design thinking approach for specific design problem
3. Use design thinking tools and methods to solve real-world problems
4. Apply design thinking principles to develop plan of action and wireframe for specific problem domain
5. To create prototypes for specific design problem using available design tools and apps

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Writing for Media, the students will be able to:

1. Understand the basic concepts of writing techniques for media.
2. Learners can become news writers, content writers, and program producers for mass media productions.
3. Learners will be able to write and develop the content for new media.
4. Plans
5. The course provides Learners with an understanding of the importance of writing for the media.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Anchoring and Presentation Skills, the students will be able to:

1. Learners will gain knowledge about the do's and don'ts of the presenter
2. They will present the program artistically.
3. They can present programs and news.
4. They come to know the importance of voice, speech, make-up, etc.
5. They can face the technical aspects such as camera, lighting, sound, etc.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Communication Research Methods, the students will be able to:

1. Outline various steps involved in conducting communication research and identify a researchable topic
2. Diagram a communication problem with a causal model and present operational definitions of key constructs
3. Prepare a coding framework for analysis coverage of major current news events and apply CATA
4. Apply qualitative methods like in-depth interviewing for journalism practices
5. Design questionnaire for audience and audience measurement
6.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course UX and Interactive Media Design, the students will be able to:

1. Skills to do basics of UI/UX design
2. Skills to do Colouring for UI/UX
3. Skills to create buttons & icons
4. Skills to do prototyping
5. Skills to render an output for UI/UX developing

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Video Editing and Visual Effects (VFX), the students will be able to:

1. Skills to do Editing
2. Skills to do Editing and advanced techniques in Editing
3. Skills to remove wire, rigging, tracking methods and clean plate.
4. Skills to do Rotoscopy
5. Skills to do Composting

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Computer Graphics – 3 (Advanced Techniques), the students will be
able to:

1. Skills to do basic Character Modelling
2. Skills to do Rigging and Parenting
3. Skills to do Biped animation
4. Skills to do Keyframe animation
5. Skills to add Dynamics

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Transmedia Storytelling, the students will be able to:

1. Critically evaluate popular, on-going transmedia projects
2. Explain the decision-making process for adopting a transmedia storytelling in marketing or journalism context
3. Prepare a strategic plan and budget for transmedia storytelling for OTT platform on entertainment or strategic communication content
4. Demonstrate an ability to prepare a script and storyboard for transmedia project and a web series for OTT
5. Apply multimedia skills to produce a short project for transmedia distribution.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Advertising Strategies, the students will be able to:

1. Apply creative strategies to develop a brand promotion plan
2. Interpret data and conduct audience analysis for a advertising campaign
3. To produce an original public service advertising for cross platform distribution
4. Design banner advertising for websites and embed them a website or a blog
5. Demonstrate procedural knowledge on online advertising strategies

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Media Entrepreneurship and Innovation, the students will be able to:

1. Identify business opportunities and platforms for media entrepreneurship
2. Critically appraise the opportunities and economic risks in media entrepreneurship
3. Develop a business plan and online collaboration workspace for media start-ups
4. Prepare a detailed proposal and strategic vision for establishing a media start-up.
5. Prepare a low-cost budget and revenue model for a multimedia news package for a freelance assignment

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Immersive Media Design (VR/AR/ Game Design), the students will be able to:

1. Adapt the use of Immersive Technology
2. Applied the technology of Virtual reality
3. Compare the mobile technology usage combined with Augmented reality
4. Evaluate the different immersive Technology of Mixed reality
5. Plan to organize the game design

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Capstone Project and Portfolio OR Dissertation, the students will be able to:

Option 1: Capstone Project and Portfolio:

1. Ability to understand the trends and demands of the media industry
2. Ability to fine tune their media skills and prepare to be industry-ready
3. Ability to generate, analyse content/data from various sources and convertthem to publishable media content
4. Ability to work seamlessly with experienced media professionals meetingthe rigours of the industry.
5. To learn to work independently in assigned projects
6. To produce an independent project as the culmination of their training andknowledge showcasing their specialization and specific interest covering contemporary themes/issues.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

OR

Option2: Dissertation:

1. Perform literature search and scoping study on selected topics
2. Set-up digital workspace for research using applications like Zotero and Qiqqa and Publish or Perish
3. Prepare an annotated bibliography following the APA style guide
4. Read and summarize academic research articles and evaluate quality
5. based on protocols
6. Produce a news story based on academic research following best practices in academic journalism

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Digital Asset Management, the students will be able to:

1. Recognize the Importance of Content Management
2. Acquire knowledge of Digital Assets and their Management
3. Understand the requirements of storage and staffing for a successful DAM
4. Comprehend the workflows and life cycle of the Digital Assets in DAM
5. Appreciate the role of DAMs in Brands and Rights

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Digital Marketing Communication, the students will be able to:

1. Acquire knowledge of Content Marketing and its development
2. Learn the nuances of Content curation
3. Understand the functions of Social Media Marketing
4. Acquire skills in Social Media Marketing Analytics
5. Deepen knowledge of Mobile Media Marketing through social networks

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X

B.COM ACCOUNTING & FINANCE

UNIVERSITY OF MADRAS
B.COM DEGREE COURSE IN (ACCOUNTING &FINANCE)
SYLLABUS WITH EFFECT FROM 2021-2022

PROGRAM OUTCOMES

PO1. To acquire the ability for critical thinking through the development of cognitive and, accounting decision making skills and an attitude of positive and lifelong learning in order to succeed in a dynamic environment.

PO2. To build entrepreneurial skills required for innovation and creation of ideas.

PO3. To develop effective communication skills and contemporary IT knowledge essential for joining the workforce or for further higher education.

PO4. To have a comprehensive understanding of the advanced issues in accounting for assets, liabilities and owner's equity

PO5. To equip with the knowledge of accounting process and preparation of final accounts of sole trader.

PO6. This course emphasizes on managing accountancy and financial part of business.

PROGRAM SPECIFIC OUTCOMES

PSO1. It enables students to understand fundamentals of accounting, taxation, costing, financial management, auditing, management accounting etc.

PSO2. Have exposure to computerized accounting and current trends in accounting and finance.

PSO3. To have exposure to solving real time, practical problems/ cases, which will form part of skill assessment relating to a) Cost Accounting b) Taxation c) BRS d) Rectification of errors e) final accounts of a partnership firm / Company?

PSO4. It motivates students to do research work in the field of finance.

PSO5. It motivates students to pursue higher studies like Chartered Accountancy, Cost Accountancy, MBA in Finance, Company Secretary, M.Com in Accountancy, ACCA (Association of Chartered Certified Accountants) etc.

PSO6. To enable critically evaluate and analyze financial statements.

COURSE OUTCOME:

After completing the course Financial Accounting, the students will be able:

CO1. To enable the students to learn principles and concepts of Accountancy

CO2. Students are enabled with the Knowledge in the practical applications of accounting

CO3. The student will get thorough knowledge on the accounting practice prevailing in partnership firms and other allied aspects

CO4. To find out the technical expertise in maintaining the books of accounts

CO5. To encourage the students about maintaining the books of accounts for further reference.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X			
CO3	X	X				X
CO4	X				X	
CO5	X					

After completing the course Financial Planning & Performance, the students will be able:

CO1. To know the importance of effective financial planning and its impact on profitability.

CO2. To understand Various sources of finance with their utilization, based on the cost of capital.

CO3. To take sound investment decisions based on proper appraisal.

CO4. To understand cost behavior and its effect on financial planning.

CO5. To understand various types of budgets and use the one most suited to the organization.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2						X
CO3		X				
CO4	X				X	
CO5	X	X		X		

After completing the course Business Communication, the students will be able:

CO1. To identify key principles in business communication.

CO2. To identify other common methods of professional communication.

CO3. To find the best media to present the message.

CO4. To identify ways to make information more accessible to your audience.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X		
CO2			X	X		
CO3	X	X			X	
CO4	X			X		X

After completing the course Advanced Financial Accounting, the students will be able:

CO1.To articulate measurement issues related to the covered topics; and locate and implement

CO2.To apply IFRS in the preparation of general purpose financial statements.

CO3. To explain in details relating to general purpose financial statements.

CO4. Toprepare general purpose financial statements for designated entities, including the exercise of professional judgment.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X				
CO2				X	X	
CO3	X	X				
CO4	X			X		

After completing Principles of Management, the students will be able:

CO1. To apply the concepts & principles of management in real life industry.
CO2. To design & develop organization chart & structure for an enterprise.
CO3. To apply the concepts of HRM in Recruitment, Selection, Training & Development .
CO4. To observe and evaluate the influence of historical forces on the current practice of management.
CO5. To explain how organizations adapt to an uncertain environment and identify techniques managers use to influence.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2				X		
CO3	X	X				
CO4				X		X
CO5	X	X		X		

After completing the course, Financial Analytics and Control the students will be able:
CO1. To understand various Financial Analytics Pricing Models
CO2. To Get acquainted with Financial Securities Analytics
CO3. To know Financial Risk Analytics using Time Series Forecasting
CO4. To develop an understanding of descriptive and predictive analytics
CO5. To apply data-driven, machine learning approaches for business decisions

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					

CO2			X	X		
CO3	X	X				
CO4				X		X
CO5	X	X		X		

After completing the course Corporate Accounting, the students will be able:

CO1. To enabling the students to understand the features of Shares and Debentures.

CO2. To develop an understanding about redemption of Shares and Debenture and its types.

CO3. To give an exposure to the company final accounts.

CO4. To provide knowledge on Goodwill.

CO5. To get a knowledge about the Alteration of Share capital and Reduction of share Capital.

.**CO-PO MAPPING**

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X				X	
CO2	X			X		
CO3		X				
CO4	X				X	
CO5		X		X		X

After completing the course Financial Reporting, the students will be able:

CO1. To enable to identify and evaluate financial statements.

CO2.To describe how the rules of corporate financial reporting effect the application of standards.

CO3. To identify assumptions, evaluate statements in terms of evidence, to detect false logic or reasoning, to identify implicit values, and to enable the reporting.

CO4. To have the ability to interpret information based on scientific analysis.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3		X				
CO4					X	

After completing the course Banking Theory Law and Practice, the students will be able:

CO1. To disseminate knowledge among the students with theoretical structures about banking and insurance.

CO2. To train and equip the students with the skills of modern banking and insurance is run.
CO3. Students will be taken for trainings to banks and insurance companies.
CO4. To develop and inculcate the traits of professionalism amongst the students.
CO5. To get professional attire, professional communication skills and professional discipline will be inculcated

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3		X				
CO4						X
CO5	X			X		

After completing the course Rural Economics, the students will be able:

CO1. To understand the basic concept of rural/urban, its interlinkages and the basicconcept of economics.
CO2. To familiarize the rural economy structures and present their country-specific structure in the discussion.
CO3. .To acquaint the students on the economic theories and try to contextualize in rural context.
CO4..To understand interconnections between rural economy and farming, types of rural industries and interconnections with industrialization.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3		X				
CO4						X

After completing the course Advanced Corporate Accounting, the students will be able:

CO1. To familiarize the concept of price level changes, social responsibility accounting and human resources accounting
CO2. Enable the students to understand about amalgamation, absorption and external Reconstruction
CO3. To make them aware about accounting procedures of banking companies and Insurance Companies
CO4. Enable the students to gain an idea of liquidation of companies
CO5. To introduce and develop knowledge of Holding Companies and Subsidiary Companies accounts

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					X
CO2			X	X		
CO3	X	X			X	
CO4	X					X
CO5	X	X			X	

After completing the course Corporate & Business Law, the students will be able:

CO1. To demonstrate an understanding of the Legal Environment of Business.

CO2. To apply basic legal knowledge to business transactions.

CO3. To communicate effectively using standard business and legal terminology.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3	X	X				X

After completing the course Working Capital Management, the students will be able:

CO1. To evaluate comparative working capital management Policy

CO2. To get knowledge of balancing firms' profitability, liquidity, and risk and operating flexibility

CO3. To investigate cash flow cycles & working capital cycles.

CO4. To formulate the optimum inventory and receivables management plan.

CO5. To know the impact of working capital policy on firm's operations, etc.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3		X			X	
CO4	X					
CO5		X		X		X

After completing the course International Economics, the students will be able:

CO1. To understand the major models of international trade and compare and contrast them.

CO2. To understand the principle of comparative advantage, including its formal expression.

CO3.To analyze the linkages between trade, labor and capital movements, international fragmentation of production, economic well-being and the income distribution and to identify and critically examine policy implications of these linkages.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3		X			X	

After completing the course Elements of Cost Accounting, the students will be able:

CO1. To understand the several cost concepts involved in business

CO2. To recognize the importance of material issues and its pricing

CO3. To apply the methods implicated in cost for a better industrial performance

CO4. To construct the impact of the select cost method

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					X
CO2			X	X		
CO3		X				
CO4						X

After completing the course Practical Auditing, the students will be able:

CO1. To critically evaluate the role and responsibilities of the external auditor, the audit process and the evidential base for making audit judgments, including broader assurance assignments such as environmental audits.

CO2. To appraise the legislative and professional provisions (auditing standards and ethical guidelines) that constitute the regulatory framework for the conduct of external auditing.

CO3. To formulate how the auditor obtains an understanding of the entity and its environment, when planning and assessing the risk of the audit.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		X
CO3		X				

After completing the course Portfolio Management, the students will be able:

CO1. To analyze and evaluate financial markets, how securities are traded, mutual funds, investment companies, and investor behavior.

CO2. To construct optimal portfolios and illustrate the theory and empirical applications of asset pricing models.

CO3. To analyze bond prices and yields and fixed-income portfolios.

CO4. To characterize the implications of the market efficiency evidence on active portfolio management.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3		X				
CO4						X

After completing the course Advanced Cost Accounting, the students will be able:

CO1. To know about the preparation of Cost sheet of business concerns.

CO2. To get the knowledge about the preparation of cost control.

CO3. To understand the methods of payment in wages.

CO4. To extend the knowledge through the preparation of overheads and machine hour rates.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3		X				X
CO4					X	

After completing the course Management Accounting, the students will be able:

CO1. To understand the basic concepts and processes used to determine product costs,

CO2. To be able to interpret cost accounting statements,

CO3. To be able to analyze and evaluate information for cost ascertainment, planning, control and decision making

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3	X	X				X

After completing the course Income Tax Law & Practice - II, the students will be able:

CO1. To provide an understanding of the taxation of business activity.

CO2. To illustrate the ways in which these principles are currently applied in key jurisdictions.

CO3. To understand the current application of general taxation principles.

CO4. To get knowledge of the potential impacts of taxation on the decision making.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3		X				X

CO4				X		

After completing the course Capital Markets, the students will be able:

CO1. Students will be able to explain the concepts of capital market.

CO2. To solve the problems arisen in capital market.

CO3. To analyze the process related capital market.

CO4. To prepare the evaluation rapport on capital markets.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					X
CO2			X	X		
CO3		X				
CO4					X	

After completing the course Financial Services, the students will be able:

CO1. To give an idea about fundamentals of financial services and players in financial sectors

CO2. To create an awareness about merchant banking, issue management, capital markets and
role of SEBI

CO3. To understand the concept of leasing, hire purchase and factor

CO4. To provide knowledge about leasing and hire purchase concepts

CO5. To make them understand about different types of mutual funds and the institution involved

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2			X	X		
CO3	X	X			X	X
CO4				X		
CO5					X	

BBA DEGREE COURSE IN BUSINESS ADIMINISTRATION

UNIVERSITY OF MADRAS
BBA DEGREE COURSE IN BUSINESS ADIMINISTRATION
SYLLABUS WITH EFFECT FROM 2020-2021
DEPARTMENT OF MANAGEMENT

Programme Name: BBA

PO1. Graduates will be business leaders and managers with leadership and problem-solving skills for global business.

PO2. Provides a wide knowledge of all disciplines of the course and training in management of both animate and inanimate entities and develops leadership skills.

PO3. Graduates will drive entrepreneurship initiatives either on their own or within other organizations where they are employed.

PO4. Makes students capable of recognizing and resolving ethical issues

PO5. Graduates will have innovation skills and drive the businesses through multifaceted skills.

Programme Specific Outcome (PSO)

PSO1. Understanding and operating with ethical and professional responsibility

PSO2. Ability to communicate effectively and function efficiently on multidisciplinary teams.

PSO3. Ability to use modern management principles and tools needed in contemporary business within the bounds of practical Constraints such as economic, environmental, social, Political, ethical, health and safety and sustainability.

PSO4. Innovate and Develop skills to be a life-long learner for a globalized business for future.

PSO5. Providing an opportunity for the students to gain practical exposure towards the workplace and make them industry ready.

COURSE OUTCOME:

After completing the course PRINCIPLES OF MANAGEMENT, the students will be able:

CO1. Able to apply the concepts & principles of management in real life industry.

CO2. Able to design & develop organization chart & structure for an enterprise.

CO3. Able to apply the concepts of HRM in Recruitment, Selection, Training & Development.

CO4. Observe and evaluate the influence of historical forces on the current practice of management.

CO5. Explain how organizations adapt to an uncertain environment and identify techniques managers use to influence

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	

After completing the course MANAGERIAL ECONOMICS, the students will be able:

CO1. Students will be skilled in critical thinking and decision-making, supported by economic principles and best practices in business.

CO2. Students will have the ability to use data to inform economic and business decision making.

CO3. Students will be able to put together quantitative reports as well as to evaluate reports put together by others.

CO4. Students will be effective communicators, confidently using appropriate terminology in oral and written form.

CO5. Students will be able to comprehend economics-related writing.

CO6. Students will be able to work effectively in teams and to address strategic and organizational challenges.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	
CO6	X			X	X

After completing the course FINANCIAL ACCOUNTING, the students will be able:

CO1. To enable the students to learn principles and concepts of Accountancy

CO2. Students are enabled with the Knowledge in the practical applications of accounting

CO3. The student will get thorough knowledge on the accounting practice prevailing in partnership firms and other allied aspects

CO4. To find out the technical expertise in maintaining the books of accounts

CO5. To encourage the students about maintaining the books of accounts for further reference.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	

After completing the course BUSINESS COMMUNICATION, the students will be able:

CO1. To Identify key principles in business communication

CO2. Identify other common methods of professional communication

CO3. To Find the best media to present the message

CO4. Identify ways to make information more accessible to your audience.

CO5. Explain how organizations adapt to an uncertain environment and identify techniques managers use to influence

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	

After completing the course MANAGEMENT ACCOUNTING, the students will be able:

CO1. To understand the basic concepts and processes used to determine product costs,

CO2. To be able to interpret cost accounting statements,

CO3. To be able to analyze and evaluate information for cost ascertainment, planning, control and decision making

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X

After completing the course INTERNATIONAL TRADE, the students will be able:

CO1. Understand, at the level of formal analysis, the major models of international trade and be able to distinguish between them in terms of their assumptions and economic implications

CO2. Understand the principle of comparative advantage and its formal expression and interpretation within different theoretical models

CO3. Be familiar with, and be able to critically analyse the main arguments for protection and conversely be able to critically evaluate the relevance and realism of arguments for free trade, taking into account the costs and benefits of trade policy measures on different sections of the community and the implications for the formulation of trade policy

CO4. Be familiar with the major recent developments in the world trading system, and be able to critically analyse key issues raised both by the current round of WTO negotiations and by the spread of regional trading arrangements

CO5. Develop communications skills through the presentation of your work, interactions during tutorial sessions, and appropriate use of the discussion

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	

After completing the course FINANCIAL MANAGEMENT, the students will be able

CO1. Understanding basics of Financial Management.

CO2. Enabling students to understand the concepts of the Investment, Financing and Working Capital.

CO3. Students get knowledge about effective finance management.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X

After completing the course ORGANIZATIONAL BEHAVIOUR, the students will be able

CO1. Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.

CO2. Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.

CO3. Analyze the complexities associated with management of the group behavior in the organization.

CO4. Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behavior of people in the organization.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X

After completing the course MARKETING MANAGEMENT, the students will be able

CO1. To extend the knowledge about the role and importance of marketing

CO2. To get the knowledge about the marketing environment

CO3. To understand the marketing segmentation and consumer behaviour

CO4. To extend the knowledge of pricing policies and marketing mix

CO5. To enable the students to understand about the personal selling & sales promotions
CO.6. Use the technology in marketing like MIS.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	
CO6	X			X	

After completing the course BUSINESS STATISTICS, the students will be able

CO1: Know the most widely used probability distributions and recognize them in applications.
CO2: Know the main tools to describe the index numbers, such as the price and cost of living,
CO3: Recognize the importance of the analyzing time series and understand when it is appropriate to use normal approximations for the distribution of a statistic.
CO4: Be able to derive Sampling procedures and estimators.
CO5: Be able to construct exact and approximate confidence intervals.
CO6: Possess techniques of Hypothesis testing
CO7: Learn to develop complex mathematical reasoning.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	
CO6	X			X	X
CO7	X	X		X	

After completing the course HUMAN RESOURCE MANAGEMENT, the students will be able

CO1. To get the knowledge about the Personnel management
CO2. To extend the knowledge about the placement and induction
CO3. To understand the training methods and training needs
CO4. To developing the knowledge of remuneration and incentives of personnel
CO5. To enable the students to understand about the environment of HRM
CO6. To know about the human resource audit

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	
CO6	X			X	X

After completing the course BUSINESS REGULATORY FRAME WORK, the students will be able

CO1. Students would recall various definitions and would be able to evaluate the provisions of Law of Contract,1872.

CO2. Students would be able to examine various provisions of Sale of Goods Act, which includes formation, conditions and warranties in sale.

CO3. Students would be able to compare and contrast different types of negotiable instruments and its applicability in the money market.

CO4.Students would be able to relate and apply various provisions related to Consumer Protection Act. They would be aware of the rights of consumer and various consumer forums.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X

After completing the course FINANCIAL SERVICES, the students will be able

CO1. To give an idea about fundamentals of financial services and players in financial sectors

CO2. To create an awareness about merchant banking, issue management, capital markets and role of SEBI

CO3. To understand the concept of leasing, hire purchase and factor

CO4. To provide knowledge about leasing and hire purchase concepts

CO5. To make them understand about different types of mutual funds and the institution involved

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	

After completing the course ELEMENTS OF OPERATIONS RESEARCH, the students will be able

CO1: Know the meaning of Operations Research, Scope and Characteristics, and to know by Graphical method,Simplex method.

CO2: Find the basic feasible solution by Transportation problem, Asssignment models.

CO3: Reach the time, time calculationv and its applications

CO4: Find the Arriving rate and Service rateby using Queueing Models.

CO5: Learn to develop the Probability using m, Decision theory, Game theory.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	

After completing the course ADVERTAISING MANAGEMENT AND SALES PROMOTION, the students will be able

CO1. Students able to Categorize business activities, such as production, management, and finance, and describe how these activities relate to marketing. •

CO2. Describe the history of the advertising industry and its relation to today's marketplace.

CO3. Explain the impact of multiculturalism and multi-generationalism on advertising marketing activities.

CO4. Identify the importance of understanding cultural diversity from a marketing perspective.

CO5. Identify the expected wages and salaries for jobs in the advertising and marketing industry

CO6. Identify sources of financial assistance for raising capital.

CO7. Identify the role of professional organizations, trade associations, and labor unions in the advertising industry.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X
CO5	X	X		X	
CO6	X			X	X
CO7	X	X		X	

After completing the course RESEARCH MEDHODOLOGY, the students will be able

CO1. Identify and discuss the role and importance of research in the social sciences.

CO2. Identify and discuss the issues and concepts salient to the research process.

CO3.Identify and discuss the complex issues inherent in selecting a research problem, selecting an appropriate research design, and implementing a research project.

CO4. Identify and discuss the concepts and procedures of sampling, data collection, analysis and reporting.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X

After completing the course MATERIALS MANAGEMENT, the students will be able

CO1. Analyze and evaluate various facility alternatives and their capacity decisions, develop a balanced line of production & scheduling and sequencing techniques in operation environments

CO2. Develop aggregate capacity plans and MPS in operation environments.

CO3. Plan and implement suitable materials handling principles and practices in the operations

CO4. Plan and implement suitable quality control measures in Quality Circles to TQM

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X

After completing the course ENTERPRENEURIAL DEVELOPMENT, the students will be able

CO1. Understanding the concept of Entrepreneurship and the effectiveness of manpower in Entrepreneurship.

CO2. To provide students to knowledge about the preparation of project Report.

CO3. Knowledge on Entrepreneurial Development Programmes and Agencies.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X

After completing the course OPERATIONAL MANAGEMENT, the students will be able

CO1. Identify and Analyze ERP,MRP & Service operation management.

CO2. Formulate and implement Warehouse Best Practices and Strategies

CO3. Plan Warehouse and Logistics operations for optimum utilization of resources

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X

After completing the course BUSINESS ENVIRONMENT, the students will be able

CO1. Knowledge on Business Environment.

CO2. Identifying and understanding the factors influencing the changes in the Business Climate.

CO3. To make student learn about the various environment in particular influencing business.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X

After completing the course SERVICE MARKETING, the students will be able

CO1. Students will Appreciate the challenges facing the services marketing in traditional commercial marketing, e-marketing and non commercial environments.

CO2. Students will Appreciate the difference between marketing physical products and intangible services, including dealing with the extended services marketing mix, and the four unique traits of services marketing;

CO3. Recognise the challenges faced in services delivery as outlined in the services gap model; Develop professional business writing skills

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X

After completing the course BUSINESS TAXATION, the students will be able

CO1. Students gain knowledge on the Principles of the Indirect Tax.
CO2. Exposure on the Tax system in India
CO3. Understanding of Customs Duty, Excise Duty, CST, VAT, Service tax etc.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X

After completing the course CUSTOMER RELATIONSHIP MANAGEMENT, the students will be able

CO1. Benefits of CRM to companies and consumers
CO2. How to implement CRM best practices
CO3. The importance of bonding and building loyalty with customers
CO4. How to build long term customer relationships
CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X			X	X

B. COM (COMPUTER APPLICATION) DEGREE

UNIVERSITY OF MADRAS
B. Com (Computer Application) DEGREE
SYLLABUS WITH EFFECT FROM 2020-2021

PROGRAM OUTCOMES

PO1. Acquire the ability to apply the basic tenets of logic and science to thoughts, actions and interventions.

PO2. Learn to participate in nation building by adhering to the principles of sovereignty of the nation, socialism, secularism, democracy and the values that guide a republic

PO3. Develop and practice gender sensitive attitudes, environmental awareness, empathetic social awareness about various kinds of marginalization and the ability to understand and resist various kinds of discriminations

PO4. Understand the issues of environmental contexts and sustainable development as a basic interdisciplinary concern of all disciplines.

PO5. Develop aesthetic, social, humanistic and artistic sensibilities for problem solving and evolving a comprehensive perspective

PO6. Acquire the ability to engage in independent and lifelong learning in broad context of socio-technological changes.

PO7. Understand and recognized value system, moral dimensions and self-responsibility for nation and society. Demonstrate personal and intellectual integrity and academic accountability. Collaborate respectfully with others, individually and in teams.

PROGRAM SPECIFIC OUTCOMES

PSO1. Understand the concepts and techniques of commerce and its application in business environment.

PS02. Conceive the ideas on entrepreneurship and develop the skills for setting up and management of business organizations.

PS03. Develop the skills and abilities to become competent and competitive in the business world.

PS04. Develop the competency to take wise decisions at personal and professional level.

PS05. Appraise the impact of other disciplines on the working of business.

PS06. To make the students capable of managing the office activities with the help of information technology

COURSE OUTCOME:

After completing the course FINANCIAL ACCOUNTING, the students will be able:

CO1. To enable the students to learn principles and concepts of Accountancy

CO2. Students are enabled with the Knowledge in the practical applications of accounting

CO3. The student will get thorough knowledge on the accounting practice prevailing in partnership firms and other allied aspects

CO4. To find out the technical expertise in maintaining the books of accounts

CO5. To encourage the students about maintaining the books of accounts for further reference.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						X
CO2			X	X	X	X	
CO3	X	X			X		
CO4	X			X	X		X
CO5	X	X		X		X	

After completing the course Office Automation, the students will be able:

CO1. Understand the basics of computer system and its components.

CO2. Understand and apply the basic concepts of a word processing package.

CO3. Understand and apply the basic concepts of electronic spreadsheet software.

CO4. Understand and apply the basic concepts of database management system.

CO5. Understand and create a presentation using power point tool.

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X			X			X
CO2			X		X	X	
CO3	X	X				X	
CO4				X	X		X
CO5		X	X			X	X

After completing the course Business Economics, the students will be able:

CO1. Students will be able to understand and identify the economic variables in general business atmosphere.

CO2. Students will perceive the knowledge about Economics at Micro level and various economic concepts such as Opportunity cost, Marginal Concepts, Demand Function and Law

of Variable Proportion
CO3. Learners will comprehend the relationship between various policies of business.
CO4. Student will accomplish the identical Short Run and Long Run Equilibrium of a firm and industry and also about different market structure and various pricing techniques

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		X		X		X	
CO2	X		X		X		
CO3		X		X	X	X	X
CO4	X		X		X		X

After completing the course Advanced Financial Accounting, the students will be able:

CO1. Articulate measurement issues related to the covered topics; and locate and implement the disclosure requirements related to the covered topics
CO2. Apply IFRSs in the preparation of general purpose financial statements
CO3. Explain details relating to general purpose financial statements
CO4. Prepare general purpose financial statements for designated entities, including the exercise of professional judgment

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X		X			X	X
CO2				X	X		X
CO3	X				X	X	
CO4		X	X		X	X	X

After completing Indian Economy, the students will be able:

CO1. Student able to understand the links between household behavior and the economic models of demand.
CO2. Student able to understand govt policies and programs
CO3. Students understand the behaviour of individuals and small organizations in making decisions on the allocation of limited resources.
CO4. Students able to understand how planning and infrastructure support can develop an economy.
CO5. Student understand the economic, operational and financial framework with particular application to the transaction of insurance business.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X			X		X	X
CO2		X			X		
CO3	X		X			X	X
CO4	X		X		X		X
CO5		X		X		X	

After completing the course Corporate Accounting, the students will be able:
CO1. Enabling the students to understand the features of Shares and Debentures.
CO2. Develop an understanding about redemption of Shares and Debenture and its types.
CO3. To give an exposure to the company final accounts.
CO4. To provide knowledge on Goodwill.
CO5. To get a knowledge about the Alteration of Share capital and Reduction of share Capital.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X	X	X			X	
CO2			X	X			X
CO3	X			X		X	
CO4		X			X		X
CO5	X		X			X	

After completing the course Business Law, the students will be able:
CO1. Introduce students to the study of law and how it governs conduct in business
CO2. Recognize legal and ethical issues when making business decisions.

CO3. Identify the nature and classification of contracts
CO4. Identify general principles of illegality, agreements related to public welfare, and the regulation of business
CO5. Identify contracts that must be in writing, effects of non-compliance, and the construction and interpretation of contracts
CO6. Identify contracts that must be in writing, effects of non-compliance, and the construction and interpretation of contracts

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X			X			X
CO2	X				X	X	
CO3		X	X			X	
CO4	X		X	X			X
CO5		X		X		X	
CO6	X		X		X	X	X

After completing the course, Computerized Accounting, the students will be able:

CO1. Describe the differences and similarities between manual and Computerized Accounting
CO2. Identify the system default accounts for vendors and update the Vendor Center
CO3. Identify the system default accounts for customers and update the Customer Center
Identify the two inventory systems and Update the Item List
CO4. Create a new company file using the Easy Step Interview and establish preferences using the QuickBooks Detailed Start method and Easy Step Interview window
CO5. Create a new company file using QuickBooks Express Start Window. Setting up company password
CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO1		X				X	
CO2			X		X		X
CO3	X			X		X	X
CO4		X			X	X	
CO5	X		X		X	X	X

After completing the course Business Statistics, the students will be able:

CO1: Know the most widely used probability distributions and recognize them in applications.

CO2: Know the main tools to describe the index numbers, such as the price and cost of living,

CO3: Recognize the importance of the analyzing time series and understand when it is appropriate to use normal approximations for the distribution of a statistic.

CO4: Be able to derive Sampling procedures and estimators.

CO5: Be able to construct exact and approximate confidence intervals.

CO6: Possess techniques of Hypothesis testing

CO7: Learn to develop complex mathematical reasoning.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		X	X			X	
CO2	X			X			X
CO3	X		X		X	X	X
CO4		X		X			
CO5	X		X			X	
CO6		X		X	X		X
CO7	X		X				X

After completing the course Advanced Corporate Accounting, the students will be able:

CO1. To familiarize the concept of price level changes, social responsibility accounting and human resources accounting

CO2. Enable the students to understand about amalgamation, absorption and external

Reconstruction

CO3. To make them aware about accounting procedures of banking companies and Insurance Companies

CO4. Enable the students to gain an idea of liquidation of companies

CO5. To introduce and develop knowledge of Holding Companies and Subsidiary Companies accounts

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		X	X			X	
CO2			X		X		X
CO3	X			X		X	
CO4				X			
CO5	X	X			X	X	X

After completing the course Principles of Management, the students will be able:

CO1. Able to apply the concepts & principles of management in real life industry.

CO2. Able to design & develop organization chart & structure for an enterprise.

CO3. Able to apply the concepts of HRM in Recruitment, Selection, Training & Development.

CO4. Observe and evaluate the influence of historical forces on the current practice of management.

CO5. Explain how organizations adapt to an uncertain environment and identify techniques managers use to influence

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		X		X		X	
CO2	X				X		X
CO3	X		X			X	
CO4			X				X
CO5	X		X	X		X	X

After completing the course E-Commerce, the students will be able:

CO1. Analyze the impact of E-commerce on business models and strategy.

CO2. Describe the major types of E-commerce.

CO3. Explain the process that should be followed in building an E-commerce presence.

CO4. Identify the key security threats in the E-commerce environment.
CO5. Describe how procurement and supply chains relate to B2B E-commerce.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		X			X		X
CO2			X		X	X	
CO3	X			X	X		X
CO4	X		X			X	X
CO5		X		X		X	X

After completing the course Financial Management, the students will be able:
CO1. Understanding the basics of Financial Management.
CO2. Enabling students to understand the concepts of the Investment, Financing and Working Capital.
CO3. Students get knowledge about effective finance management.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X	X				X	X
CO2			X		X		
CO3		X				X	X
CO4		X			X		X
CO5	X		X	X		X	

After completing the course Elements of Cost Accounting, the students will be able:
CO1. Understand the several cost concepts involved in business
CO2. Recognize the importance of material issues and its pricing
CO3. Apply the methods implicated in cost for a better industrial performance
CO4. Construe the impact of the select cost method

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X	X			X		X
CO2			X	X		X	

CO3	X		X				X
CO4		X			X	X	

After completing the course Practical Auditing, the students will be able:

CO1. Critically evaluate the role and responsibilities of the external auditor, the audit process and the evidential base for making audit judgments, including broader assurance assignments such as environmental audits.

CO2. Appraise the legislative and professional provisions (auditing standards and ethical guidelines) that constitute the regulatory framework for the conduct of external auditing.

CO3. Formulate how the auditor obtains an understanding of the entity and its environment, when planning and assessing the risk of the audit.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X			X			X
CO2			X		X		
CO3	X	X				X	

After completing the course Income Tax Law & Practice - I, the students will be able:

CO1. Provide an understanding of the taxation of business activity

CO2. Illustrate the ways in which these principles are currently applied in key jurisdictions

CO3. Understand the current application of general taxation principles

CO4. Be aware of the potential impacts of taxation on the decision making

CO5. Extend their knowledge from other business subjects by adding the dimension of taxation in greater detail.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X			X			X
CO2			X		X		
CO3	X	X				X	X

After completing the course Income Tax Law & Practice - I, the students will be able:

CO1. Analyze and evaluate financial markets, how securities are traded, mutual funds, investment companies, and investor behavior.

CO2. Construct optimal portfolios and illustrate the theory and empirical applications of asset pricing models.

CO3. Analyze bond prices and yields and fixed-income portfolios.

CO4. Characterize the implications of the market efficiency evidence on active portfolio management.

CO – MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X			X			X
CO2			X		X		
CO3	X	X				X	X
CO4	X			X		X	

After completing the course Research Methodology, the students will be able:

CO1. Identify and discuss the role and importance of research in the social sciences.

CO2. Identify and discuss the issues and concepts salient to the research process.

CO3. Identify and discuss the complex issues inherent in selecting a research problem, selecting an appropriate research design, and implementing a research project.

CO4. Identify and discuss the concepts and procedures of sampling, data collection, analysis and reporting.

CO – MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		X		X			X
CO2	X				X		
CO3	X		X			X	X
CO4		X		X			X

After completing the course Financial Services, the students will be able:

CO1. To give an idea about fundamentals of financial services and players in financial sectors

CO2. To create awareness about merchant banking, issue management, capital markets and role of SEBI

CO3. To understand the concept of leasing, hire purchase and factor

CO4. To provide knowledge about leasing and hire purchase concepts

CO5. To make them understand about different types of mutual funds and the institution involved

CO – MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		X		X			X
CO2	X		X		X		
CO3	X		X			X	X
CO4		X		X			X
CO5	X		X			X	

After completing the course Management Accounting, the students will be able:

CO1. To understand the basic concepts and processes used to get practical skills in solving management problems.

CO2. To be able to interpret cost accounting statements.

CO3. To be able to analyze and evaluate information for cost ascertainment, planning, control and decision making.

CO – MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		X		X			X
CO2	X		X		X		
CO3	X		X			X	X
CO4		X		X			X
CO5	X		X			X	

After completing the course Income Tax Law & Practice - II, the students will be able:

CO1. Provide an understanding of the taxation of business activity.

CO2. Illustrate the ways in which these principles are currently applied in key jurisdictions.

CO3. Understand the current application of general taxation principles.

CO4. Be aware of the potential impacts of taxation on the decision making.

CO – MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO1		X		X			X
CO2	X		X		X		
CO3	X		X			X	X
CO4		X		X			X

After completing the course Human Resource Management, the students will be able:

CO1. To get the knowledge about the Personnel management

CO2. To extend the knowledge about the placement and induction

CO3. To understand the training methods and training needs

CO4. To developing the knowledge of remuneration and incentives of personnel

CO5. To enable the students to understand about the environment of HRM

CO6. To know about the human resource audit

CO – MAPPING

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
CO1		X		X			X
CO2	X		X		X		
CO3	X		X			X	X
CO4		X		X			X
CO5	X				X		X
CO6		X			X		X

B.COM DEGREE -GENERAL

Hindustan College of Arts & Science
INTERNAL QUALITY ASSURANCE CELL

PROGRAM OUTCOME, PROGRAM SPECIFIC OUTCOME & COURSE OUTCOME
(UNDERGRADUATE COURSES)

Program Name: Bachelor of Commerce (General)

PROGRAM OUTCOME

PO1: Soundness in basic concepts: After completing three years programme in Bachelors in Commerce (General), students would be able to **generalise** the basics and fundamental concepts in the field of Commerce, Finance & Economics.

PO2: Critical Thinking: The students will **acquire** analytical and problem-solving skills in various disciplines of management, business, accounting, tax, finance, and law.

PO3: Effective Communication: To **develop** the students communication skills in accordance with the recent developments in accounting professional and Information technology. And further to **prepare** them to face the communication challenges of industry by teaching them writing effective reports, making effective presentations, and clear exchange of information.

PO4: Accounting Application: To make the students to **apply** the knowledge of accounting fundamentals, and techniques to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional accounting practice.

PO5: Business Ethics: The students are made to **understand** and **apply** ethical principles and commit to professional ethics and responsibilities and norms of the accounting practices.

PO6: Knowledge for Employability: The students will be **equipped** for employment in functional areas like accounting, taxation, banking, insurance, and corporate law and **developing** attitude to work effectively and efficiently in a complex business environment. Learners will gain knowledge of various disciplines of commerce, business, accounting, economics, and finance, auditing, and marketing.

PO7: Industrial Exposure: The students will **acquire** hands on experience in various aspects, administration abilities, managerial and leadership skills through internships and projects to cope up with the contemporary, national, and global level curricular and co-curricular aspects.

PROGRAM SPECIFIC OUTCOME

PSO1: Students will get exposure on relevant quantitative and qualitative Financial Accounting skills and applications to their future careers in business.

PSO2: Students will learn the various concepts and applicability of Managerial accounting to practically implement into their future careers in business.

PSO3: Students will gain thorough knowledge on systematic and subject skills in various disciplines of Commerce, Business, Accounting, Economics, Finance, Auditing and Marketing.

PSO4: Perform procedures of ethical business as per the Industrial Rules and Regulation &

Environmental Policy.

PSO5: Learners will be able to identify the features and Roles of Businessmen, Entrepreneur, Managers, Consultant, which will help learners to possess knowledge and effective communication skills and to react aptly when confronted with critical decision making.

PSO6: Learners will be able to prove proficiency with the ability to engage in Professional & Competitive Examinations like CA, CS, ICWA and other courses.

PSO7: Learners will acquire the skills like effective communication, decision making, problem solving in day-to-day business affairs.

PSO8: Learners will involve in various co-curricular activities to demonstrate relevancy of foundational and theoretical knowledge of their academic major and to gain practical exposure.

PSO9: Students will demonstrate progressive affective domain development of values, the role of accounting in society and business.

PSO10: Learners can also acquire practical skills to work as Tax Consultant, Audit Assistant and other Financial Supporting Services.

PSO11: Learners will be able to do higher education and advance research in the field of commerce and finance.

COURSE OUTCOME – SEMESTER I

FINANCIAL ACCOUNTING: After completing the course **FINANCIAL ACCOUNTING**, the students will be able:

CO1: To know about the principles of accounting in general.

CO2: To understand the system of preparing financial statements for various types of organization.

CO3: To familiarize with knowledge about financial reporting standards.

CO4: To learn the various methods of maintaining the accounting records.

CO5: To understand the system of keeping financial accounting records in different types pf organizations.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X			X	X		
CO3	X			X	X		
CO4				X			X
CO5				X			X

BUSINESS COMMUNICATION: After completing the course **BUSINESS**

COMMUNICATION, the students will be able:

CO1: To get an exposure regarding the concept of communication.

CO2: To differentiate amongst various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organization.

CO3: To apply basic techniques of writing modern forms of communication letters and reports related to business

CO4: To draft effective business correspondence with brevity and clarity.

CO5: To stimulate their critical thinking by designing and developing clean and articulate writing skills.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X	X	X				
CO2		X	X				
CO3			X			X	
CO4			X				
CO5		X					X

BUSINESS ECONOMICS: After completing the course **BUSINESS ECONOMICS**, the students will be able:

CO1: To understand the nature and scope of Business Economics and will be able to identify the economic variables in general business atmosphere.

CO2: To perceive the knowledge about Economics at Micro level and various economic concepts such as Opportunity cost, Marginal Concepts, Demand and Supply function, Consumption and Production Laws.

CO3: To learn attainment of Short Run and Long Run Equilibrium of a firm and industry and under different market structure and various pricing techniques.

CO4: To know the application of economic analysis and theories into the business decision making.

CO5: To outline the economic principles and best practices in business.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO1		X			X		
CO2	X						
CO3		X					X
CO4		X				X	
CO5						X	

COURSE OUTCOME – SEMESTER II

ADVANCED FINANCIAL ACCOUNTING: After completing the course **ADVANCED FINANCIAL ACCOUNTING**, the students will be able:

CO1: To learn to summarize, analyse and report the financial transactions pertaining to a business.

CO2: To learn about maintaining of accounts for Partnership, Branches, and Departments.

CO3: To involve them in preparation of financial statements available for public consumption such as Stockholders, suppliers, banks, employees, government agencies, business owners, and other people who are interested in receiving such information for decision making purposes.

CO4: To apply the International Financial Reporting Standards in intermediate as well as more advanced situations.

CO5: To use accounting principles and theory in order to evaluate and criticize accounting standards

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X			X			
CO3		X		X	X		X
CO4				X	X		X
CO5				X			X

PRINCIPLES OF MANAGEMENT: After completing the course **PRINCIPLES OF MANAGEMENT**, the students will be able:

CO1: To understand the concepts of basic concepts of management.

CO2: To get knowledge about the significance of the management in business.

CO3: To understand the management principles providing guidelines as to how tasks are to be completed for increased efficiency.

CO4: To learn about the application of management skills to ensure effective utilization of available resources.

CO5: To examine the managerial functions and its impact on the organizational effectiveness,

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X				X		
CO3	X						X
CO4							X
CO5					X		X

INDIAN ECONOMY:

After completing the course **INDIAN ECONOMY**, the students will be able:

CO1: To acquire knowledge on the basic characteristics of Indian economy, its potential on natural resources.

CO2: To understand the importance, causes and impact of population growth on economic development.

CO3: To comprehend knowledge on the importance of planning undertaken by the government of India, have knowledge on the various objectives, failures, and achievements as the foundation of the ongoing planning and economic reforms taken by the government.

CO4: To understand the working of Primary, Secondary and Tertiary sectors towards contribution of economic growth and development.

CO5: To analyse the various economic and social issues of Indian Economy.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X						
CO3	X						
CO4	X						X
CO5					X		X

COURSE OUTCOME – SEMESTER III

CORPORATE ACCOUNTING: After completing the course **CORPORATE ACCOUNTING**, the students will be able:

CO1: To familiarize with the concepts of issue of shares and underwriting.

CO2: To understand the provisions of issue of debenture and Profits prior to incorporation.

CO3: To construct the computation of Goodwill and shares.

CO4: To assess the preparation of Final accounts of companies.

CO5: To develop skills in accounting standards.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X			X			
CO2	X			X			X
CO3				X			X
CO4				X			X
CO5	X			X			X

BUSINESS LAWS: After completing the course **BUSINESS LAWS**, the students will be able:

CO1: To know about the basic provisions of law governing the General Contract and Special Contract.

CO2: To learn about the essential elements and rules of valid contract.

CO3: To understand about the legal remedies available in the law to the business and other people.

CO4: To demonstrate an understanding of key elements while signing an agreement

CO5: To understand the overview of Legal framework of business.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X						
CO3	X	X			X		X
CO4		X					X
CO5	X						X

BANKING THEORY, LAW & PRACTICE: After completing the course **BANKING THEORY, LAW & PRACTICE,** the students will be able:

CO1: To understand the origin and historical growth of Indian Banking System.

CO2: To get knowledge about the functions of RBI and commercial banks

CO3: To get exposure regarding different types of deposits and borrowings.

CO4: To get knowledge about the recent developments in Indian Banking Sector.

CO5: To acquaint with current financial sector reforms,

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X		X				X
CO3	X					X	X
CO4	X		X				X
CO5	X	X				X	

MARKETING: After completing the course **MARKETING,** the students will be able:

CO1: To get exposure on the importance and relevance of marketing in today's context.

CO2: To understand the basic features of Indian marketing and importance of advertisement in today's marketing era.

CO3: To get knowledge about the marketing mix and relevance of appropriate marketing mix.

CO4: To get aware on current aspects of marketing such as E-marketing, MIS.

CO5: To evaluate and act upon the ethical and environmental concerns linked to marketing activities

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X	X					
CO2	X	X			X		
CO3	X	X				X	X
CO4	X	X				X	X
CO5		X			X	X	X

BUSINESS STATISTICS: After completing the course **BUSINESS STATISTICS,** the students will be able:

CO1: To understand the concepts of business statistics

CO2: To know the most widely used probability distributions and recognize them in applications.

CO3: To know the main tools to describe Index Numbers such as price and cost of living.

CO4: To make the students able to derive sampling procedures, estimators and to construct exact &

approximate confidence intervals.

CO5: To possess knowledge on the techniques of hypothesis testing and to enhance complex mathematical reasoning.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2				X			
CO3		X		X			
CO4		X				X	
CO5		X				X	

COURSE OUTCOME – SEMESTER IV

ADVANCED CORPORATE ACCOUNTING: After completing the course **ADVANCED CORPORATE ACCOUNTING**, the students will be able:

CO1: To understand the accounting procedure for corporate restructuring.

CO2: To gain knowledge in understanding the applications of accounting standards in corporate sector.

CO3: To Illustrate the acquisition, amalgamation, and reconstruction (internal &external) schemes of companies.

CO4: To explain the methods of preparing statements for liquidation of companies.

CO5: To understand the concepts and practices of company accounts in accordance with statutory requirements.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X			X			
CO2	X			X			
CO3				X		X	
CO4				X		X	
CO5	X					X	

COMPANY LAW: After completing the course **COMPANY LAW**, the students will be able:

CO1: To get awareness on the recent amendments of Companies Act and learn about various provisions governing the company law.

CO2: To get knowledge on the content of important documents.

CO3: To understand the process of Winding up of the Companies.

CO4: To gain knowledge on the company law provisions and amendments.

CO5: To understand types of directors and their responsibilities.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X	X			X		
CO3	X	X					X
CO4	X				X	X	X
CO5	X					X	X

FINANCIAL SERVICES: After completing the course **FINANCIAL SERVICES**, the students will be able:

CO1: To understand the concepts, objectives, functions, features of financial services.

CO2: To know about the players and their contribution to the growth of financial services sector in India.

CO3: To gain knowledge on the role of SEBI & functions of stock exchanges.

CO4: To equip with the functional aspects of the various types of financial products and services available in our country.

CO5: To familiarize in aspects of banking, insurance, investments and merchant banking activities, project appraisal, leasing, factoring, capital structure decisions, mergers and acquisitions, venture capital.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X					X	X
CO3	X	X				X	X
CO4	X	X					
CO5	X					X	X

INDIRECT TAXATION: After completing the course **INDIRECT TAXATION**, the students will be able:

CO1: To gain knowledge on principles of Indirect taxation with reference to India.

CO2: To understand the concept of Goods and Services tax (GST) and its importance.

CO3: To learn the concept of custom duty and export incentives.

CO4: To understand the concepts, types, and assessment procedures of Indirect taxes.

CO5: To comprehend the principles of taxations, objectives of taxes and its impact, shifting and incidence process of indirect taxes in the market orientated economy.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X	X					
CO3	X				X	X	X
CO4	X	X			X	X	X
CO5	X	X				X	X

OPERATIONS RESEARCH: After completing the course **OPERATIONS RESEARCH**, the students will be able:

CO1: To know the meaning of Operations Research, scope and characteristics, and to know Graphical and Simplex Method.

CO2: To find the basic feasible solution by Transportation problem, Assignment models.

CO3: To do Reach the time, time calculation, Network Analysis and its applications.

CO4: To find the Arriving rate and Service rate by using Queueing Models.

CO5: To learn to develop the probability using Baye's theorem, Decision Theory, Game theory.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X			X		X	
CO3	X			X		X	
CO4	X			X		X	
CO5	X			X		X	

COURSE OUTCOME – SEMESTER V

ELEMENTS OF COST ACCOUNTING: After completing the course **ELEMENTS OF COST ACCOUNTING**, the students will be able:

CO1: To know the various elements of Cost.

CO2: To understand the process of ascertaining, classification and controlling costs.

CO3: To prepare Cost Sheets, Tender and Quotations

CO4: To understand the techniques of costing, preparation of cost sheet, Need for material control, control of idle time of labour, methods of calculation of labour turnover and classification of overheads.

CO5: To analyse the various system of wage payment.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X			X			
CO3				X			X
CO4	X			X	X		X
CO5	X			X			X

PRACTICAL AUDITING: After completing the course **PRACTICAL AUDITING**, the students will be able:

CO1: To learn about Audit types, audit planning and working papers.

CO2: To analyse the Importance of vouching of cash receipts payments.

CO3: To Outline about Appointment of auditors and their removal.

CO4: To assess the Rights duties and of an auditor.

CO5: To gain knowledge about EDP audit and types of online computer system.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X	X					
CO2	X	X					
CO3	X	X	X			X	X
CO4	X	X	X			X	X
CO5	X	X				X	X

LOGISTICS & SUPPLY CHAIN MANAGEMENT: After completing the course **LOGISTICS & SUPPLY CHAIN MANAGEMENT,** the students will be able:

CO1: To understand the basic concepts of logistics and supply chain management.

CO2: To get insights into the nature of working in logistics and supply chain industry.

CO3: To equipped to take up jobs in logistics and allied industries.

CO4: To understand how various warehousing management system and transportation can be practiced in various industries.

CO5: To exposed to emerging technologies in logistics and supply management.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO1	X	X					
CO2	X	X					
CO3	X					X	X
CO4	X	X			X		X
CO5	X	X				X	X

FINANCIAL MANAGEMENT: After completing the course **FINANCIAL MANAGEMENT,** the students will be able:

CO1: To outline the meaning, objective and Functions of financial management which are essential to perform the role of financial manager in current scenario.

CO2: To compute and analyse the Capital structures such as Debt and Equity and determining the proportion and factors affecting the same. Able to demonstrate the various theories pertaining to capital structure and explain the concept of leverage demonstrate and analyse the weighted average cost of capital of the firm.

CO3: To create and design the optimum capital structure with using the cost of appropriate proportion of equity, preference capital, and debt and retained earnings.

CO4: To analyse and compute various dividend payment methods such as Walter's and Gordon's model. To outline the factors affecting dividend payment and company law provision for the same.

CO5: To evaluate the Working Capital Management and compute the various components working capital operating cycle.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X			X		X	X
CO3	X			X		X	X
CO4	X			X		X	X
CO5	X			X		X	X

INCOME TAX THEORY LAW & PRACTICE I: After completing the course **INCOME TAX THEORY LAW & PRACTICE I,** the students will be able:

CO1: To identify the technical terms related to Income Tax.

CO2: To understand the concepts of Income Tax and various provisions of IT Act.

CO3: The students will learn to calculate the income from salary, income from house property and Profits and gains from business.

CO4: To determine the residential status of an individual and scope of total income.

CO5: To acquire the knowledge about types of filing, E-filing & submission of returns.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO1	X						
CO2	X	X					
CO3	X			X	X		X
CO4				X	X	X	X
CO5	X					X	X

COURSE OUTCOME – SEMESTER VI

ADVANCED COST ACCOUNTING: After completing the course **ADVANCED COST ACCOUNTING**, the students will be able:

CO1: To understand the concepts of cost accounting and various methods.

CO2: To prepare different methods of costing like, job, batch, contract process and operating.

CO3: To gain knowledge on Marginal costing technique for decision making.

CO4: To understand the advantages of Costing to the Stakeholders, Workers, Creditors, and the Public.

CO5: To understand the process of ascertaining, classification and controlling costs.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X			X			
CO3				X			X
CO4	X			X	X		X
CO5	X			X			X

MANAGEMENT ACCOUNTING: After completing the course **MANAGEMENT ACCOUNTING**, the students will be able:

CO1: To acquire knowledge on various tools and techniques of Management.

CO2: To obtain practical skills in solving management problems.

CO3: To learn the technique of preparing funds flow statement and calculation of ratios.

CO4: To analyse and interpret the Financial Statements to provide information to management for taking important decisions.

CO5: To develop and apply budget for planning and controlling purpose.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO1	X						
CO2	X			X		X	X
CO3	X			X		X	X
CO4	X			X		X	X
CO5	X			X		X	X

ENTREPRENEURIAL DEVELOPMENT: After completing the course **ENTREPRENEURIAL DEVELOPMENT**, the students will be able:

CO1: To understand the concept of Entrepreneurship and professional behaviour of the entrepreneur.

CO2: To identify the significant changes and trends which create business opportunities.

CO3: To provide students to knowledge about the formulation of project Report for starting new ventures.

CO4: To know about various sources of entrepreneurial funding, venture capital, Government grants and schemes

CO5: To acquire knowledge on Entrepreneurial Development Programmes and Agencies.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X	X					
CO2	X	X				X	X
CO3	X	X	X		X	X	X
CO4	X	X			X	X	X
CO5	X	X			X	X	X

HUMAN RESOURCE MANAGEMENT: After completing the course **HUMAN RESOURCE MANAGEMENT**, the students will be able:

CO1: To develop the understanding of the concept of human resource management and to understand its relevance in organizations.

CO2: To develop necessary skill set for application of various HR issues.

CO3: To analyse the strategic issues and strategies required to select and develop manpower resources.

CO4: To integrate the knowledge of HR concepts to take correct business decisions.

CO5: To acquire knowledge on Human Resource Accounting & Audit, Corporate ethics, and Corporate Social Responsibility.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO1	X						
CO2	X						
CO3	X	X	X			X	X
CO4	X	X	X			X	X
CO5	X	X			X	X	X

INCOME TAX THEORY LAW & PRACTICE-II: After completing the course **INCOME TAX THEORY LAW & PRACTICE-II,** the students will be able:

CO1: The students will understand the concepts of Income Tax and various provisions of IT Act

CO2: The students will learn to calculate the income from capital gain, income from other sources.

CO3: The students acquire the knowledge about various deductions applicable to an individual.

CO4: The students will understand & learn the procedure for calculation of taxable income and calculation of tax liability.

CO5: The students will understand about the Income tax authorities and procedure for assessment.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X	X					
CO3	X			X	X		X
CO4				X	X	X	X
CO5	X					X	X

B.COM DEGREE –BANK MANAGEMENT

Hindustan College of Arts & Science
INTERNAL QUALITY ASSURANCE CELL

PROGRAM OUTCOME, PROGRAM SPECIFIC OUTCOME & COURSE OUTCOME
(UNDERGRADUATE COURSES)

Program Name: Bachelor of Commerce (BM)

PROGRAM OUTCOME

PO1:Soundness in basic concepts: After completing three years programme in Bachelors in Commerce (BM), students would be able to **generalise** the basics and fundamental concepts in the field of Commerce, Banking Management, Banking Services & Marketing.

PO2: Critical Thinking: The students will **acquire** analytical and problem-solving skills in various disciplines of Banking Management, business, accounting, tax, finance, and law.

PO3: Effective Communication: To **develop** the students communication skills in accordance with the recent developments in accounting professional and Information technology. And further to **prepare** them to face the communication challenges of industry by teaching them writing effective reports, making effective presentations, and clear exchange of information.

PO4: Accounting Application: To make the students to **apply** the knowledge of accounting fundamentals, and techniques to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional accounting practices in the Banking Field.

PO5:Business Ethics: The students are made to **understand** and **apply** ethical principles and commit to professional ethics, responsibilities and norms of the accounting practices to be applied in Bank Management.

PO6: Knowledge for Employability: The students will be **equipped** for employment in functional areas like accounting, taxation, banking, insurance, and corporate law and **developing** attitude to work effectively and efficiently in a complex business environment. Learners will gain knowledge of various disciplines of commerce, business, accounting, economics, and finance, auditing, and marketing.

PROGRAM SPECIFIC OUTCOME

PSO1: Students will get exposure on relevant quantitative and qualitative Financial Accounting skills and applications to their future careers in business (banking sectors)

PSO2: Students will earn the various concepts and applicability of Managerial accounting to practically implement in to their future careers in business.

PSO3: Students will gain thorough knowledge on systematic and subject skills in various disciplines ofCommerce, Banking,Accounting,Economics,Finance,AuditingandMarketing.

PSO4: Perform procedures of ethical business as per the Industrial Rules and Regulation & Environmental Policy.

PSO5: Learners will be able to identify the features and Roles of Businessmen, Entrepreneur,

Managers,Consultant,which will helplearners to possessknowledge and effective communication skillsand toreactaptlywhenconfrontedwithcriticaldecisionmaking.

PSO6: LearnerswillbeabletoproveproficiencywiththeabilitytoengageinProfessional&CompetitiveExaminationslikeCA,CS,ICWA,BSRBandPGCourseslikeM.Com,MBAandotherartscourses.

PSO7: Learners will acquire the skills like effective communication, decision making, problem solving inday-to-daybusinessaffairsespeciallyleadershipqualities.

PSO8: Learners will involve in various co-curricular activities to demonstrate relevancy of foundationalandtheoreticalknowledgeoftheiracademicmajorandtogainpracticalexposure.

PSO9: Studentswilldemonstrateprogressiveaffectivedomaindevelopmentofvalues,theroleofaccountinginsocietyandbusiness.

PSO10: Learners can also acquire practical skills to work as Tax Consultant, stock broker, AuditAssistantandotherFinancialSupportingServices.

PSO11: Learners will be able to do higher education and advance research in the field of commerce and finance, banking sectors.

COURSE OUTCOME – SEMESTER I

FINANCIAL ACCOUNTING: After completing the course **FINANCIAL ACCOUNTING**, the students will be able:

CO1: To know about the principles of accounting in general.

CO2: To understand the system of preparing financial statements for various types of organization.

CO3: To familiarize with knowledge about financial reporting standards.

CO4: To learn the various methods of maintaining the accounting records.

CO5: To understand the system of keeping financial accounting records in different types pf organizations.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X	X	
CO3	X			X	X	
CO4				X		
CO5				X		

BUSINESS COMMUNICATION: After completing the course **BUSINESS COMMUNICATION**, the students will be able:

CO1: To get an exposure regarding the concept of communication.

CO2: To differentiate amongst various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organization.

CO3: To apply basic techniques of writing modern forms of communication letters and reports related to business

CO4: To draft effective business correspondence with brevity and clarity.

CO5: To stimulate their critical thinking by designing and developing clean and articulate writing skills.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X	X			
CO2		X	X			
CO3			X			X
CO4			X			
CO5		X				

BUSINESS ECONOMICS: After completing the course **BUSINESS ECONOMICS**, the students will be able:

CO1: To understand the nature and scope of Business Economics and will be able to identify the economic variables in general business atmosphere.

CO2: To perceive the knowledge about Economics at Micro level and various economic concepts such as Opportunity cost, Marginal Concepts, Demand and Supply function, Consumption and Production Laws.

CO3: To learn attainment of Short Run and Long Run Equilibrium of a firm and industry and under different market structure and various pricing techniques.

CO4: To know the application of economic analysis and theories into the business decision making.

CO5: To outline the economic principles and best practices in business.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X			X	
CO2	X					
CO3		X				
CO4		X				X
CO5						X

COURSE OUTCOME – SEMESTER II

PRINCIPLES OF MANAGEMENT: After completing the course **PRINCIPLES OF MANAGEMENT**, the students will be able:

CO1: To understand the concepts of basic concepts of management.
CO2: To get knowledge about the significance of the management in business.
CO3: To understand the management principles providing guidelines as to how tasks are to be completed for increased efficiency.
CO4: To learn about the application of management skills to ensure effective utilization of available resources.
CO5: To examine the managerial functions and its impact on the organizational effectiveness,

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X				X	
CO3	X					
CO4						
CO5					X	

TREASURY MANAGEMENT: After completing the course **TREASURY MANAGEMENT**, the students will be able:
CO1: To learn to summarize, analyse and report institution treasury function.
CO2: To learn about maintaining rationale for the treasury function in corporations.
CO3: To involve them in risk management framework required for corporate banking and government entities in areas such as foreign exchange, interest rates, liquidity, credit and commodity price risk management.
CO4: To apply and critically evaluate techniques used to identify and manage exposure to cash-flow and liquidity risk.
CO5: To use treasury management skills to control framework and evaluate the corporate governance issues associated with the operation of a treasury function.
CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X		
CO3		X		X	X	
CO4				X	X	
CO5				X		

INDIAN ECONOMY: After completing the course **INDIAN ECONOMY**, the students will be able:
CO1: To acquire knowledge on the basic characteristics of Indian economy, its potential on natural resources.

CO2: To understand the importance, causes and impact of population growth on economic development.

CO3: To comprehend knowledge on the importance of planning undertaken by the government of India, have knowledge on the various objectives, failures, and achievements as the foundation of the ongoing planning and economic reforms taken by the government.

CO4: To understand the working of Primary, Secondary and Tertiary sectors towards contribution of economic growth and development.

CO5: To analyse the various economic and social issues of Indian Economy.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X					
CO3	X					
CO4	X					
CO5					X	

COURSE OUTCOME – SEMESTER III

CORPORATE ACCOUNTING: After completing the course **CORPORATE ACCOUNTING**, the students will be able:

CO1: To familiarize with the concepts of issue of shares and underwriting.

CO2: To understand the provisions of issue of debenture and Profits prior to incorporation.

CO3: To construct the computation of Goodwill and shares.

CO4: To assess the preparation of Final accounts of companies.

CO5: To develop skills in accounting standards.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X		
CO2	X			X		
CO3				X		
CO4				X		
CO5	X			X		

BUSINESS LAWS: After completing the course **BUSINESS LAWS**, the students will be able:

CO1: To know about the basic provisions of law governing the General Contract and Special Contract.

CO2: To learn about the essential elements and rules of valid contract.
CO3: To understand about the legal remedies available in the law to the business and other people.
CO4: To demonstrate an understanding of key elements while signing an agreement
CO5: To understand the overview of Legal framework of business.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X					
CO3	X	X			X	
CO4		X				
CO5	X					

BANKING THEORY, LAW & PRACTICE: After completing the course **BANKING THEORY, LAW & PRACTICE,** the students will be able:
CO1: To understand the origin and historical growth of Indian Banking System.
CO2: To get knowledge about the functions of RBI and commercial banks
CO3: To get exposure regarding different types of deposits and borrowings.
CO4: To get knowledge about the recent developments in Indian Banking Sector.
CO5: To acquaint with current financial sector reforms,

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X		X			
CO3	X					X
CO4	X		X			
CO5	X	X				X

MARKETING OF BANKING SERVICES: After completing the course **MARKETING OF BANKING SERVICES,** the students will be able:
CO1: To get exposure on the importance and relevance of marketing in today's context.
CO2: To understand the basic features of Indian marketing and importance towards banking field and of advertisement in today's marketing era.
CO3: To get knowledge about the marketing mix and relevance of appropriate marketing

mix of banking services.

CO4: To get aware on current aspects of marketing such as E-marketing, MIS.

CO5: To evaluate and act upon the ethical and environmental concerns linked to marketing activities

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X				
CO2	X	X			X	
CO3	X	X				X
CO4	X	X				X
CO5		X			X	X

BUSINESS STATISTICS: After completing the course **BUSINESS STATISTICS,** the students will be able:

CO1: To understand the concepts of business statistics

CO2: To know the most widely used probability distributions and recognize them in applications.

CO3: To know the main tools to describe Index Numbers such as price and cost of living.

CO4: To make the students able to derive sampling procedures, estimators and to construct exact & approximate confidence intervals.

CO5: To possess knowledge on the techniques of hypothesis testing and to enhance complex mathematical reasoning.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2				X		
CO3		X		X		
CO4		X				X
CO5		X				X

COURSE OUTCOME – SEMESTER IV

ADVANCED CORPORATE ACCOUNTING: After completing the course **ADVANCED CORPORATE ACCOUNTING**, the students will be able:

CO1: To understand the accounting procedure for corporate restructuring.

CO2: To gain knowledge in understanding the applications of accounting standards in corporate sector.

CO3: To Illustrate the acquisition, amalgamation, and reconstruction (internal & external) schemes of companies.
CO4: To explain the methods of preparing statements for liquidation of companies.
CO5: To understand the concepts and practices of company accounts in accordance with statutory requirements.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X		
CO2	X			X		
CO3				X		X
CO4				X		X
CO5	X					X

CUSTOMER RELATIONSHIP MANAGEMENT: After completing the course **CUSTOMER RELATIONSHIP MANAGEMENT**, the students will be able:
CO1: To get awareness on the recent methods in Customer Relationship Management.
CO2: To get knowledge on the basic concepts of Customer Relationship Management.
CO3: To understand the Marketing aspects of Customer Relationship Management.
CO4: To gain knowledge on analytical Customer Relationship Management.
CO5: To understand types operational Customer Relationship Management.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X	X			X	
CO3	X	X				
CO4	X				X	X
CO5	X					X

FINANCIAL SERVICES: After completing the course **FINANCIAL SERVICES**, the students will be able:
CO1: To understand the concepts, objectives, functions, features of financial services.
CO2: To know about the players and their contribution to the growth of financial services sector in India.
CO3: To gain knowledge on the role of SEBI & functions of stock exchanges.
CO4: To equip with the functional aspects of the various types of financial products and

services available in our country.

CO5: To familiarize in aspects of banking, insurance, investments and merchant banking activities, project appraisal, leasing, factoring, capital structure decisions, mergers and acquisitions, venture capital.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X					X
CO3	X	X				X
CO4	X	X				
CO5	X					X

INDIRECT TAXATION: After completing the course **INDIRECT TAXATION**, the students will be able:

CO1: To gain knowledge on principles of Indirect taxation with reference to India.

CO2: To understand the concept of Goods and Services tax (GST) and its importance.

CO3: To learn the concept of custom duty and export incentives.

CO4: To understand the concepts, types, and assessment procedures of Indirect taxes.

CO5: To comprehend the principles of taxations, objectives of taxes and its impact, shifting and incidence process of indirect taxes in the market orientated economy.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X	X				
CO3	X				X	X
CO4	X	X			X	X
CO5	X	X				X

INTERNATIONAL ECONOMICS: After completing the course **INTERNATIONAL ECONOMICS**, the students will be able:

CO1: Toknow the meaning of International Economics, International Trade on welfare and income distribution.

CO2: Tofind and analyse the role of firm heterogeneity in International trade.

CO3: To do Reach and Discuss price levels, output and exchange rates in the long and short run.

CO4: To find apply and interpret economic framework to current macroeconomic issues.

CO5: To learn to develop the relationship between international trade and regional inequity.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X		X
CO3	X			X		X
CO4	X			X		X
CO5	X			X		X

COURSE OUTCOME – SEMESTER V

BANKING THEORY REGULATORY MECHANISM: After completing the course **BANKING THEORY REGULATORY MECHANISM**, the students will be able:

CO1: To know the various the concept of the Banking structure in India.

CO2: To understand the know the relationship between the Banking theory reforms & Monetary policy.

CO3: To gain knowledge about various financial reforms.

CO4: To understand the knowledge related to monetary policy.

CO5: To analyse the various system of regulatory mechanism.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X		
CO3				X		
CO4	X			X	X	
CO5	X			X		

PORTFOLIO MANAGEMENT: After completing the course **PORTFOLIO MANAGEMENT**, the students will be able:

CO1: To learn about the basic concepts of portfolio management

CO2: To analyse the Importance of portfolio theories.

CO3: To Outline about techniques of portfolio management.

CO4: To assess the various options available to portfolio managers.

CO5: To gain knowledge investment, risk and return.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X				
CO2	X	X				
CO3	X	X	X			X
CO4	X	X	X			X
CO5	X	X				X

INTERNATIONAL BANKING: After completing the course **INTERNATIONAL BANKING,** the students will be able:

CO1: To understand the concepts of International Banking structure.

CO2: To get insights into about the role of Foreign Exchange Market

CO3: To equipped the knowledge about the management of Foreign exchange.

CO4: To understand how various concepts affecting the performance of international banking.

CO5: To exposed to understand functions ofInternational Financial Institutions.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X				
CO2	X	X				
CO3	X					X
CO4	X	X			X	
CO5	X	X				X

CREDIT AND RISK MANAGEMENT IN BANKING: After completing the course **CREDIT AND RISK MANAGEMENT IN BANKING,** the students will be able:

CO1: To outline the the concept of Credit and Risk Management.

CO2: To analyse the Lending process of banks and documents required.

CO3: To create and design the optimal credit and risk managing structure in banking sector.

CO4: To analyse and compute the concept of NPA, causes and remedies.

CO5: To evaluate the the knowledge about the process of Credit and Risk Management.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X		X
CO3	X			X		X
CO4	X			X		X
CO5	X			X		X

INCOME TAX THEORY LAW & PRACTICE I: After completing the course **INCOME TAX THEORY LAW & PRACTICE I,** the students will be able:

CO1: To identify the technical terms related to Income Tax.

CO2: To understand the concepts of Income Tax and various provisions of IT Act.

CO3: The students will learn to calculate the income from salary, income from house property and Profits and gains from business.

CO4: To determine the residential status of an individual and scope of total income.

CO5: To acquire the knowledge about types of filing, E-filing & submission of returns.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X	X				
CO3	X			X	X	
CO4				X	X	X
CO5	X					X

COURSE OUTCOME – SEMESTER VI

TECHNOLOGY IN BANKING: After completing the course **TECHNOLOGY IN BANKING**,the students will be able:

CO1: To understand the concepts of application of technology in banking.

CO2: To prepare various methods for the effective implementation of latest technologies in banking sector.

CO3: To gain knowledge on electronic banking and electronic banking services.

CO4: To understand the advantages of modern technologies equipped in the banking sector and its utilization.

CO5: To understand the concepts of cyber laws, information technology act, prevention of

money laundering act, payment and settlement act in detail.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X		
CO3				X		
CO4	X			X	X	
CO5	X			X		

MARKETING OF BANKING SERVICES: After completing the course **MARKETING OF BANKING SERVICES** ,the students will be able:

CO1: To get exposure on the importance and relevance of marketing in today's context.

CO2: To understand the basic features of Indian marketing and importance towards banking field and of advertisement in today's marketing era.

CO3: To get knowledge about the marketing mix and relevance of appropriate marketing mix of banking services.

CO4: To get aware on current aspects of marketing such as E-marketing, MIS.

CO5: To evaluate and act upon the ethical and environmental concerns linked to marketing activities

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X				
CO2	X	X			X	
CO3	X	X				X
CO4	X	X				X
CO5		X			X	X

TREASURY MANAGEMENT: After completing the course **TREASURY MANAGEMENT**, the students will be able:

CO1: To learn to summarize, analyse and report institution treasury function.

CO2: To learn about maintaining rationale for the treasury function in corporations.

CO3: To involve them in risk management framework required for corporate banking and government entities in areas such as foreign exchange, interest rates, liquidity, credit and commodity price risk management.

CO4: To apply and critically evaluate techniques used to identify and manage exposure to cash-flow and liquidity risk.

CO5: To use treasury management skills to control framework and evaluate the corporate governance issues associated with the operation of a treasury function.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X		
CO3		X		X	X	
CO4				X	X	
CO5				X		

INCOME TAX THEORY LAW & PRACTICE-II:

After completing the course **INCOME TAX THEORY LAW & PRACTICE-II,** the students will be able:

CO1: The students will understand the concepts of Income Tax and various provisions of IT Act

CO2: The students will learn to calculate the income from capital gain, income from other sources.

CO3: The students acquire the knowledge about various deductions applicable to an individual.

CO4: The students will understand & learn the procedure for calculation of taxable income and calculation of tax liability.

CO5: The students will understand about the Income tax authorities and procedure for assessment.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X						
CO2	X	X					
CO3	X			X	X		X
CO4				X	X	X	X
CO5	X					X	X

CUSTOMER RELATIONSHIP MANAGEMENT: After completing the course **CUSTOMER RELATIONSHIP MANAGEMENT**, the students will be able:

CO1: To get awareness on the recent methods in Customer Relationship Management.

CO2: To get knowledge on the basic concepts of Customer Relationship Management.
CO3: To understand the Marketing aspects of Customer Relationship Management.
CO4: To gain knowledge on analytical Customer Relationship Management.
CO5: To understand types operational Customer Relationship Management.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X	X			X	
CO3	X	X				
CO4	X				X	X
CO5	X					X

B.COM DEGREE –CORPORATE SECRETARYSHIP

Hindustan College of Arts & Science
INTERNAL QUALITY ASSURANCE CELL
PROGRAM OUTCOME, PROGRAM SPECIFIC OUTCOME & COURSE OUTCOME
(UNDERGRADUATE COURSES)

Program Name: Bachelor of Commerce (CORPORATE SECRETARYSHIP)

PROGRAM OUTCOME

PO1:Soundness in basic concepts: After completing three years programme in Bachelors in Commerce (CS), students would be able to **generalise** the basics and fundamental concepts in the field of Commerce, Corporate sectors, Audit & Marketing.

PO2: Critical Thinking: The students will **acquire** analytical and problem-solving skills in various disciplines of Corporate Management, business, accounting, tax, finance, and law.

PO3: Effective Communication: To **develop** the students communication skills in accordance with the recent developments in accounting professional and Information technology. And further to **prepare** them to face the communication challenges of industry by teaching them writing effective reports, making effective presentations, and clear exchange of information.

PO4: Accounting Application: To make the students to **apply** the knowledge of accounting fundamentals, and techniques to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional accounting practices in the Corporate Field.

PO5:Business Ethics: The students are made to **understand** and **apply** ethical principles and commit to professional ethics, responsibilities and norms of the accounting practices to be applied in Corporate Secretaryship.

PO6: Knowledge for Employability: The students will be **equipped** for employment in functional areas like accounting, taxation, Multinational Companies, insurance, and corporate law and **developing** attitude to work effectively and efficiently in a complex business environment. Learners will gain knowledge of various disciplines of commerce, business, accounting, economics, and finance, auditing, and marketing.

PROGRAM SPECIFIC OUTCOME

PSO1: Students will be given an explanation of relevant quantitative and qualitative financial accounting skills and applications for their future career in business (banking)

PSO2: Various management accounting concepts and applicability will be learned for practical application in their future career.

PSO3: The student acquires in-depth knowledge of systemic and substantive skills in various areas of business, banking, accounting, economics, finance, auditing and marketing.

PSO4: Carry out procedures according to industry rules and regulations and environmental policies.

PSO5: Learners will be able to identify the characteristics and roles of businessmen, entrepreneurs, managers, consultants, which will help learners gain knowledge and effective communication skills and respond accurately when faced with a critical decision.

PSO6: Students can show their ability to appear in professional and competitive exams like

CA, CS, ICWA, BSRB and PG courses like M.Com, MBA and other arts courses.

PSO7: Learners acquire skills such as effective communication, decision-making, problem-solving in daily business activities, especially leadership qualities.

PSO8: Students participate in various co-curricular activities to demonstrate the importance of the foundations and theoretical knowledge of the academic major and gain practical exposure.

PSO9: Students demonstrate the progressive and effective development of values that are fundamental to accounting for society and business.

PSO10: Learners can also gain practical skills to work as a tax consultant, stockbroker, audit assistant and other financial support services.

PSO11: Learners are able to pursue higher education and progress in business, finance and banking.

COURSE OUTCOME – SEMESTER I

FINANCIAL ACCOUNTING: After completing the course **FINANCIAL ACCOUNTING**, the students will be able:

CO1: To know about the principles of accounting in general.

CO2: To understand the system of preparing financial statements for various types of organization.

CO3: To familiarize with knowledge about financial reporting standards.

CO4: To learn the various methods of maintaining the accounting records.

CO5: To understand the system of keeping financial accounting records in different types pf organizations.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X	X	
CO3	X			X	X	
CO4				X		
CO5				X		

BUSINESS COMMUNICATION: After completing the course **BUSINESS COMMUNICATION**, the students will be able:

CO1: To get an exposure regarding the concept of communication.

CO2: To differentiate amongst various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organization.

CO3: To apply basic techniques of writing modern forms of communication letters and reports related to business

CO4: To draft effective business correspondence with brevity and clarity.
CO5: To stimulate their critical thinking by designing and developing clean and articulate writing skills.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X	X			
CO2		X	X			
CO3			X			X
CO4			X			
CO5		X				

INTERNATIONAL TRADE: After completing the course **INTERNATIONAL TRADE**, the students will be able:
CO1: To understand theories of international trade by various authors.
CO2: To perceive the knowledge about trade policy, European Union Trade, and Development Bank.
CO3: To learn attainment an overview about world trade organization, and its function.
CO4: To know the application of balance of payments, disequilibrium, exchange control and purchasing power parity theory.
CO5: To outline the international monetary system, IMF, international liquidity and IBRD.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X			X	
CO2	X					
CO3		X				
CO4		X				X
CO5						X

COURSE OUTCOME – SEMESTER II

ADVANCED FINANCIAL ACCOUNTING: After completing the course **ADVANCED FINANCIAL ACCOUNTING**, the students will be able:

CO1: To learn to summarize, analyse and report the financial transactions pertaining to a business.
CO2: To learn about maintaining of accounts for Partnership, Branches, and Departments.
CO3: To involve them in preparation of financial statements available for public consumption such as Stockholders, suppliers, banks, employees, government agencies, business owners, and other people who are interested in receiving such information for decision making purposes.
CO4: To apply the International Financial Reporting Standards in intermediate as well as more advanced situations.
CO5: To use accounting principles and theory in order to evaluate and criticize accounting standards

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X		
CO3		X		X	X	
CO4				X	X	
CO5				X		

CORPORATE MANAGEMENT: After completing the course **CORPORATE MANAGEMENT**, the students will be able:

CO1: To understand the concepts of basic concepts of management.
CO2: To get knowledge about the significance of the management in business.
CO3: To understand the management principles providing guidelines as to how tasks are to be completed for increased efficiency.
CO4: To learn about the application of management skills to ensure effective utilization of available resources.
CO5: To examine the managerial functions and its impact on the organizational effectiveness,

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6

CO1	X					
CO2	X				X	
CO3	X					
CO4						
CO5					X	

BUSINESS ECONOMICS: After completing the course **BUSINESS ECONOMICS**, the students will be able:

CO1: To understand the nature and scope of Business Economics and will be able to identify the economic variables in general business atmosphere.

CO2: To perceive the knowledge about Economics at Micro level and various economic concepts such as Opportunity cost, Marginal Concepts, Demand and Supply function, Consumption and Production Laws.

CO3: To learn attainment of Short Run and Long Run Equilibrium of a firm and industry and under different market structure and various pricing techniques.

CO4: To know the application of economic analysis and theories into the business decision making.

CO5: To outline the economic principles and best practices in business

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X			X	
CO2	X					
CO3		X				
CO4		X				X
CO5						X

COURSE OUTCOME – SEMESTER III

CORPORATE ACCOUNTING: After completing the course **CORPORATE ACCOUNTING**, the students will be able:

CO1: To familiarize with the concepts of issue of shares and underwriting.

CO2: To understand the provisions of issue of debenture and Profits prior to incorporation.

CO3: To construct the computation of Goodwill and shares.

CO4: To assess the preparation of Final accounts of companies.

CO5: To develop skills in accounting standards.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X		
CO2	X			X		
CO3				X		
CO4				X		
CO5	X			X		

COMPANY LAW & SECRETARIAL PRACTICE: After completing the course **COMPANY LAW & SECRETARIAL PRACTICE**, the students will be able:

CO1: To know about the basic provisions of law governing the General Contract and Special Contract.

CO2: To learn about the essential elements and rules of valid contract.

CO3: To understand about the legal remedies available in the law to the business and other people.

CO4: To demonstrate an understanding of key elements while signing an agreement

CO5: To understand the overview of Legal framework of business

.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X					
CO3	X	X			X	
CO4		X				
CO5	X					

BUSINESS STATISTICS: After completing the course **BUSINESS STATISTICS,** the students will be able:

CO1: To understand the concepts of business statistics

CO2: To know the most widely used probability distributions and recognize them in applications.

CO3: To know the main tools to describe Index Numbers such as price and cost of living.

CO4: To make the students able to derive sampling procedures, estimators and to construct exact & approximate confidence intervals.

CO5: To possess knowledge on the techniques of hypothesis testing and to enhance complex mathematical reasoning.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6

CO1	X					
CO2				X		
CO3		X		X		
CO4		X				X
CO5		X				X

COURSE OUTCOME – SEMESTER IV

ADVANCED CORPORATE ACCOUNTING: After completing the course **ADVANCED CORPORATE ACCOUNTING**, the students will be able:

CO1: To understand the accounting procedure for corporate restructuring.

CO2: To gain knowledge in understanding the applications of accounting standards in corporate sector.

CO3: To Illustrate the acquisition, amalgamation, and reconstruction (internal & external) schemes of companies.

CO4: To explain the methods of preparing statements for liquidation of companies.

CO5: To understand the concepts and practices of company accounts in accordance with statutory requirements.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X		
CO2	X			X		
CO3				X		X
CO4				X		X
CO5	X					X

INDIRECT TAXATION: After completing the course **INDIRECT TAXATION**, the students will be able:

CO1: To gain knowledge on principles of Indirect taxation with reference to India.

CO2: To understand the concept of Goods and Services tax (GST) and its importance.

CO3: To learn the concept of custom duty and export incentives.

CO4: To understand the concepts, types, and assessment procedures of Indirect taxes.

CO5: To comprehend the principles of taxations, objectives of taxes and its impact, shifting and incidence process of indirect taxes in the market orientated economy.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6

CO1	X					
CO2	X	X				
CO3	X				X	X
CO4	X	X			X	X
CO5	X	X				X

SECURITIES LAW & MARKET OPERATIONS: After completing the course **SECURITIES LAW & MARKET OPERATIONS**, the students will be able:

CO1: To get awareness on the primary market and its function.

CO2: To get knowledge on the secondary market its origin, kinds of brokers in stock exchanges and SEBI Guidelines

CO3: To understand the Financial instruments in New issue & secondary market.

CO4: To gain knowledge on the mechanisms of stock market trading, and market indexes.

CO5: To understand different types of credit rating agencies and its significances.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X	X			X	
CO3	X	X				
CO4	X				X	X
CO5	X					X

COURSE OUTCOME – SEMESTER V

MANAGEMENT ACCOUNTING: After completing the course **MANAGEMENT ACCOUNTING**, the students will be able:

CO1: To acquire knowledge on various tools and techniques of Management.

CO2: To obtain practical skills in solving management problems.

CO3: To learn the technique of preparing funds flow statement and calculation of ratios.

CO4: To analyse and interpret the Financial Statements to provide information to management for taking important decisions.

CO5: To develop and apply budget for planning and controlling purpose.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					

CO2	X			X		X
CO3	X			X		X
CO4	X			X		X
CO5	X			X		X

SECURITIES LAW & MARKET OPERATIONS: After completing the course **SECURITIES LAW & MARKET OPERATIONS**, the students will be able:

CO1: To get awareness on the primary market and its function.

CO2: To get knowledge on the secondary market its origin, kinds of brokers in stock exchanges and SEBI Guidelines

CO3: To understand the Financial instruments in New issue & secondary market.

CO4: To gain knowledge on the mechanisms of stock market trading, and market indexes.

CO5: To understand different types of credit rating agencies and its significances.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X	X			X	
CO3	X	X				
CO4	X				X	X
CO5	X					X

BUSINESS LAW: After completing the course BUSINESS **LAW**, the students will be able:

CO1: To know about the basic provisions of law governing the General Contract and Special Contract.

CO2: To learn about the essential elements and rules of valid contract.

CO3: To understand about the legal remedies available in the law to the business and other people.

CO4: To demonstrate an understanding of key elements while signing an agreement

CO5: To understand the overview of Legal framework of business.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					

CO2	X					
CO3	X	X			X	
CO4		X				
CO5	X					

INCOME TAX THEORY LAW & PRACTICE I: After completing the course **INCOME TAX THEORY LAW & PRACTICE I,** the students will be able:

CO1: To identify the technical terms related to Income Tax.

CO2: To understand the concepts of Income Tax and various provisions of IT Act.

CO3: The students will learn to calculate the income from salary, income from house property and Profits and gains from business.

CO4: To determine the residential status of an individual and scope of total income.

CO5: To acquire the knowledge about types of filing, E-filing & submission of returns.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X	X				
CO3	X			X	X	
CO4				X	X	X
CO5	X					X

CORPORATE GOVERNANCE & ETHICS: After completing the course **CORPORATE GOVERNANCE &ETHICS**, the students will be able:

CO1: To understand the concept of corporate governance and its objectives.

CO2: To identify the significant levels of governance structure, responsibilities and powers.

CO3: To provide students to knowledge about the corporate governance forums – CACG, OECD, ICGN & NFCG.

CO4: To know about various corporate social responsibilities, corporate social reporting and its objectives.

CO5: To acquire knowledge on business ethics, its significance, business ethics in India.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X				
CO2	X	X				X

CO3	X	X	X		X	X
CO4	X	X			X	X
CO5	X	X			X	X

COURSE OUTCOME – SEMESTER VI

INDUSTRIAL LAW: After completing the course **INDUSTRIAL LAW**,the students will be able:

CO1: To understand the concepts of factories act and its provisions.

CO2: To gain knowledge on various concepts and provisions in industrial disputes act.

CO3: To gain knowledge on workmen compensation act.

CO4: To understand the advantages of employees state insurance act.

CO5: To understand the concepts of employees provident fund and miscellaneous provisions related to industrial law.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X		
CO3				X		
CO4	X			X	X	
CO5	X			X		

COST ACCOUNTING: After completing the course **COST ACCOUNTING**, the students will be able:

CO1: To know the various elements of Cost.

CO2: To understand the process of ascertaining, classification and controlling costs.

CO3: To prepare Cost Sheets, Tender and Quotations

CO4: To understand the techniques of costing, preparation of cost sheet, Need for material control, control of idle time of labour, methods of calculation of labour turnover and classification of overheads.

CO5: To analyse the various system of wage payment.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X			X		

CO3				X		
CO4	X			X	X	
CO5	X			X		

ENTREPRENEURIAL DEVELOPMENT: After completing the course **ENTREPRENEURIAL DEVELOPMENT**,the students will be able:

CO1: To understand the concept of Entrepreneurship and professional behaviour of the entrepreneur.

CO2: To identify the significant changes and trends which create business opportunities.

CO3: To provide students to knowledge about the formulation of project Report for starting new ventures.

CO4: To know about various sources of entrepreneurial funding, venture capital, Government grants and schemes

CO5: To acquire knowledge on Entrepreneurial Development Programmes and Agencies.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X				
CO2	X	X				X
CO3	X	X	X		X	X
CO4	X	X			X	X
CO5	X	X			X	X

INCOME TAX THEORY LAW & PRACTICE-II: After completing the course **INCOME TAX THEORY LAW & PRACTICE-II,** the students will be able:

CO1: The students will understand the concepts of Income Tax and various provisions of IT Act

CO2: The students will learn to calculate the income from capital gain, income from other sources.

CO3: The students acquire the knowledge about various deductions applicable to an individual.

CO4: The students will understand & learn the procedure for calculation of taxable income and calculation of tax liability.

CO5: The students will understand about the Income tax authorities and procedure for assessment.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X					
CO2	X	X				

CO3	X			X	X	
CO4				X	X	X
CO5	X					X

INSTITUTIONAL TRAINING: After completing the course **INSTITUTIONAL TRAINING**, the students will be able:

CO1: To bridge the gap between theory & practice and stimulate trainee's desire to face the challenges and problems in a corporate environment.

CO2: To identify the significant overview of the practical aspects of company secretaryship.

CO3: To provide students to knowledge about secretarial service, communication, equipments, postal and mailing services, equipments.

CO4: To know about various office machines and equipments and accounting record keeping.

CO5: To acquire knowledge on filling department, sales, purchase, sales accounts, salary, administration and personnel department.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X				
CO2	X	X				X
CO3	X	X	X		X	X
CO4	X	X			X	X
CO5	X	X			X	X

BA ENGLISH

UNIVERSITY OF MADRAS
B.A. DEGREE COURSE IN ENGLISH
SYLLABUS WITH EFFECT FROM 2020-2021

PROGRAM OUTCOMES

PO1: To make studentslearn whatliterature and writing is—whether creative ortechnical.
PO 2: To enrich students with a wide range of works of British, American, World literature and major writers of different nation and movement.
PO 3: To enable students work in textual analysis, including study of the formal characteristics and historical background of a text, on the one hand, and study of its aesthetic and rhetorical presence on the other.
PO 4: Apart from literature, technical papers like Grammar Usage, Journalism are also included to enhance the knowledge of the learners.
PO 5: Learners will be able to articulate the relations among culture, history, and text.
PROGRAM SPECIFIC OUTCOMES
PSO 1: To help students learn to read closely in a variety of forms, styles, structures, and modes, and to apply the value of close reading in the study of literature.
PSO 2: To enable learners understand the nuances about the major literary works and writers. They also learn about the genres, periods and also critically analyze British, American, and other World Literatures.
PSO 3: To help learners to be creative and technical.
PSO 4: To develop and carry out research projects, and locate, evaluate, organize, and incorporate information effectively.
PSO 5: To help them in learning the background information, the historical details, and biographical details of authors and works of various literatures.

COURSE OUTCOME:
After completing the course BRITISH LITERATURE-I, the students will be able to:
1. Understand the impact of historical events of 16th, 17th, and 18th centuries on English writers and their works
2. Understand the social condition of England during the aforementioned period.
3. Analyze the themes in English poetry, prose and drama written in theElizabethan and Jacobean Age
4. Analyze the style and techniques of writers during the period.
5. Assess different works of the same author(s) as well as compare and contrast works ofdifferent authors of the same literary period.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		X
CO2		X	X		X
CO3	X	X	X		X
CO4	X		X		X
CO5	X				X

After completing the course SHAKESPEARE, the students will be able to:

1. Recollect features of Elizabethan theatre along with Shakespeare's life and works
2. Identify the generic diversity in Shakespearean plays and describe significant features ofShakespearean oeuvre
3. Analyze prominent themes in Shakespearean plays.
4. Appreciate Shakespearean language, literaryelements and conventions
5. Synthesize acquired knowledge to critique plays

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X		X	
CO2	X		X		X
CO3			X		X
CO4	X		X		X
CO5			X		X

After completing the course BACKGROUND TO ENGLISH LITERATURE-I, the students will be able to:

1. Identify and define basic terms and concepts which are needed for advanced courses in British literatures
2. Describe the distinct periods of British literature
3. Write brief notes on seminal literary forms and devices
4. Write brief essays on seminal writers and their period from Medieval Europe up to the Britain of the Elizabethan and Jacobean Age
5. Write brief essays on the historical background of the same period

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		
CO2		X	X		X
CO3	X		X		X
CO4		X	X		X
CO5			X		X

After completing the course BRITISH LITERATURE-II, the students will be able to:

1. Identify and define basic terms and concepts which are needed for advanced courses in British literature
2. Write brief essays on the important works of mainstream writers from Augustan and Romantic Age
3. Describe the distinct features of British literature of the same period
4. Analyze and interpret seminal poetry of the period with close reading
5. Write essays relating historical background and thematic analysis.

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X		
CO2	X	X	X		X
CO3	X		X		
CO4			X		X
CO5			X		X

After completing the course INDIAN WRITING IN ENGLISH, the students will be able to:

1. Understand the evolution of Indian Writing in English.
2. Identify the influence of Classical Indian tradition on writers.
3. Identify the impact of western colonization on Indian English writers.
4. Analyze Indian ethos found in the representative texts
5. Evaluate Indian English texts from the postcolonial perspective.

PO/CO	PO1	PO2	PO3	PO4	PO5

CO1		X			X
CO2			X		X
CO3		X	X		X
CO4			X		X
CO5			X		X

After completing the course BACKGROUND TO ENGLISH LITERATURE-II, the students will be able to:

1. Identify and define basic terms and concepts which are needed for advanced courses in British literature
2. Describe the distinct periods of British literature
3. Write brief notes on literary forms
4. Write brief essays on seminal writers from Britain of Augustan, Romantic and Victorian Age
5. Write brief essays on the historical background of the same period.

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		
CO2		X	X		X
CO3	X		X		X
CO4		X	X		X
CO5			X		X

After completing the course BRITISH LITERATURE-III,the students will be able to:

1.Identify and define basic terms and concepts which are needed for advanced courses in British literature
2. Write brief essays describing the distinct features of the important works of mainstream writers from Victorian Age to the Twentieth Century
3. Analyze and interpret seminal poetry of the period with close reading
4. Analyze similar and contrasting themes used by the writers
5. Write essays relating historical background and thematic analysis.

PO/CO	PO1	PO2	PO3		PO4	PO5
CO1	X	X	X			

CO2	X		X			X
CO3			X			X
CO4		X	X			X
CO5			X			X

After completing the course ASPECTS OF ENGLISH LANGUAGE-I,the students will be able to:

1. Show their understanding of language and its features
2. Demonstrate their understanding of English Grammar
3. Use English language correctly
4. Distinguish between correct and incorrect use of the language
5. Improve writing skills with correct grammar usage.

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2	X			X	
CO3	X			X	
CO4	X			X	
CO5	X			X	

After completing the course BACKGROUND TO ENGLISH LITERATURE-III, the students will be able to:

1. Identify and define basic terms and concepts which are needed for advanced courses in British literature
2. Describe the distinct periods of British literature
3. Write brief notes on literary forms
4. Write brief essays on seminal writers from Britain in the Twentieth century
5. Write brief essays on the historical background of the same period

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		
CO2		X	X		X

CO3	X		X		X
CO4		X	X		X
CO5			X		X

After completing the course AMERICAN LITERATURE - I, the students will be able to:

1. Trace the origin and history of American Literature
2. Understand and explain the cultural, political, and stylistic protocols that governed early American literature
3. Analyze the impact of Puritanism and significance of Transcendentalism using prescribed texts
4. Assess thematic aspects of literary texts as a part of cultural and historical movements in America
5. Write essays comparing the historical background with thematic analysis

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X			X
CO2		X	X		X
CO3			X		X
CO4		X	X		X
CO5		X	X		X

After completing the course ASPECTS OF ENGLISH LANGUAGE-II,the students will be able to:

1. Use English with an understanding of the sounds present in the language
2. Use English words with a thorough understanding of their structure and meaning
3. Analyze language with respect to morphology and make tree diagrams
4. Understand in detail the different types of meanings.
5. Articulate words efficiently with proper stress and intonation.

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	
CO2	X			X	
CO3	X			X	

CO4	X			X	
CO5	X			X	

After completing the course BACKGROUND TO EUROPEAN AND AMERICAN LITERATURE,the students will be able to:

1. Identify and define basic terms and concepts which are needed for advanced courses in European and American literature
2. Write brief essays on the historical background of European and American literatures
3. Analyse the distinct periods of European and American history.
4. Understand the culture and background of American history in detail.

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X		X
CO2	X	X			X
CO3		X			X
CO4		X			X

After completing the course AMERICAN LITERATURE - II, the students will be able to:

1. Evaluate new forms of space, identity, and writing that transformed canonical American literary structures.
2. Assess thematic aspects of literary texts as a part of cultural movements in America.'
3. Write essays relating historical background with themes of the texts.
4. Compare and contrast themes as incorporated by different American writers.
5. Analyze and interpret seminal poetry of the period with close reading

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X		X
CO2		X	X		X
CO3			X		X
CO4			X		X
CO5			X		X

After completing the course WORLD CLASSICS IN TRANSLATION, the students will be able to:

1. Possess an understanding of well known world classics
2. Acquire historical and cultural knowledge of the past through close reading of the texts
3. Develop critical thinking by getting exposed to original ideas and philosophies
4. Write about early literature, writers and their literary styles

5. Write comparative essays on cultural, thematic and historical analysis of the texts

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		X
CO2			X		X
CO3			X		X
CO4	X		X		X
CO5	X	X	X		X

After completing the course ASPECTS OF ENGLISH LANGUAGE-III,the students will be able to:

1. Use English with a thorough understanding of the different ways in which English is used in India
2. Comprehend and respond to American and British English
3. Use their writing skills to produce good write ups
4. Communicate with ease through mails, blogs and micro blogs.

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				X
CO2	X			X	X
CO3	X			X	
CO4	X			X	

After completing the course INTRODUCTION TO LITERARY THEORY AND CRITICISM,the students will be able to:

1. Remember the critical thinkers or philosophers and their seminal works
2. Understand the significance of major critical theories
3. Analyze the themes and structure of literary works
4. Examine dominant ideologies in a literary work
5. Evaluate a literary work using a theoretical framework

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	X
CO2	X			X	X
CO3	X		X	X	

CO4	X		X		X
CO5	X		X	X	X

After completing the course INTRODUCTION TO JOURNALISM,the students will be able to:

1. Trace the history of journalism in India and discuss the aspects of Press and its governing principles
2. Assess the various components of a newspaper
3. Analyze the importance of news agencies, advertisements, Photographic Journalism, and News Media
4. Evaluate the elements of reporting in the print, radio, television, and online platforms
5. Utilize their content writing, editing, and proof reading skills for freelanceemployment

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X			X	
CO2	X			X	
CO3	X			X	
CO4	X			X	
CO5	X			X	

After completing the course POSTCOLONIAL LITERATURES IN ENGLISH,the students will be able to:

1. Define the problems and consequences of colonization
2. Identify key authors, and literary forms in postcolonial literature
3. Understand how ancestry, race, class, gender, history, and identity are presented in the literary texts
4. Examine the use of English language by the colonized to express their experiences and the emergence of ‘Englishes’
5. Think critically about the contexts of exploration and colonialism in relation to postcolonial societies

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		X
CO2		X	X		
CO3		X	X		X

CO4	X		X		X
CO5		X	X		X

After completing the course CONTEMPORARY LITERATURE,the students will be able to:

1. Examine the representation of contemporary trends, thematic concerns and innovations in genres
2. Identify key concepts like, multiculturalism, globalization, acculturation, displacement, alienation and identity crisis in contemporary texts post World War II
3. Categorize major streams of thought, literary styles and issues that dominate the world
4. Analyze the inter-connectedness of human experiences with a developed understanding of their social, cultural and aesthetic contexts.

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1			X		X
CO2		X	X		X
CO3		X	X		X
CO4		X			X

After completing the course INDIAN LITERATURES IN ENGLISH,the students will be able to:

1. Remember the background of Indian literary tradition and the significance of Indian aesthetics
2. Understand the characteristic features of Regional Indian Literature in translation
3. Develop a basic perception about the difficulties, possibilities, and challenges in translating a text
4. Analyze the regional elements in the prescribed texts
5. Evaluate the skills involved in translation of regional Indian literature into English

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X		X
CO2		X	X		
CO3	X	X	X		X
CO4		X	X		X

CO5		X	X		

After completing the course WOMEN'S WRITING,the students will be able to:

1 Understand the impact of patriarchy on women and become sensitized to the need for gender equality
2. Distinguish women's writing as one shaped by their gender experiences
3. Identify genres and narrative strategies employed by different women writers and the language used
4. Gain an understanding from the themes of suppression, oppression and marginalization expressed by women writers across the world and gauge its effect in changing the social construct
5. Analyse literary texts through the perspective of gender.

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		X
CO2		X	X		X
CO3			X		X
CO4		X	X		X
CO5		X	X		

After completing the course INTRODUCTION TO TRANSLATION STUDIES,the students will be able to:

1. Trace the history and evolution of translation studies
2. Understand the complex concepts and issues in translation
3. Apply the theoretical concepts in analyzing translated texts
4. Make a comparative study of the two prominent translations of Thirukkural at the linguistic level
5. Evaluate the process of translation using the prescribed texts

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		X
CO2			X		
CO3			X		X
CO4	X		X		X

CO5			X		X

BSW - SOCIAL WORK

UNIVERSITY OF MADRAS
HINDUSTAN COLLEGE OF ARTS AND SCIENCE
DEPARTMENT OF SOCIAL WORK

Programme Outcome

PO1: To recognize the spirit of Social Work Profession and thereby demonstrate the core competence needed for the same.

PO2 : To devise intervention methodologies as demanded by the needs of Individual , Group and Community.

PO3 : To solve psycho social problems through tools and techniques formulated in accordance with the intrinsic nature of the individual.

PO4 : To collaborate with multi level agencies on various social welfare projects.

PO5: To discover maladaptive behaviours and initiate corrective measures in field work settings.

Programme Specific Outcome

PO 1 : To memorize the principles of Social Work profession and implement the same in the concerned profession.

PO 2: To define the methods of social work such as casework, group work, community organisation, social action and social work research.

PO 3 : To summarize the models of casework , group work and Community Organisation.

PO 4: To help students develop knowledge, skills, attitudes and values appropriate to the practices of social work profession.

PO 5: To facilitate interdisciplinary approach for better understanding of social problems, situations and issues of development.

SEMESTER – I

SOCIAL WORK PROFESSION- HISTORY AND PHILOSOPHY

After completing the course , students will able to

CO 1 : To identify the meaning and definition of social work as a profession.

CO2 : To recognize the belief and values of social work profession.

CO3 : To interpret the historical evolution of Social Work as a profession.

CO4 : To explain the various concepts such as social security, social welfare and social policy.

CO5 : To choose the relavant models of social work as per the context of the social work setting.

CO – PO Mapping

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X	X	X
CO3	X	X			X
CO4	X				
CO5	X			X	

SOCIOLOGY FOR SOCIAL WORK

After the completion of the course, the students will be able to

CO 1 : To evaluate the relevance of social organisation in its present day context.

CO2 : To describe the functions of social processes

Co3 : To state the changing patterns of stratification in the society.

Co4 : To interpret the meaning and type of family. Kinship etc.

Co5: To paraphrase the nature and factors of social change.

CO – PO Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2		X			
CO3				X	
CO4					X
CO5		X			

CHILD RIGHTS

After the completion of the course, the students will be able to

Co 1 : To discuss the role and position of a child in Indian society.

Co2 : To describe the social exploitation and oppression of children in India.

Co3 : To illustrate the Governmental and Non governmental services for promotion of education amongst children

Co4 : To relate the commonality in terms of provisions and practice with reference to UN Charter and the Constitution of India.

Co5 : To estimate the Governmental and Non governmental programmes for children in India.

CO – PO Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X		
CO3				X	
CO4		X			
CO5					X

MIGRATION ISSUES AND HUMAN SECURITY

After the completion of this course, students will be able to

Course Outcome

CO1 : To examine the types and issues of migration in India.

CO2 : To describe the push and pull factors and other patterns of Migration.

CO3 : To illustrate the socio cultural implications of globalisation in India.

\CO4 : To analyse the International Migration Policies and the role and functions of Ministry of Overseas Affairs.

CO5 : To evaluate the multi lateral protection and migration issues.

CO – PO Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2		X			
CO3			X		
CO4				X	
CO5					X

SOCIAL WORK IN THE UNORGANISED SECTOR

After the completion of the course, the students will be able to

CO1 : To state the extent and nature of unorganized workers in urban and rural India.

CO2 :To explain the problem of unorganized worker, nature of work and services available for these groups.

CO3 : To illustrate skills for intervention and working with the workers of the unorganized sector.

CO4 : To assess National Child policy and NREG ACT 2005.

CO5 : To recommend the methods and principles of unorganized sector.

CO – PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2		X			
CO3				X	
CO4			X		
CO5					X

YOUTH WORK

After the completion of this course, the students will be able to

COURSE OUTCOME

Co 1 : To define the concept of youth, their specific needs and problems in a rapidly changing society.

Co2 : To explain the overview various services provided for student and non – student youth and the plan approaches and programmes for youth welfare.

Co3 : To illustrate the role of youth in development and the role of social workers for the development of youth.

Co4 : To analyse the Inter generational conflict and Youth unrest.

Co5 : To evaluate the performance of Central and State Governments interms of Youth welfare.

CO – PO Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2		X			
CO3				X	
CO4			X		
CO5					X

SEMESTER II

SOCIAL WORK PRACTICE WITH INDIVIDUALS

After the completion of this course, the students will be able to

Co1 : To examine the social case work method and its application in practice.

Co2 : To interpret the theoretical knowledge for work with individuals & families.

Co3 : To analyse the development and preventive goals in working with individuals and families.

Co4 : To apprise the learner with skills & techniques necessary for working with Individuals & Families

Co5: To evaluate Self awareness and ability in working with client system.

CO – PO Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	**X**				
CO2		**X**			
CO3			**x**		
CO4		**x**			
CO5				**x**	

PSYCHOLOGY I
HUMAN GROWTH AND DEVELOPMENT

After the completion of this course, the students will be abe to

Co1 : To recognize the overall understanding of the principles of growths and their relevance and application to behavior.

Co2 : To describe the twin roles of individual's heritage and environmental influences in growth and development.

Co3 : To illustrate interactional nature of growth and behavior at various stages in the life span - Infancy, childhood, adolescence, youth, adulthood and old age and impact of cultural factors.

Co4 : To assess the sensitivity towards needs developmental tasks and health status and need for developmental programs for the same.

Co5 : To apprise changes in motor and mental ability, vocational adjustments and hazards.

CO – PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2		X			
CO3			X		
CO4			X	X	
CO5					X

UNSYSTEMS FOR DEVELOPMENT AND SOCIAL CHANGE

After the completion of the course, the students will be able to

Co1 : To identify the UN systems and frameworks for development

Co2 : To discuss the current UN documents, treaties and policies for development

Co3 : To analyse the functioning and achievements of the UN Systems

Co4 : To evaluate the functions of United Nations Fund For Population Activities (UNFPA), Office of the United Nations High Commissioner for Refugees (UNHCR), United Nations Human Settlements Programme (UN – HABITAT)

Co 5 : To estimate the functions of the Office of the United Nations High Commissioner for Human Rights (OHCHR), Joint United Nations Programme on HIV/AIDS (UNAIDS).

CO – PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2		X			
CO3			X		
CO4			X	X	
CO5					X

SOCIAL WORK AND PERSONS WITH DISABILITY

After the completion of this course, students will be able to

Co1 : To describe the needs and problems of persons with disability.

Co2 : To explain policies, programmes and services available to persons with Disability.

Co3 : To discuss opportunities for social work intervention to the persons with Disability

Co4 : To illustrate the efforts by International organizations for prevention, welfare & rehabilitation of disabled

Co5 : To assess The Person with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995.

CO – PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2		X			
CO3			X		
CO4			X		x
CO5					X

MARRIAGE AND FAMILY LIFE EDUCATION

After the completion of this course, the students will be able to

Co1 : To define a meaningful understanding of family life, marriage and responsible Parenthood.

Co2 : To explain the students to acquire the skills necessary to develop and maintain Satisfying and stable relationship.

Co3 : To illustrate knowledge on the services available for the welfare of the family.

Co4 : To analyse determinants sexuality and sex education.

Co5 : To evaluate factors contributing to family organization / disorganization.

CO – PO Mapping

CO –PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X		
CO3		X			
CO4			X		
CO5					X

DEVELOPMENT PLANNING

After the completion of the course, the students will be able to

Course Outcome

Co1 : To describe theoretical understanding of development and planning.

Co 2: To interpret students to gain an understanding of the administrative machinery involved in development.

Co3 : To relate Knowledge on various methods, strategies and development efforts.

Co4 : To analyse the role and contribution of professional social work in the Development process

Co5 : To evaluate the role of NGO in rural and urban development.

CO – PO Mapping

CO –PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X		
CO3		X			
CO4			X		
CO5					X

SOCIAL WORK PRACTICE WITH GROUPS

After the completion of this course, the students will be able to

Course Outcome

CO 1 : To state the knowledge of the objectives, characteristics values of working with groups.

Co2 : To describe the significance of the methods and their uses in the Indian context and equipping students with a broad range of skills in social work practice.

Co3 : To apply the necessary skills to the methods of working with groups.

Co4 : To analyse the various stages of group development…

Co5 : To evaluate the role of group worker in different settings.

CO – PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X		
CO3		X			
CO4			X		
CO5					X

PSYCHOLOGY II
HUMAN BEHAVIOUR

After the completion of this course, the students will be able to

Course Outcome

Co1 : To define the basic concepts of human behavior.

Co2 :To interpret the psychological base of human behavior.

Co3 :To illustarte an insight on the individuals to become an effective social worker.

Co4 : To analyse the concept of adjustment and maladjustment.

Co5 : To evaluate Community Mental Health Programme.

CO – PO Mapping

CO –PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X		
CO3		X			
CO4				X	
CO5					X

SEMESTER IV
CORE PAPER – VII
SOCIAL WORK PRACTICE WITH COMMUNITIES AND SOCIAL ACTION

After the completion of this course, the students will be able to

Course Outcome

Co1 : To examine the community as a method, its specific approaches and models
Co2 :To explain the ability to utilize appropriate approaches and skills to work with communities
Co3 : To illustrate sensitivity and commitment towards issues of marginalized and oppressed groups.
Co4 : To analyse the social action models.
Co5 : To evaluate community organization in Health, Family and Child development.

CO – PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X		
CO3		X			
CO4				X	
CO5					X

ALLIED PAPER – IV
ECONOMIC AND POLITICAL SYSTEMS AND PROCESSES

After the completion of this course, the students will be able to

Course Outcome

Co1 : To define the importance of economics and politics for social work.

Co2 : To explain the Indian political and economic system and be able to examine problem situations in the field.

Co3 : To illustrate the skills in analyzing the political & economic processes in the context of development/under development.

Co4 : To analyse the performance of Five Year Plans in India and to realize the significance of economic & political aspects of planning.

Co5 : To evaluate functional analysis of economic and political policies.

CO – PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2			X		
CO3		X			
CO4				X	
CO5	X				

SEMESTER V

CORE PAPER – IX

SOCIAL WELFARE ADMINISTRATION

After the completion of this course, the students will be able to

Course Outcome

Co 1: To describe an understanding of the administration process in the agency in the total frame of social work practice.

Co2 : To interpret the ability to apply the basic principles of social work to administration of social welfare and development agencies.

Co3 :To analyse the knowledge and skills of the basic components of the administrative and organization process.

Co4 : To apprise an understanding of the procedures related to establishment and management of social welfare organization/agencies governmental and non-governmental.

Co5 : To apprise the current relevance of Human Resource Development.

CO – PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	X				

CO2			**X**		
CO3		**X**			
CO4				**X**	
CO5					**X**

GENERALIST PRACTICE OF SOCIAL WORK

After the completion of this course, the students will be able to

CO 1 : To define Generalist practice as a method of social work

CO 2: To explain students to hava a holistic perspective in social work practice.

CO 3: To illustrate the students with knowledge and skills in the Integrated Method of Social Work Practice .

Co4 : To assess the environmental change.

Co5 : To evaluate the components of termination

CO – PO Mapping

CO -PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**X**				
CO2		**X**			
CO3			**X**		
CO4				**X**	
CO5					**X**

SOCIAL WORK RESEARCH AND STATISTICS

After the completion of this course, the students will be able to

Course Outcome

Co1 : To describe an understanding of the nature, purpose and importance of social work research

Co2 : To interpret a problem, analyse and assess social problems and needs at the micro-level

Co3: To demonstrate research skills in conducting research by developing ability to prepare appropriate tools and collect, analyse and interpret data through appropriate tables.

Co4 : To analyse the presentation of data.

Co5 : To apprise the need and importance of statistics in Research.

CO PO Mapping

CO -PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**X**				

CO2		**X**			
CO3			**X**		
CO4				**X**	
CO5					**X**

SOCIAL DEVELOPMENT, POLICIES AND LEGISLATIONS

After the completion of this course, the students will be able to
Course Outcome
Co1 : To examine policy analysis and the policy formulation process.
Co2 : To explain critical analysis of social policies and development plans.
Co3 : To illustrate social policies, plans & programmes so as to be able to interpret, enforce & challenge them.
Co4 : To assess the process and problems of public interest litigation and legal aid to marginalize.
Co5: To evaluate the relevance of social legislations in India.

CO PO Mapping

CO -PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**X**				
CO2		**X**			
CO3			**X**		
CO4				**X**	
CO5					**X**

HUMAN RIGHTS AND SOCIAL JUSTICE

Co1 : To define Human Rights.
Co2: To describe self awareness & skills of Human Rights in working social issues.
Co3 : To illustrate the information of Human Rights in Social work practice in general to individual, groups & communities.
Co4 : To analyse Human Rights movements for sensitization of social problems/issues.
Co5 : To evaluate the role of social work in relation to human rights.

CO PO Mapping

CO -PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**X**				
CO2		**X**			

CO3			**X**		**X**
CO4		**X**			
CO5				**X**	

WOMEN DEVELOPMENT- ISSUES AND CONCERNS

Co1 : To identify the condition of Indian women.
Co2 : To explain the critical analysis of women problems in Indian scenario.
Co3 : To demonstrate support to women movement for sensitization of women problems.
Co4 : To analyse assumptions, ideals, values about socio-cultural changes of women.
Co5 : To apprise student to acquired knowledge of the status of women in India Society.

CO PO Mapping

CO –PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**X**				
CO2		**X**			
CO3			**X**		**X**
CO4		**X**			
CO5				**X**	

HEALTH CARE

After completion of the course, students will be able to

Co1 : To define the concept and dimensions of health – physical, social, environmental and mental health.
Co2 : To explain the student an insight into etiology, symptoms, treatment and prevention of communicable disease, non-communicable diseases, deficiency diseases and physical handicaps.
Co3 : To illustrate indigenous systems and their influence on holistic health
Co4 : To analyse the student understand the role of the government in the health issues
Co5 : To evaluate Health Care services in India.

CO PO Mapping

CO –PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**X**				
CO2		**X**			

CO3			**X**		**X**
CO4		**X**			
CO5				**X**	

DISASTER PREPAREDNESS AND RISK REDUCTION

After completion of this course, the students will be able to

Course Outcome

Co1 : To state the understanding of ecological balance and imbalance.
Co2 : To explain the process of Disaster Management.
Co3 : To illustrate Disaster Management Framework in India.
Co4 : To assess the role of social worker in Disaster Management.
Co5 : To evaluate the Legislations enacted for Disaster Management in India.

CO – PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	**X**				
CO2		**X**			
CO3			**X**		**X**
CO4		**X**			
CO5				**X**	

SOCIAL ENTERPRISE MANAGEMENT

After completion of this course, the students will be able to
Course Outcome
Co1 : To identify the emergence of the third sector.
Co2 : To explain the role of Social entrepreneur.
Co3 : To illustrate the steps involved in Social Enterprise Management.
Co4 : To analyse Tamil Nadu Societies Registration Act, 1975, Introduction to Foreign Contribution (Regulation) Act, 2010.
Co5 : To evalauate the approaches and methods of Social Enterprise.

CO PO Mapping

CO -PO	PO1	PO2	PO3	PO4	PO5
CO1	**X**				
CO2		**X**			

CO3			**X**		**X**
CO4		**X**			
CO5					**X**

CONFLICT AND PEACE BUILDING

Course Outcome

Co1 : To define religious fanaticism, tolerance and fundamentalism

Co2 : To explain the structural violence in Indian society.

Co3 : To illustrate the working of right based approach.

Co4 : To analyse the role of civil society .

Co5 : To evaluate the performance of International peace agaencies**.**

CO – PO Mapping

CO -PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**X**				
CO2		**X**			
CO3			**X**		**X**
CO4		**X**			
CO5					**X**

M.Sc. INFORMATION TECHNOLOGY

UNIVERSITY OF MADRAS

M.Sc. INFORMATION TECHNOLOGY

SYLLABUS 2021-2022

Programme Outcome:

PO1: Apply the knowledge of mathematics, science and computing in the core information technologies.

PO2: Identify, design, and analyze complex computer systems and implement and interpret the results from those systems

PO3: Design, implement and evaluate a computer-based system, or process component, to meet the desired needs within the realistic constraints such as economic, environmental, social, political, ethical, health, Safety, and sustainability.

PO4: Select and apply current techniques, skills, and tools necessary for computing practice and integrate IT-based solutions into the user environment effectively.

PO5: Analyze the local and global impact of computing on individuals, organizations, and society.

PO6: Apply ethical principles and responsibilities during professional practice.

PO7: Function effectively as a team member or a leader to accomplish a common goal in a multidisciplinary team.

PO8: Communicate effectively with a range of audiences using a range of modalities including written, oral and graphical.

Programme Specific Outcome

PSO1 : To apply knowledge of recent computing technologies, skills and current tools of Information technology

PSO2 : To design and conduct experiments, as well as to analyze and interpret data.

PSO3 : To Understand the contemporary research issues in the different areas of computer science

PSO4: To explore research gaps, analyze and carry out research in the specialized/emerging areas.

PSO5: To design software systems, components or processes to meet identified needs within economic, environmental and social constraints.

PSO6: To express/present ideas in an impressive and professional manner.

PSO7: To recognize the need to engage in lifelong learning through continuing education and research

PSO8: To work in multidisciplinary and multicultural environment, become entrepreneur based upon societal needs, understanding of professional, social and ethical responsibilities.

COURSE OUTCOME

After completing the course C++ and Data Structures , the students will be able:

1. Understand the concept of Dynamic memory management, data types, algorithms, Big O notation.
2. Understand basic data structures such as arrays, linked lists, stacks and queues.

3. Describe the hash function and concepts of collision and its resolution methods Solve problem involving graphs, trees and heaps
4. Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							
CO2		X		X				
CO3			X	X	X			
CO4						X	X	X

After completing the course Computer Architecture , the students will be able:

1. Explain the organization of basic computer , its design and the design of control unit.
2. Demonstrate the working of central processing unit and RISC and CISC Architecture.
3. Describe the operations and language f the register transfer, micro operations and input-output organization.
4. Understand the organization of memory and memory management hardware. Elaborate advanced concepts of computer architecture, Parallel Processing, interprocessor communication and synchronization

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1		X						X
CO2			X		X			
CO3	X	X					X	
CO4				X		X		

After completing the course Database Management System, the students will be able:

1. Describe the fundamental elements of relational database management systems Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL
2. Design ER-models to represent simple database application scenarios
3. Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.
4. Improve the database design by normalization.
5. Familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B tree, and hashing.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8

CO1		X						X
CO2		X					X	
CO3			X	X				
CO4			X			X		
CO5				X				

After completing the course Visual Programming, the students will be able:

1. Demonstrate fundamental skills in utilizing the tools of a visual environment such as command, menus and toolbars.
2. Implement SDI and MDI applications using forms, dialogs, and other types of GUI components.
3. Understand the connectivity between VB with MS-ACCESS, ORACLE and SQL and SQL database
4. Implement the methods and techniques to develop projects.

CO-PO MAPPING

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1		X			X			
CO2			X					
CO3				X				
CO4		X		X			X	X

After completing the course Operating Systems, the students will be able:

1. To understand the design of control unit.
2. Understanding CPU Scheduling, Synchronization, Deadlock Handling and Comparing CPU Scheduling Algorithms.
3. Solve Deadlock Detection Problems. Describe the role of paging, segmentation and virtual memory in operating systems.
4. Description of protection and security and also the Comparison of UNIX and Windows based OS.
5. Defining I/O systems, Device Management Policies and Secondary Storage Structure and Evaluation of various Disk Scheduling Algorithms.

CO-PO MAPPING

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1		X			X			
CO2			X					
CO3				X				
CO4		X		X			X	X

After completing the course Operating Systems, the students will be able:

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	X						
CO2	X	X						
CO3			X	X				
CO4				X	X			
CO5						X	X	X

After completing the course Programming in JAVA, the students will be able:

1. Use the syntax and semantics of java programming language and basic concepts of OOP.
2. Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.
3. Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.
4. Design event driven GUI and web related applications which mimic the real word scenarios.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	X						
CO2			X					
CO3				X				
CO4				X		X	X	X

After completing the course Data Warehousing and Data mining, the students will be able:

1. Understand the functionality of the various data mining and data warehousing component
2. Appreciate the strengths and limitations of various data mining and data warehousing models
3. Explain the analyzing techniques of various data
4. Describe different methodologies used in data mining and data ware housing.
5. Compare different approaches of data ware housing and data mining with various technologies

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							

CO2			X	X				
CO3					X		X	X
CO4		X		X				
CO5				X		X		

After completing the course <u>Internet Technologies</u>, the students will be able:

1. To Understand the basic concepts and applications of the Internet and World Wide Web.
2. Apply relevant Internet knowledge to enhance their understanding of other networking situations.
3. Use current Internet Technology necessary for daily life application.
4. To design web applications

CO-PO MAPPING

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	X	X						
CO2				X			X	X
CO3					X	X		
CO4			X					

After completing the course <u>Computer Networks</u>, the students will be able:

1. Understand basic computer network technology.
2. Identify the different types of network topologies and protocols.
3. Enumerate the layers of the OSI model and TCP/IP.
4. Identify the different types of network devices and their functions within a network
5. Understand and building the skills of sub-netting and routing mechanisms.

CO-PO MAPPING

PO/CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	X							
CO2		X						X
CO3			X	X				
CO4		X					X	
CO5		X				X		

After completing the course <u>Design and Analysis of Algorithms</u>, the students will be able:

1. Able to Argue the correctness of algorithms using inductive proofs and Analyze worst-case running times of algorithms using asymptotic analysis.

2. Able to explain important algorithmic design paradigms (divide-and-conquer, greedy method, dynamic-programming and Backtracking) and apply when an algorithmic design situation calls for it.
3. Able to Explain the major graph algorithms and Employ graphs to model engineering problems, when appropriate.
4. Able to Compare between different data structures and pick an appropriate data structure for a design situation.
5. Able to Describe the classes P, NP, and NPComplete and be able to prove that a certain problem is NP-Complete

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							
CO2		X						
CO3			X		X		X	
CO4				X		X		
CO5				X				X

After completing the course Advanced Java Programming, the students will be able:

1. Develop program using event handling.
2. Use network concepts (client/server, socket) in the program.
3. Develop program using JDBC connectivity to access data from database and execute different queries to get required result.
4. Develop web-based program using servlet and JSP

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							
CO2		X						
CO3		X	X					
CO4		X	X	X	X			
CO5		X				X	X	X

After completing the course Information Security, the students will be able:

1. Explain various Information security threat and controls for it.
2. Analyze a security incidents and design countermeasures.
3. Explain information security incident response.

4. Apply the techniques of Common Key cryptography and Public Key cryptography.
5. Explain the mechanism to protect confidentiality and completeness of data

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							
CO2		X			X			
CO3			X					
CO4				X		X		
CO5							X	X

After completing the course Mobile Computing, the students will be able:

1. Explain the basics of mobile Computing
2. Describe the functionality of Mobile IP and Transport Layer
3. Classify different types of mobile telecommunication systems
4. Demonstrate the Adhoc networks concepts and its routing protocols
5. Make use of mobile operating systems in developing mobile applications.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							
CO2		X						
CO3				X	X			
CO4			X			X		
CO5						X	X	X

M.Sc. DEGREE COURSE IN COMPUTER SCIENCE

M.Sc. DEGREE COURSE IN COMPUTER SCIENCE
Program Outcome

PO1: Be technology-oriented with the knowledge and ability to develop creative solutions, and better understand the effects of future developments of computer systems and technology on people and society.
PO2: Get some development experience within a specific field of Computer Science, through project work.
PO3: Get ability to apply knowledge of Computer Science to the real-world issues.
PO4: Be familiar with current research within various fields of Computer Science.
PO5: Use creativity, critical thinking, analysis and research skill.
PO6: Learn new technology, grasping the concepts and issues behind its use and the use of computers.
PO7: Build up programming, analytical and logical thinking abilities.
PO8: Be able to understand the role of Computer Science in solving real time problems in society.

Program Specific Outcome

PSO1: Enrich the knowledge in the areas like Artificial Intelligence, Web Services, Cloud Computing, Paradigm of Programming language, Design and Analysis of Algorithms, Database Technologies Advanced Operating System, Mobile Technologies, Software Project Management and core computing subjects.
PSO2: Students understand all dimensions of the concepts of software application and projects.
PSO3: Students understand the computer subjects with demonstration of all programming and theoretical concepts with the use of ICT.
PSO4: Developed in-house applications in terms of projects.
PSO5: Interact with IT experts & knowledge by IT visits.
PS06: Get industrial exposure through the 6 months project in IT industry.
PS07: To make them employable according to current demand of IT Industry and responsible citizen.
PS08: Aware them to publish their work in reputed journals.

After completing the course <u>Design and Analysis of Algorithms</u>, the students will be able:
COURSE OUTCOME:

1. To understand the correctness of algorithms using inductive proofs and Analyze worst-case running times of algorithms using asymptotic analysis.
2. To explain important algorithmic design paradigms (divide-and-conquer, greedy method, dynamic-programming and Backtracking) and apply when an algorithmic design situation calls for it.

3. To Explain the major graph algorithms and Employ graphs to model engineering problems, when appropriate.
4. To Compare between different data structures and pick an appropriate data structure for a design situation.
5. To Describe the classes P, NP, and NPComplete and be able to prove that a certain problem is NP-Complete

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	X						X
CO2			X					
CO3			X	X				
CO4					X			
CO5						X	X	X

After completing the course <u>Java Programming</u>, the students will be able:

1. To design GUI using AWT
2. To develop program using event handling.
3. To use network concepts (client/server, socket) in the program.
4. To develop program using JDBC connectivity to access data from database and execute different queries to get required result.
5. To develop web-based program using servlet and JSP

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	X				X		
CO2	X							
CO3				X				
CO4		X	X		X		X	
CO5	X							X

After completing the course <u>System software</u>, the students will be able:

COURSE OUTCOME:

1. To understand the basics of system programs like editors, compiler, assembler, linker, loader, interpreter and debugger.
2. To Describe the various concepts of assemblers and macroprocessors.
3. To understand the various phases of compiler and compare its working with assembler.
4. To understand how linker and loader create an executable program from an object module created by assembler and compiler.
5. To know various editors and debugging techniques

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							X
CO2		X	X					
CO3	X			X				X
CO4	X			X	X			X
CO5						X	X	

After completing the course Theoretical Foundations of Computer Science, the students will be able:

COURSE OUTCOME:

1. To analyze language-recognition and generation-problems through the powers and limitations of abstract formal models of computation (regularity, contextfreedom, recursive enumerability), and identify possible machine and/or grammar constructions for the languages
2. To identify and implement possible machine and/or grammar constructions for language-recognition and generation-problems with resource-restrictions: determinism/nondeterminism, "normal-form" machines/grammars, variants of machines/computation models
3. To Construct machines and/or grammars for language-recognition and generation-problems follow general programming paradigms such as semantics of states/variables, recursion/induction/iteration-loops, and divide/conquer.
4. To understand the limitations of the abstract formal models of computation are studied through contradictory arguments (pumping lemmas), closure properties, and diagonalization argument.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	X						
CO2		X	X					
CO3				X	X	X		
CO4							X	X

After completing the course Computer Networks, the students will be able to:

COURSE OUTCOME:

1. Understand basic computer network technology.
2. Identify the different types of network topologies and protocols.
3. Enumerate the layers of the OSI model and TCP/IP.
4. Identify the different types of network devices and their functions within a network
5. Understand and building the skills of subnetting and routing mechanisms.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							
CO2	X			X				
CO3			X	X				
CO4					X		X	
CO5	X	X						X

After completing the course Digital Image Processing, the students will be able to:

COURSE OUTCOME:

1. Review the fundamental concepts of a digital image processing system.
2. Analyze images in the frequency domain using various transforms.
3. Evaluate the techniques for image enhancement and image restoration.
4. Categorize various compression techniques.
5. Interpret Image compression and image segmentation standards.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X				X			
CO2			X					
CO3		X		X				
CO4						X	X	
CO5								X

After completing the course Object Oriented Analysis and Design, the students will be able to:

COURSE OUTCOME:

1. Explain OOAD concepts and various UML diagrams
2. Select an appropriate design pattern
3. Illustrate about domain models and conceptual classes
4. Compare and contrast various testing techniques
5. Construct projects using UML diagrams

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	X						
CO2		X						
CO3			X	X		X		
CO4					X	X		
CO5							X	X

After completing the course Principles of Compiler Design, the students will be able to:

COURSE OUTCOME:

1. Understand the major phases of compilation and to understand the knowledge of Lex tool & YAAC tool Develop the parsers and experiment the knowledge of different parsers design without automated tools
2. Construct the intermediate code representations and generation
3. Convert source code for a novel language into machine code for a novel computer
4. Apply for various optimization techniques for dataflow analysis

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X						X	X
CO2		X	X					
CO3			X	X				
CO4					X	X		

After completing the course <u>Information Security</u>, the students will be able to:

COURSE OUTCOME:

1. Explain various Information security threat and controls for it.
2. Analyze a security incidents and design countermeasures.
3. Explain information security incident response.
4. Apply the techniques of Common Key cryptography and Public Key cryptography.
5. Explain the mechanism to protect confidentiality and completeness of data.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							X
CO2			X		X			
CO3				X		X		
CO4							X	
CO5	X					X	X	

After completing the course <u>Artificial Intelligence</u>, the students will be able to:

COURSE OUTCOME:

1. Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its

foundations

2. Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.
3. Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.
4. Demonstrate proficiency developing applications in an 'AI language', expert system shell, or data mining tool.
5. Demonstrate an ability to share in discussions of AI, its current scope and limitations, and societal implications

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X			X				
CO2			X		X			
CO3		X			X			X
CO4		X				X	X	
CO5						X	X	

After completing the course <u>Mobile Computing</u>, the students will be able to:

COURSE OUTCOME:

1. Explain the basics of mobile Computing
2. Describe the functionality of Mobile IP and Transport Layer
3. Classify different types of mobile telecommunication systems
4. Demonstrate the Adhoc networks concepts and its routing protocols
5. Make use of mobile operating systems in developing mobile applications

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	X						
CO2		X		X				
CO3				X	X			
CO4						X	X	
CO5		X						X

After completing the course <u>Cryptography</u>, the students will be able to:

COURSE OUTCOME:

1. Apply the fundamental concepts of cryptography

2. Describe the difference between symmetric and asymmetric cryptography
3. Identify processes to support secure protocols
4. Describe the process for implementing cryptographic systems
5. Define key management and public key concepts

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X		X					
CO2		X				X		
CO3				X	X			
CO4		X						
CO5							X	X

After completing the course Multimedia Systems, the students will be able to:
COURSE OUTCOME:

1. Describe the types of media and define multimedia system.
2. Describe the process of digitizing (quantization) of different analog signals (text, graphics, sound and video).
3. Use and apply tools for image processing, video, sound and animation.
4. Apply methodology to develop a multimedia system.
5. Apply acquired knowledge in the field of multimedia in practice and independently continue to expand knowledge in this field.

CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X							X
CO2	X			X				
CO3		X	X		X			
CO4			X			X	X	
CO5							X	X

MSW – Social Work

UNIVERSITY OF MADRAS
MASTER OF SOCIAL WORK
REVISED REGULATIONS(w.e.f. 2022-2023)

Programme Outcome

1. The programme will make the students to become highly capable and an efficient social work professional in all the fields of social work such as Medical, Psychiatric, Child Welfare Guidance, Geriatric, Health, Correctional, Family, Youth, Labour Welfare and Rural development, etc.

2. The programme will train and enrich the students with high scientific skills and techniques to deal with social issues and its problems.

3. The concepts, methods and techniques of social work will train the students in following its principles and practice it in various fields, thus creating a better society.

4. The programme is designed to make the students become well aware about the social work professional code of ethics which is followed in the social work settings.

5. It makes the students follow a systematic and scientific knowledge of social work philosophy and methods for becoming more professional in the various fields of social work.

6. Social work programme is designed to aid individuals, groups and communities for addressing individuals coping problems, group development and betterment of communities in the society.

7. The programme makes them more responsible in fulfillinghumanitarian needs, solve psycho-social problems and adjust mental problems, thereby making the society more harmonious andunified.

8. It aids the students to become a social change agent for creating a better and cordial social environment.

9. The Social Work programme motivates the students to become a responsible professional social worker and work for the betterment of the individual psychological well-being, group development andcommunity welfare. involve in deep research investigation on any particular social problem and make the society a better place to live in by addressing it.

10. The Social Work programme stimulates the students to engage and involve in deep research investigation on any particular social problem and make the society a better place to live in by addressing it.

Programme Specific Outcome

1. The Master of Social Work programme makes the students to become more knowledgeable and skilful in dealing with human behaviour.

2. The outcome of the programme is to develop the skill of self- examination, critical thinking, analytical thinking, self-awareness, problem solving ability, constructive use of relationships and productive utilization of self.

3. The programme makes the students to become an expert professional, responsible, efficient, effective, practical, logical, and pragmatically experiential in dealing with individuals, groups and community for effective implementation of social work philosophies and its values in the society.

4. The Social worker concentrates more on solving the individuals psycho-social maladjustment problems, effectively motivating the groups to engage in group activity for accomplishing groups desire and needs, and using the resources skilfully for the communities welfare and development.

5. The interest for research is instilled in the mind of social work students to create new theories, ideologies, values, principles and techniques for the upcoming social work professionals to efficiently deal and address the social problems skillfully.

Social Work Profession-History and Philosophy

Course Outcome

1. The students are able to synchronise the theoretical knowledge of social work profession in their actual practical social settings.
2. The students enhance their social work professional perspective to practically implement in their work settings, such as, NGO Hospitals and Factories.
3. The students are enriched with different school of thoughts and ideologies.
4. The students imbibe great ideas from social reformers and their inspirable social movements.
5. The students enhance their philosophical knowledge of social work which motivates them to enlarge their vision and ideology.

CO VS PO

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X				X			X		X
CO 2		X		X		X			X	
CO 3			X		X					X
CO 4							X			
CO 5						X		X		

SOCIAL CASEWORK

Course Outcome

1. The students can use the principles and skills in their daily practice of case work relationship when dealing with the client to solve their psycho-social problems.
2. The students can use the techniques of counselling to fully understand the client's problem in a non-judgemental way to help them for better coping and adjusting with the social environment and human relations.
3. The outcome of the course is to develop the skills of Case worker for better studying about the history of client and their individualistic problems personally in a psycho-social manner.
4. The students come to understand about certain process framed in studying the client's psycho-social personality development for solving their problems.
5. Tools and techniques are used by the Case worker in the social institutional settings like schools, hospitals and communities for building Case worker relationship.

CO VS PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X			X		X		X		X
CO 2		X					X		X	
CO 3			X		X					
CO 4				X			X		X	
CO 5	X	X			X			X		X

SOCIAL GROUP WORK

Course Outcome

1. The students are able to learn the art of engaging the group for accomplishing their goal and motive.
2. The course will make the students to observe each phase of group work process that gives an idea about how the group formation and development occurs in it.
3. The course makes the students efficient in dealing with the group engagement and their motivation for helping them to achieve their group needs and desires.
4. The course enables the students to be an initiator, motivator and enabler for initiating group formation and achieving group objectives and goals.
5. The outcome of the course is to make the students into a capable and efficient social group work professional in conducting group activities.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10

CO 1	X		X	X	X		X	X	X	X
CO 2		X				X				
CO 3	X			X				X	X	X
CO 4		X				X	X			
CO 5	X		X		X			X	X	X

COMMUNITY ORGANIZATION & SOCIAL ACTION

Course Outcome

1. The course will provide knowledge about the community organization and its process that stimulates the student toactively participate in the community emancipation and development
2. The students will come to understand well about the communities characteristics and their livelihood that willenhance them to work for their betterment
3. The students can be able to learn how to approach the community and bring 'we' feeling among them to fulfiltheir basic unmet needs.
4. The course instil more values and principles of community organization among the students for making them a better social worker
5. The course teach different theories on community that make the students to have a holistic perspective towards community.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X	X	X	X	X		X	X
CO 4	X							X		
CO 5			X	X		X		X	X	X

SOCIAL WORK RESEARCH AND STATISTICS

1. The research work has undertaken by students to investigate deep into the topic of the research for finding out a beneficialresult for the development of the society
2. The course will make the students to stimulate curiosity and inquest among them to better understand about the process andsteps of research
3. The research work will help the students to work for the development and betterment of the society and for the growthof the large institutions and esteemed organizations
4. The course enhance the research capacity and deep investigation among the students on various social problemsand its effect in the society
5. The outcome of the course is to know well about the research methodologies and its implications in doing the research activity on various social issue topics

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10

CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X	X	X	X	X		X	X
CO 4	X							X		
CO 5			X	X		X		X	X	X

HUMAN RESOURCE MANAGEMENT – HRM

1. The students improve their skills and abilities by gaining knowledge on human resource development and can practice it in their work settings
2. The students learn how to increase the talents andconcentrate more on the talent development of theemployees.
3. The students bring more growth to their organization by learning about the human resource development conceptsand the expansion of business to other countries.
4. The outcome of the course is to make the students to become well verse in various management principles,techniques and skills for their overall development intheir career.
5. The course provides practical knowledge of HR to students for implementing it during their internship period.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

RURAL COMMUNITY DEVELOPMENT

Course Outcome

1. The course provides knowledge on the rural issues and itsproblems like landlessness, agrarian issues, migration andjoblessness.
2. The concept of rural governance is about the panchayatraj system (local governance) which is described in separate constitutional amendments of Indian Constitution.
3. The students learn about the rural administration and itsdevelopment.
4. The outcome of the course is to make the students more knowledgeable on various government related community development programmes and its impact on the overall development of the rural area.
5. The course make the students to work more efficiently inthe rural community settings.

Co vs Po

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

COMMUNITY HEALTH – MPSW

1. The students gain knowledge about the administration of the basic health facilities in the country.
2. The students become knowledgeable about the social work practice on health and hygiene situation in India.
3. The students enhance their knowledge on the concept of health and hygiene to alleviate the level of diseases in thecountry.
4. The students gain comprehensive and holistic knowledgeon health and hygiene.
5. The students work for the mental well-being of the society.

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

LABOUR LEGISLATIONS – HRM

Course Outcome

1. The students learn about labour legislation which plays a major role in the function of any organization.
2. The knowledge about the functions of labour court, Industrial tribunal and National tribunal increases the awareness of students and aids them to face any litigationclaim for the rights of the organizations.
3. The outcome of the course is to make the students knowledgeable on labour laws and its impact on thefunctions of the organization.
4. The course develops the quality of HR in students for becoming an efficient HR professional in their future career.
5. The course enables the students to develop it during theinternship period and implement the concept of labour legislation in the field work settings.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4										
CO 5	X		X	X		X		X	X	X

URBAN COMMUNITY DEVELOPMENT

Course Outcome

1. The outcome of the course is to make the students aware of the life conditions of urban community and its difference prevailing in the urban societies.
2. The course provides knowledge about the urban community development programmes to the students and makes them to use it for their development.
3. The students learn about the gap between the rich and poor in the urban society which indicates the socio-economic inequity prevailing in the urban community.
4. The outcome of the course is to make the students become knowledgeable on the concept of urbanization
5. The course makes the students aware about the various urban community development programmes

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

Mental Health – MPSW

Course Outcome

1. The students gain knowledge on Emerging researches inMental Health.
2. The students gain knowledge about the various behaviour disordersand childhood disorders.
3. The students enhance their knowledge about mental health disorders and take measures in

creating a healthy society.

4. The students become aware of the concepts of normalcy andabnormal behaviour of people in the society.
5. The students are able to diagnose the disorders by practicing it inthe hospital settings.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

SOCIAL WELFARE ADMINISTRATION

Course Outcome.

1. Gain knowledge about social welfareadministration of serviceorganizations.
2. Understand welfare programmes of the government.
3. Acquire the skill of establishing a human service organization.
4. The students will learn about the welfare of the employees by the labour welfare officer.
5. The knowledge of historical perspective of various organizationsmotivates the students to use it in their working orgnaisations

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

DEVELOPMENT PLANNING

Course Outcome

1. To develop theoretical understanding of development andplanning
2. To enable students to gain an understanding of the administrative machinery involved in development.
3. To provide knowledge on various methods strategies anddevelopment efforts.

4. To understand the role and contribution of professionalsocial worker in the development
5. To make the students to well understand about the concept of participatory planning in panchayat raj institution to work for the welfare and development of therural people.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3			X		X	X	X			X
CO 4	X									
CO 5		X	X	X	X			X	X	X

EMPLOYEE RELATIONS AND WELFARE

1. The students will be more skilled in collective bargaining,conciliation and efficient arbitrator to settle the trade disputes amicably
2. The students gain more knowledge on labour welfare philosophies and work as a labour welfare officer in industrial settings
3. The outcome of the course is to provide knowledge andexposure to industrial relations and its effect on trade unions
4. The course make the students to gain lot more knowledge on the concept of arbitration and settlement of disputes inthe industrial settings
5. Make aware the students about the statutory procedures laid down for settling the industrial disputesthrough conciliation and certain statutory norms.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X			X	X		X	X
CO 2				X				X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5		X		X		X	X	X	X	X

MEDICAL SOCIAL WORK

Course Outcome

1. The Students will develop a deeper understanding of common Physical Diseases and Health problems of theCommunity
2. The Students will gain the capacity to perceive the relationof Environment and Socio Cultural

and Psychological factors in the causation, treatment and prevention of diseases

3. The students can be well able to understand the concepts of role of medical social worker and their immense importanceis needed in the hospital settings
4. The students can adequately work for the mental health ofthe society and make it a mentally happier society
5. The students can well study about the needs and problems of patients in their families and can give effective solutionto their problems.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

ORGANIZATION BEHAVIOUR AND DEVELOPMENT

Course Outcome

1. The students will learn the concepts on organization behaviour and its effect in the growth and development ofthe organization
2. The students gain tremendous knowledge on the theories of organization behaviour and implement the theories in the industrial settings
3. The outcome of the course is to make the students well verse in the OD concepts and its intervention techniques
4. The course make the students to well understand about these concepts for making them a highly efficient professional HR
5. The purpose of the course is to elevate the position ofstudents knowledge to the level of HR professional drastically.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2	X							X		
CO 3		X	X		X	X	X			X
CO 4	X			X						
CO 5			X			X		X	X	X

ENTREPRENEURSHIP DEVELOPMENT

Course Outcome

1. The students imbibe the entrepreneurship skills in their practical settings to become a great entrepreneur
2. The outcome of the course is to make the students to learn techniques, principles and models of Entrepreneurship
3. The course enable the students to have a entrepreneurial perspective when initiating their business start-ups
4. The course make the students to know about the significance of entrepreneurship and its characteristics forelevating the position of student to upcoming entrepreneur
5. The course teach competency skills to students for competing vibrantly in the business market to increase theGDP ratio of the country.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

PSYCHIATRIC SOCIALWORK

Course Outcome

1. The students can be enriched with knowledge on institutional and extra mural approaches to provision of mental health services.
2. The students can acquire the skill to understand the varioussettings in psychiatry
3. The students can use the various psychological treatment methods for different mentally affected disorder patients
4. The students can use the psychological therapies for curing the mental illness to make the society more healthier
5. The students can acquire specific knowledge on the policies and legislations of mental health in India.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X	X	X	X
CO 2								X		
CO 3		X	X		X	X	X			X
CO 4	X									

CO 5		X		X		X	X	X	X	X

SOCIOLOGY AND PSYCHOLOGY FOR SOCIAL WORK PRACTICE - I

1. The outcome of the course is to get knowledge in regarding to the psychological development of theindividual in respect of brain development and itsintelligence
2. The students can understand well about the psychologicaltheories which will help in looking over through the perspective of psychological aspect
3. Sociological perspective is also included to gain knowledge about the varied social institutions and socialstructures that make a great impact in the societies development
4. The course enable the students to know more about theimportant concepts of developmental psychology for creating the psychological perspective among them
5. The course make the students to be a practical social worker by knowing the various concepts of sociology and psychology.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

DISASTER RISK REDUCTION

Course Outcome

1. The students can learn about the mitigation measures carried out by the Rescue force when disaster occurs
2. The disasters occurring make the students to learn about its different types and its effect making a huge impact on the lives of so many people
3. The students must learn how to rehabilitate the disasteraffected people
4. The students will learn to protect them from disasterwhether it is man-made or natural
5. The course enable the students capacity to cope effectively when any disaster affect their living conditions and livelihood.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X

CO 4	X									
CO 5			X	X		X		X	X	X

COUNSELLING – THEORY AND PRACTICE

Course Outcome

1. The students can learn the theory of counselling and can apply it in their practical work settings
2. The different approaches of counselling can emancipate the standard of students ability and capacity in solving the clients problems
3. The techniques and skills of counselling can ensure the students to apply it in their daily practical life
4. The various approaches and theories of counselling bring new perspective and outlook to students in solving the individuals coping issues
5. The outcome of the course is to make the students a capable and efficient counsellor in providing effective counselling therapy to clients.

CO VS PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

GENDER AND DEVELOPMENT

1. The concept of gender empowerment is globally making a significant note in most of the organizations and its development. The students can well understand about this emerging topic thoroughly.
2. The part of contribution of women to the development of the nation is recognised and motivated in various countries. This course modernise the thoughts of young generation on womenempowerment.
3. The outcome of the course is to comprehend well about the concept of feminism and social work.
4. The course make the students to know about the various concepts of gender empowerment and its issues that to be dealtwith
5. The course provide knowledge on the significance of gender and their development in the global arena.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		X
CO 3		X	X			X	X			
CO 4	X								X	
CO 5			X	X	X	X		X	X	X

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HUMAN RIGHTS AND SOCIAL WORK

Course Outcome

1. The students can gain more knowledge on the human rights and can raise their voice for human rights protection and advocate for it
2. The outcome of the course is to make aware about the significance and necessity of knowledge about humanrights and its influence in protecting the rights of the common people
3. The knowledge of human rights empower the students community, women community and unprivileged sectionsof society
4. The outcome of the course is to make the student a betterhuman rights activist for claiming the rights of common people
5. The course will enable the students in knowing the various international laws and its bodies making impact inthe global arena and influencing the socio-politico development of various countries.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

CORPORATE SOCIAL RESPONSIBILITY

Course Outcome

1) The students will learn about the importance of the Corporate social responsibility in the society
2) The outcome of the course is to teach the different elementsconsist in the unit of society and

defining its significance

3) The course is teaching about the social audit of organization and disorganization to students for knowing about its importance and values
4) The outcome of the course is to provide knowledge about the concept of corporate responsibility.

5The course is to make aware on the various types of responsibilities by the corporate sectors to students for better knowing about the values and significance of social responsibility and social audits

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

HEALTH AND HOSPITAL ADMINISTRATION IN INDIA.

1) The students will learn about the importance of the healthand primary health care units.
2) To teach the different health care services in the union,state and local levels.
3) The course is teaching about the importance of legalissues and laws to students.
4 The outcome of the course is to provide knowledge aboutthe concept of health and its quality in the hospitals in India.

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

SOCIAL POLICY AND SOCIAL LEGISLATION

Course Outcome

1. The students can learn about the social policy andconstitution and its relation within it
2. The outcome of the course is to make the students to be aware about the social legislations in India and its impacton the welfare of the people
3. The course teach about the policy formulation and policy planning to gain more knowledge

about it

4. The course make aware the students on the social welfarepolicy and its implementation in the social institutions
5. The outcome of the course is to make the students a responsible citizen in knowing lot more about the socialpolicy and its legislations.

CO Vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

ENVIRONMENTAL SOCIAL WORK

1) The students can learn about the ecology and social workconnection.
2) The students will orient themselves with roles of different social movements protecting the environment.
3. Students will learn about their roles and responsibilities to protectthe nature.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X			X	X
CO 4	X			X			X			
CO 5		X				X		X	X	

INTERNATIONAL SOCIAL WORK

Course Outcome

1. To introduce students to the concept of the International dimensions of Social work and Connections between the localand global.
2. To make cross – cultural comparisons in examining responsesto global issues.
3. To enhance cross-cultural competency among students.

CO vs PO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

INTERNATIONAL HUMAN RESOURCE MANAGEMENT

Course Outcome

1. Students will get the proper understanding of internationalbusiness environment.
2. Students will get exposure to the international humanresource management.
3. To enhance cross-cultural competency among students.
4. The course make aware the students on the social welfarepolicy and its implementation in the social institutions
5. The outcome of the course is to make the students a responsible citizen in knowing lot more about the socialpolicy and its legislations.

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

MIGRATION ISSUES AND HUMAN SECURITY

Course Outcome

1) The course make aware the students on the issues of migration and its problem faced by refugees
2) The students study about the migration within the country and its impact in the rural-urban divide on the economic aspect
3) The students well understand about the rising crisis of human trafficking in the Indian borders and giving threat tothe security of the nation

4) The outcome of the course is to well understand about the concept of internal and external migration occurring in thevarious countries
5 The course make the students to know about the causes and effects of migration for addressing it in the near future.

NGOs MANAGEMENT AND DEVELOPMENT PRACTICES

Course Outcome

1. To gain knowledge about establishing and managing a non governmental organization
2. Understand the functions and activities of a nongovernmental organization
3. Acquire the skill of working with nongovernmental organization.
4. The course make aware the students on the social welfarepolicy and its implementation in the social institutions
5. The outcome of the course is to make the students a responsible citizen in knowing lot more about the socialpolicy and its legislations

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	X	X	X	X	X	X	X		X	X
CO 2								X		
CO 3		X	X		X	X	X		X	X
CO 4	X									
CO 5			X	X		X		X	X	X

M.COM DEGREE COURSE IN MASTER OF COMMERCE (GENERAL)

UNIVERSITY OF MADRAS
M.COM DEGREE COURSE IN MASTER OF COMMERCE (GENERAL)
SYLLABUS WITH EFFECT FROM 2022-2023

PROGRAM OUTCOMES for M.Com (General Commerce)

PO1. Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2. Problem Solving: Solve problems from the disciplines of concern using the knowledge, skills and attitudes acquired from humanities/ sciences/ mathematics/ social sciences.

PO3. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO4. Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in wide variety of settings.

PO5. Ethics: Understand multiple value systems including your own, the moral dimensions of your decisions, and accept responsibility for them.

PO6. Environment and sustainability: Understand the impact of technology and business practices in societal and environmental contexts, and sustainable development.

PO7. Self-directed and life-long learning: Demonstrate the ability to engage in independent and lifelong learning in the broadest context socio-technological changes.

PO8. Computational Thinking: Understand data-based reasoning through translation of data into abstract concepts using computing technology-based tools.

Programme Specific Outcomes

PSO1: Develop in-depth knowledge in the field of Commerce, Management, and legal framework of business.

PSO2: Make use of research methods, statistical techniques, and IT tools for operational decision-making in business.

PSO3: Experiment the theoretical concepts in practice through projects and internships.

After completing the course Advanced Corporate Accounting and Accounting Standards, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Explain the accounting treatment adopted for raising funds and redeeming the funds.

CO2 Illustrate the Acquisition, amalgamation, and reconstruction (internal & external) schemes of companies .

CO3 Construct final accounts of Joint Stock Companies.

CO4 Explain the methods of preparing statements for liquidation of companies.

CO5 Outline the accounting standards prescribed by Generally Accepted Accounting Principles and Practices (GAAP) recommended by the ICAI - Mandatory Accounting Standards (AS) issued by the ICAI.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES
CO-PO MAPPING

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X				
CO3	X		X		
CO4	X				
CO5	X		X		

After completing the course Financial Management, the students will be able:
COURSE OUTCOMES:
At the end of the course the students will be able to
CO1 Develop the scope of financial management in functional areas of business and corporate
CO2 Solve problems relating to the capital structure and types of leverages to take financial decisions.
CO3 Determine the cost of capital and Choose appropriate dividend theories to cope with market conditions
CO4 Analyze various investment options to make investment decisions.
CO5 Analyze the elements of working capital management for efficient management of short term finance.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Advanced Organizational Behaviour, the students will be able:
COURSE OUTCOMES:
At the end of the course the students will be able to
CO1 Infer the organizational behaviour needs and approaches in global scenario.
CO2 Identify the progress and challenges in organizational change management and the role

of politics.
CO3 Explain the organizational communication and types of stress management.
CO4 Compare the organizational culture and its effectiveness.
CO5 Illustrate the Systems approach to change, intervention strategy model, total project management model organize the organizational change in management.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Managerial Economics, the students will be able:
COURSE OUTCOMES:
At the end of the course the students will be able to
CO1 Illustrate the applications of managerial economics in business decision-making.
CO2 Outline the economic principles and best practices in business.
CO3 Demonstrate how to estimate demand on the basis of available data.
CO4 Explain how to make price and quantity competition decisions in various market structures.
MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2	X				
CO3	X				
CO4	X				
CO5	X				

After completing the course Strategic Human Resource Management and Development,

the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Explain the strategic framework human resource management and Human resource development.

CO2 Explain the HR policies and procedures of E - Employee profile, E- selection and recruitment.

CO3 Outline the cultural aspects of domestic and international HRM.

CO4 Interpret career management concepts and build career development models.

CO5 Outline the role of HR in coaching and counseling employees.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Advanced Cost and Management Accounting, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Outline the concepts of cost accounting principles and cost control techniques.

CO2 Apply the accounting procedure of product costing and process costing to prepare the accounts of the manufacturing industries.

CO3 Apply the techniques of marginal costing & Cost volume profit analysis in Business decision making.

CO4 Analyse the standard cost and variance in cost estimation and control

CO5 Apply costing techniques and interpret financial statements for making financial decisions.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Quantitative Techniques for Business Decisions

, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Illustrate quantitative methods and statistical tools for business problems.

CO2 Explain the application of statistics in business Decision making.

CO3 Choose appropriate Statistical methods for data analysis.

CO4 Analyse the data using Descriptive and Inferential statistics.

CO5 Interpret the statistical results to make meaningful decisions.

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Corporate Laws, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Explain the concepts of corporate governance, CSR and its implications.

CO2 Compare and contrast the principles of governance in various sector.

CO3 Identify the functional procedures of companies with SEBI regulations

CO4 Examine the legal frameworks of The Competition Act 2002, Foreign Exchange Management Act 1999.

CO5 Infer the legal frameworks of Information Technology Act 2000.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2	X				
CO3	X				
CO4	X				
CO5	X				

After completing the course Industrial Relations & Labour Welfare, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Explain the role of management and unions in the promotion of industrial relations.

CO2 Outline the important causes & impact of industrial disputes and settlement procedures.

CO3 Demonstrate the judicial setup of Labour Laws, the features of welfare and wage Legislations.

CO4 Inspect the social security measures and labour welfare under Labour Laws.

CO5 Interpret the different categories of labour, Economic assistance, and social protection.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2	X				
CO3	X				
CO4	X				
CO5	X				

After completing the course customer relationship management, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Infer about the concept of CRM and its types.

CO2 Summarize the CRM concepts with respect to Marketing and sales.

CO3 Demonstrate the CRM and customer service concepts for customer satisfaction.

CO4 Identify the sales process management tools and E-CRM techniques.

CO5 Utilize the CRM practices adopted in the diversified industry.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Total Quality Management, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Explain the quality control applications with cost benefits .

CO2 Classify the inspection methods and value engineering concepts.

CO3 Relate the theory of sampling inspection.

CO4 interpret the quality improvement techniques and control system.

CO5 Illustrate the ISO model, implementation of ISO 9000, HRM and Quality circles, Environment Management System and Total quality control.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2	X				
CO3	X				
CO4	X				
CO5	X		X		

After completing the course Research Methodology, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Outline the basic concept of Research, the Steps involved in the Research, and the research problem.

CO2 Demonstrate the formulation of hypothesis, sampling techniques, and sample size determination.

CO3 Infer the methods of data collection, construction of questionnaire, tools for data collection, testing validity, and reliability.

CO4 Analyse and interpret data, through statistical applications.

CO5 Apply the methods of report writing in preparing the report. (P)

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X	X	X		
CO2	X	X	X		
CO3	X	X	X		
CO4	X	X	X		
CO5	X	X	X		

After completing the course Information Technology for Business, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Define the fundamentals of computer.
CO2 Explain the computerizations in Banks.
CO3 Apply the methods in electronic funds transfer and document handling systems.
CO4 Examine the use of computer in additional banking applications.
CO5 Apply the software applications like WordStar, Lotus 123, dbase III+, Graphics in Real time Project.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1		X	X		
CO2	X	X	X		
CO3	X	X	X		
CO4	X	X	X		
CO5			X		

FUNDAMENTALS OF INFORMATION TECHNOLOGY LIST OF PRACTICAL EXPERIMENTS ·

Creating Mail merged documents in MS WORD for example, Interview call letters · Typing tables in Ms Word, for example schedule of debtors · Creating a Cash budget in MS-EXCEL · Draw a break even analysis graph in EXCEL · Draw a graph to compare prices across year of multiple products · Calculate the NPV of projects using EXCEL · Computing regression and estimating the dependent variable using EXCEL · Preparing Flexible budget using EXCEL · Creating a file debtors and a file of Invoices along with the debtors details (relationship) · Creating forms of data entry and data editing for a given data file (Include validation) · Using the query generator to extract data · Creating a Power Point presentation to promote a product. · Creating a PP Slide show with clip art and image files · Spelling checking, formatting and printing in WORD · Update files in MS-Access · Use reports to generate summaries in Ms-Access · Use PP Facilities to create and automate slide show (including transition) · Computing variance analysis using EXCEL · Using data from Ms-Access to mail, merge a document in MS-WORD · Drawing various types of graphs in EXCEL · Preparation of Ledger Accounts through Tally · Preparation of Trial balance though Tally · Computation of Means and Standard deviation through SPSS package · Computing Correlation and Regression through SPSS Package · Preparation of Charts and Diagrams through SPSS Package.

After completing the course Income Tax Law And Practice, the students will be able:
COURSE OUTCOMES:

At the end of the course the students will be able to
CO1 Construct the computation of income from on different sources.

CO2 Apply the gains earned or loss occurred from the transfer of capital assets.
CO3 Identify the permissible inter-source and inter-head adjustments and provisions to arrive at the total income of an assesses.
CO4 Construct the Gross Total Income, Total Income and the tax liability of an individual.
CO5 Outline the domestic and international transfer pricing under Income Tax Law 1961.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Marketing of Services, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to
CO1 Demonstrate the similarities and differences between service-based and physical based product activities.
CO2 Illustrate the challenges and marketing issues in a changing technological landscape.
CO3 Interpret the extended marketing mix for services.
CO4 Explain the overall marketing environment of financial services.
CO5 Relate the technological and human issues relating to the implementation of CRM in the organization.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Managerial Behaviour and Effectiveness, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to
CO1 Demonstrate the dimensions of managerial job 269ehavior.

CO2 Identify the managerial talent and methods of career development.
CO3 Outline the Industrial and Government practices in the management of managerial effectiveness.
CO4 Compare the components of the organizational process.
CO5 Demonstrate the aspects of managing human relations.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2	X				
CO3	X				
CO4	X				
CO5	X				

After completing the course Consumer Behaviour, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to
CO1 Identify Consumer Behaviour models.
CO2 Examine the impact of psychological variables, including perception, learning, motivation, personality and attitudes on Consumer's behaviour.
CO3 Demonstrate the impact of various social variables, such as culture, subcultures, family/household and reference groups, on consumer's purchasing patterns.
CO4 Interpret the consumer decision-making process.
CO5 Explain family and household decision-making process.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Change Management, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to
CO1 Explain the Concepts and models of Organizational change.
CO2 Outline the Challenges in change management and Learning organization.

CO3 Demonstrate the ways of managing major changes, and how to motivate and enable the changes in an organization.
CO4 Identify Mapping of change, cultural web, Cultural attributes and resistance of change.
CO5 Develop Systems approach to change, intervention strategy model, total project management model in an organization.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the course Corporate Governance & Social Responsibility, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to
CO1 Explain the fundamentals of ethics and its implications in business.
CO2 Interpret the concepts of ethics in advertisement and environmental.
CO3 Demonstrate the corporate social responsibility and promoting corporate responsiveness.
CO4 Interpret the concepts of corporate governance and identify the board mechanism.
CO5 To outline the formation of the Birla Committee Report and its recommendations.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2	X				
CO3	X				X
CO4	X				
CO5	X				

After completing the course Management Information Systems, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to
CO1 Management Information System Need, The Strategic role Evolution of Management

Information System Components of Management Information System Information flow.

CO2 Data base management systems Objectives and Components Database design Creation and control Recent trends in database.

CO3 Developing information system Planning, Designing and redesigning Approaches for system development System analysis and Design system Implementation and Maintenance.

CO4 Transaction processes and Support system Transaction processing system Office automation systems Decision support systems Executive information systems Artificial intelligence and Expert systems.

CO5 Functional Information systems Production, Finance, Human resource and Marketing Managing information resources Information Security Control & Audit of Information Systems.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X				
CO2	X				
CO3	X				
CO4	X				
CO5	X				

After completing the course Investment Analysis and Portfolio Management, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 describe the overview of investments and identify the various financial instruments.

CO2 Apply the relationship between risk and return, to solve problems related to time value of money.

CO3 Categorize the securities and their valuation to interpret the fundamental and technical analysis of derivatives.

CO4 Illustrate the theories of portfolio management and SEBI regulations.

CO5 Apply the theories relating to portfolio management & portfolio risk & return.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		

CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the Indirect Taxes, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Explain the features, and benefits of GST.

CO2 Describe the important definitions on GST.

CO3 Outline the registration procedure relating to GST.

CO4 Explain the various aspects of assessment of GST.

CO5 Outline the important provisions of Customs Duty.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X		X		
CO3	X		X		
CO4	X		X		
CO5	X		X		

After completing the Financial Markets and Institutions, the students will be able:

COURSE OUTCOMES:

At the end of the course the students will be able to

CO1 Outline the Money market and Capital market in the Indian financial system.

CO2 Explain the profile of the Indian money market which includes the commercial paper market, Bill market.

CO3 Describe the role of certificate of deposits, Treasury bills, REPO Accounting in Indian money markets.

CO4 Classify the Indian money and Capital market and analyze the new financial instruments in the capital market.

CO5 Demonstrate the functions of financial service institutions in India like CRISIL, DFHIL, ICRA, OTCEI, NSDL, STCI.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5
CO1	X		X		
CO2	X				

CO3	X				
CO4	X		X		
CO5	X		X		

After completing Digital Banking, the students will be able:

COURSE OUTCOMES:
At the end of the course the students will be able to
CO1 Critically compare, contrast evaluate the different machine learning techniques in terms of their applicability to solving problems in banking sector.
CO2 To explain present major economic and technical changes are undergoing in industrial and financial revolution through the new information-processing Technology.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES

PO/CO	PO1	PO2	PO3
CO1	X		X
CO2	X		X

M.SC VISUAL COMMUNICATION

UNIVERSITY OF MADRAS
M.Sc. VISUAL COMMUNICATION
(Syllabus with effect from 2022-2023)

PROGRAMME EDUCATIONAL OBJECTIVES

10. Todevelopskillsrequiredtomeetthedemandsofmediaandentertainmentindustry
11. Togainmeaningfulemploymentinwiderangeofentertainmentandcreativeindustries
12. Todevelopcreativeandinnovativewaystogenerate,anddesigneffectivemessages
13. Across media platforms
14. To gain procedural knowledge, to work as individual and in teams to fulfilworkflows and tasks in media organisations
15. To gain academic and scholarly knowledge to become effective researchers, teachers and mentors in the discipline of communication
16. Learns will develop entrepreneurial skills to work independently or find gainfulemploymentinthe established entertainment industry
17. Toengageinethicallyandsociallyresponsiblemediapracticesandseverasachangeagent
18. To inculcate the values of truth-seeking, truth-telling, intellectual honesty and respect forview-point diversity.

PROGRAMOUTCOME

7. Ability to design, develop and produce media content on a wide range of topic
8. Demonstrate mastery over a range of skill sets and techniques to work on multiple platforms and formats
9. To become an enterprising, enthusiastic and creative media professional
10. Tobecomeanactiveandadaptiveleader,tokeepphasewiththerapidchangesinmediaindustry
11. Abilitytoconductindependentacademicandcommercialresearchwithappropriatescientificattitudeandcommitment
12. Ability to make ethical and socially conscious decisions in professional mediapractices.

MAPPINGOFPROGRAMMEEDUCATIONALOBJECTIVESWITH PROGRAMMEOUTCOMES

Abroadrelationbetweentheprogrammeeducationalobjectiveandtheprogrammeoutcomeisgiveninthefollowingtable.

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	

CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

PROGRAMMESPECIFICOUTCOMES(PSOs)

BythecompletionoftheM.Sc.VisualCommunicationprogramme,thestudentswillhavethefollowingprogramme-specific outcomes.

5. Learnerswillgainproceduralknowledgetopracticeawiderangeofskillsthedomainofcomputer graphics, multimedia design and visual effects
6. Learnerswillhavedevelopedcompetencyindesigningprofessionalqualitymultimediapackagesand adapted to multiple platforms
7. Learnerswillbeadeptatproducingfictional,non-fictionalandinformation-orientedcontentusingcutting-edgetoolsandcreativestrategies
8. Learnsgaintheabilitytocreateobjects,models,elementsandpropertiesforextendedrealitycontentsuchas Virtual reality, Augmented reality and game design
7. Learnswilldevelopentrepreneurialskillstoworkindependentlyandadaptiveenoughforgainfulemploymentinestablished media organizations
8. Learns will be able to adhere high ethical standards and social commitment for holistic professional practices

   Learnswillgainin-depthknowledgeofscientifictheoriesunderpinningcommunicationdisciplineandcarryoutscholarlyandcommercialresearchwithscientificattitudeandintegrity

COURSE OUTCOME:

After completing the course UnderstandingHumanCommunication, the students will be able to:

6. Analyse various aspects of communication and articulate good communication principles.
7. Analyse and interpret signals, language, and signs as well as other aspects of human communication.
8. Demonstrate various modes of communication using message design principles.
9. Determine criteria for appropriate message design by distinguishing multi-level communication flows.
10. Analyse and interpret the behaviour of information, communication systems, and the spread of ideas in contemporary mediums.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Graphic Arts & Animation, the students will be able to:

6. Identify and demonstrate the knowledge in 2D Animation and the software
7. To build basic ideas and be familiar with important principles of animations
8. Utilize knowledge on how to generate a still and image processing in animations
9. Develop the fundamentals and various techniques in White board animations
10. Analyse the practical knowledge and understand the Photo voice methods and process.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Computer Graphics – 1 – 3D Designs, the students will be able to:

6. Skills to create 3d designs
7. Skills to create Nurbs & Splines
8. Skills to create polygon modelling
9. Skills to add Textures & material to models
10. Skills to take Render output

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Creative Digital Illustration, the students will be able to:

6. Job profile as Professionals in Visualization, Creative Illustration, Cartoon and Caricature artist
7. Job profile as political Cartoonist, Magazine layout artist, Film Title designers
8. Professionals as Visual Analyzer, Graphic designers, Special visual effects designer
9. Professionalism in Animation design, 2D animation artist
10. Job description as Concept Artist, Game Designer,3D Animator

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Contemporary Trends in Indian Media, the students will be able to:

5. Critically assess the use of rhetoric in an array of advertising and media materials, as demonstrated through successful completion of quizzes and critical analyses and Online critique of advertising and media campaign materials
6. Learners can become script writers content writers and program producers for mass media productions.
7. Learners will be able to write and develop the content for new media.
8. Learners will understand the ethics and basic principles in writing materials for advertisements.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Media Aesthetics, the students will be able to:

6. Learners are exposed to Television channels, news reporting
7. Learners are trained as cinematographers, Designers, Visualizers
8. Learners become program producers, photojournalists
9. Learners are trained as social media experts in the media profession
10. Learners are experts in Television management production

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Mediated Communication, the students will be able to:

6. Analyse and interpret systems of mediated communication
7. Critically evaluate public opinion surveys and polls
8. Outline and write a reflexive essay on the effects of media on self and the other
9. Analyze and interpret developments in mediated communication using multiple theoretical lenses
10. Identify key factors driving the spread of information and virality

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Computer Graphics – 2 (Camera and Lighting Techniques) the students will be able to:

6. Skills to do basic lighting
7. Skills to add types of lights & lighting
8. Skills to add interior and exterior lighting
9. Skills to add camera & camera movements
10. Skills to Render with camera movements

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Digital Filmmaking, the students will be able to:

5. Identify business opportunities and platforms for digital platforms
6. Critically appraise the opportunities and economic risks in digital platforms.
7. Develop a business plan and online collaboration workspace for entrepreneurship.
8. Prepare a low-cost budget and revenue model for independent filmmaking

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Design Thinking, the students will be able to:

6. Adopt a problem-solving mindset to reframe design challenges
7. Enumerate and select appropriate design thinking approach for specific design problem
8. Use design thinking tools and methods to solve real-world problems
9. Apply design thinking principles to develop plan of action and wireframe for specific problem domain
10. To create prototypes for specific design problem using available design tools and apps

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Writing for Media, the students will be able to:

6. Understand the basic concepts of writing techniques for media.
7. Learners can become news writers, content writers, and program producers for mass media

productions.

8. Learners will be able to write and develop the content for new media.
9. Plans
10. The course provides Learners with an understanding of the importance of writing for the media.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Anchoring and Presentation Skills, the students will be able to:

6. Learners will gain knowledge about the do's and don'ts of the presenter
7. They will present the program artistically.
8. They can present programs and news.
9. They come to know the importance of voice, speech, make-up, etc.
10. They can face the technical aspects such as camera, lighting, sound, etc.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Communication Research Methods, the students will be able to:

7. Outline various steps involved in conducting communication research and identify a researchable topic
8. Diagram a communication problem with a causal model and present operational definitions of key constructs
9. Prepare a coding framework for analysis coverage of major current news events and apply CATA
10. Apply qualitative methods like in-depth interviewing for journalism practices
11. Design questionnaire for audience and audience measurement

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course UX and Interactive Media Design, the students will be able to:

6. Skills to do basics of UI/UX design
7. Skills to do Colouring for UI/UX
8. Skills to create buttons & icons
9. Skills to do prototyping
10. Skills to render an output for UI/UX developing
11.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Video Editing and Visual Effects (VFX), the students will be able to:

6. Skills to do Editing
7. Skills to do Editing and advanced techniques in Editing
8. Skills to remove wire, rigging, tracking methods and clean plate.
9. Skills to do Rotoscopy
10. Skills to do Composting

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Computer Graphics – 3 (Advanced Techniques), the students will be able to:

6. Skills to do basic Character Modelling
7. Skills to do Rigging and Parenting
8. Skills to do Biped animation
9. Skills to do Keyframe animation
10. Skills to add Dynamics

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Transmedia Storytelling, the students will be able to:

6. Critically evaluate popular, on-going transmedia projects
7. Explain the decision-making process for adopting a transmedia storytelling in marketing or journalism context
8. Prepare a strategic plan and budget for transmedia storytelling for OTT platform on entertainment or strategic communication content
9. Demonstrate an ability to prepare a script and storyboard for transmedia project and a web series for OTT
10. Apply multimedia skills to produce a short project for transmedia distribution.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Advertising Strategies, the students will be able to:

6. Apply creative strategies to develop a brand promotion plan
7. Interpret data and conduct audience analysis for a advertising campaign
8. To produce an original public service advertising for cross platform distribution
9. Design banner advertising for websites and embed them a website or a blog
10. Demonstrate procedural knowledge on online advertising strategies

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Media Entrepreneurship and Innovation, the students will be able to:

6. Identify business opportunities and platforms for media entrepreneurship
7. Critically appraise the opportunities and economic risks in media entrepreneurship
8. Develop a business plan and online collaboration workspace for media start-ups
9. Prepare a detailed proposal and strategic vision for establishing a media start-up.
10. Prepare a low-cost budget and revenue model for a multimedia news package for a freelance assignment

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Immersive Media Design (VR/AR/ Game Design), the students will be able to:

6. Adapt the use of Immersive Technology
7. Applied the technology of Virtual reality
8. Compare the mobile technology usage combined with Augmented reality
9. Evaluate the different immersive Technology of Mixed reality
10. Plan to organize the game design

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Capstone Project and Portfolio OR Dissertation, the students will be able to:

Option 1: Capstone Project and Portfolio:

7. Ability to understand the trends and demands of the media industry
8. Ability to fine tune their media skills and prepare to be industry-ready
9. Ability to generate, analyse content/data from various sources and convertthem to publishable media content
10. Ability to work seamlessly with experienced media professionals meetingthe rigours of the industry.
11. To learn to work independently in assigned projects
12. To produce an independent project as the culmination of their training andknowledge showcasing their specialization and specific interest covering contemporary themes/issues.

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

OR

Option2: Dissertation:

7. Perform literature search and scoping study on selected topics
8. Set-up digital workspace for research using applications like Zotero and Qiqqa and Publish or Perish
9. Prepare an annotated bibliography following the APA style guide
10. Read and summarize academic research articles and evaluate quality
11. based on protocols
12. Produce a news story based on academic research following best practices in academic journalism

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Digital Asset Management, the students will be able to:

6. Recognize the Importance of Content Management
7. Acquire knowledge of Digital Assets and their Management
8. Understand the requirements of storage and staffing for a successful DAM
9. Comprehend the workflows and life cycle of the Digital Assets in DAM
10. Appreciate the role of DAMs in Brands and Rights

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X
CO5	X	X	X	X			

COURSE OUTCOME:

After completing the course Digital Marketing Communication, the students will be able to:

6. Acquire knowledge of Content Marketing and its development
7. Learn the nuances of Content curation
8. Understand the functions of Social Media Marketing
9. Acquire skills in Social Media Marketing Analytics
10. Deepen knowledge of Mobile Media Marketing through social networks

MappingCourseObjectives(CO)andProgramOutcome(PO)

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	X					X	X
CO2			X	X	X	X	
CO3	X		X	X	X		X
CO4	X	X		X	X	X	X

M.SC APPLIED MICROBIOLOGY

UNIVERSITY OF MADRAS
M.Sc. DEGREE COURSE IN MICROBIOLOGY
SYLLABUS WITH EFFECT FROM 2022-2023

PROGRAMME OUTCOMES

PO1: To have a better understanding on key principles of microbial functioning at an advanced level of Taxonomy, Molecular, Biochemical, Industrial, Medical and other Basic and Applied applications.

PO2: To understand the fundamental principles of biology include central dogma, diversity of life, inheritance and how these principles related to microorganisms.

PO3: To familiarize with the role of microbes in human, animal and plant diseases and also with the environment.

PO4: To develop proficiency in the quantitative skills, necessary to analyze biological problems with knowledge of specialized techniques used in the field of Life Sciences.

PO5: To provide broad exposure to various microbial communities, ecological and commercial issues related to the field of Microbiology.

PO6: To collect, analyze, interpret scientific data, and carry out the research experiments, using microbiological laboratory techniques and safety procedures.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: The Postgraduate students will acquire fundamental and applied knowledge in history, classification, morphology and physiological characteristic of Microorganisms.

PSO 2: Understand the epidemiological status, pathogenesis, immune response, diagnosis, treatment, prevention and control of Microbial diseases in Human being and plants.

PSO 3: Understand the role of Microorganism in Medical, Food, Pharmaceutical, Industrial, Soil, Agricultural and Environmental Microbiology.

PSO 4: Become an expertise with Good Manufacturing Practices and Good Laboratory Practices in advanced Microbiological, Immunological and Molecular techniques.

PSO 5: Enhance the skills in Entrepreneurship and career opportunities in various fields of Life Sciences.

PSO 6: Develop social accountability through Microbiological importance for the betterment of the environment and mankind at National and Global perspective.

COURSE OUTCOME

After completing the course MICROBIAL DIVERSITY AND TAXONOMY, the students will be able:

1. Introduce basic concepts in Biodiversity.
2. Learn the classification and applications of extremophiles includingthermophiles, archaebacteria and methanogens.
3. Get insight on extremophiles including alkaliphiles, acidophiles, halophiles, and barophiles.
4. Gain basic knowledge on microbial taxonomy and its classification.
5. Get familiarize with bacterial classification according to Bergey’s manual.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X				X	X
CO 2	X	X		X	X	X
CO 3	X				X	X
CO 4	X		X		X	X
CO 5	X			X	X	X

After completing the course GENERAL MICROBIOLOGY AND LABORATORY ANIMAL SCIENCE, the students will be able:

1. Throws light on working principles of different microscope and their applications.
2. Provides insights on bacterial anatomy, nutritional requirements and an overview of actinomycetes.
3. A thorough understanding of different staining procedures, pure culture techniques and sterilization methods.
4. Imparts basic knowledge of algae – including life cycles and reproduction of algae.
5. An in-depth study of laboratory animals including handling and testing procedures with microorganisms.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X			X	X	X
CO 2	X	X	X			X
CO 3		X	X	X	X	X
CO 4			X	X	X	X
CO 5		X		X	X	X

CO-PO MAPPING:

After completing the course IMMUNOLOGY, the students will be able:

1. Understand the fundamental concepts of immunity, the role of the different organs and cells in immune responses.
2. Acquire the knowledge of antigens, antibodies, complement and their role in Immunology.
3. Understand the mechanisms of antigen and antibody reactions and gain the knowledge of Immunohistochemistry andImmunohematology.

4. Comprehend the overreaction by our immune system leading to hypersensitivity and its consequences; gain knowledge on autoimmunity, how it develops in a host and concepts of transplantation and tumor immunology.
5. Understand the unique properties of vaccines and types.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1		X		X	X	X
CO 2		X		X	X	X
CO 3		X		X	X	X
CO 4	X	X	X	X	X	X
CO 5	X	X		X	X	X

CO-PO MAPPING:

After completing the coursePRACTICALS: GENERAL MICROBIOLOGY AND IMMUNOLOGY, the students will be able:

1. Know how to perform sterilization techniques and handling of microscope for different microbiological work.
2. Learn technical skills on staining methods and different types of media preparation for identification of bacteria.
3. Know how to perform pure culture techniques and anaerobic culturing methods.
4. Expertise with serological techniques.
5. Analyze the components of human sera by performing centrifugation, precipitation and chromatography techniques.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X	X	X	X	X
CO 2	X	X	X	X		X
CO 3	X	X	X	X	X	
CO 4		X	X	X	X	X
CO 5		X		X	X	X

CO-PO MAPPING:

After completing the courseMICROBIAL METABOLIC PATHWAYS, the students will be able:

1. Imparts the fundamentals of Enzyme – mechanism, inhibition and regulation of enzyme action.
2. Gain knowledge on the generation of energy source.
3. Explains the concepts of carbohydrate metabolism.
4. Comprehend the concepts of Lipid metabolism.
5. Understand the biosynthetic pathways of peptidoglycan, aminoacids, purines and pyrimidines.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X	X	X	X	X
CO 2	X	X	X	X	X	X
CO 3	X	X	X	X	X	X
CO 4		X	X	X	X	X
CO 5		X		X		

CO-PO MAPPING:

After completing the coursePHARMACEUTICAL MICROBIOLOGY, the students will be able:

1. Throws light on importance of monitoring the sterility control during the manufacturing process till the final products in pharma industries.
2. Imparts knowledge on new technology and production of some important pharmaceutical products.
3. Understand the basic concepts on pharmacological principles of drug metabolism and the need of developing new drugs.
4. Learn the methodology of testing the antimicrobial properties of substances used as drugs as per the standard guidelines.
5. Learn and understand the role of various regulatory guidelines, policies in manufacturing quality products, the significances of clinical trial studies & its outcome and accreditation processes.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X		X	X	X	X
CO 2	X		X	X	X	
CO 3	X			X	X	X
CO 4				X	X	X
CO 5	X		X	X	X	X

CO-PO MAPPING:

After completing the course VIROLOGY, the students will be able:

1. Learn the viral classification, taxonomy, properties and its cultivation.

2. Gain knowledge of the different types of bacteriophages, its life cycle, oncogenic viruses and its transformation.
3. Acquire a thorough knowledge of viral diseases of economically important crop plants and brief account on virus infection of hosts other than plants – cyanobacteria, fungi and insects.
4. Learn the various medically important viral diseases prevalent throughout the world and understand the pathogenesis and diagnosis of emerging and re-emerging diseases in 21st century.
5. Imparts knowledge on the current trends and modern approaches in studying the epidemiology, diagnosis and treatment of viral diseases.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X			X	X
CO 2	X	X			X	X
CO 3	X	X	X		X	X
CO 4	X	X	X		X	X
CO 5	X	X	X		X	X

CO-PO MAPPING:

After completing the courseMEDICAL BACTERIOLOGY, the students will be able:

1. Students will learn the interrelationship between normal flora and hosts and how the virulence factors of the pathogens evades the immune system and disease syndromes.
2. Learn and familiarize with the terminologies, basic principles of specimen collections, diagnostic methods – conventional, molecular and automated system.
3. Learn the various important zoonotic diseases and Nosocomial infections prevalent in our country, the role of microbiologists in hospital and waste disposal practices.
4. Learn the concept, etiology, differential diagnosis, epidemiology and prevention of various medically important gram positive and related bacterial diseases.
5. Learn the concept, etiology, differential diagnosis, epidemiology and prevention of various medically important gram negative and other bacterial diseases.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X				X
CO 2	X	X	X	X	X	X
CO 3	X	X	X		X	X
CO 4	X	X	X		X	
CO 5	X	X	X		X	X

CO-PO MAPPING:

After completing the courseMEDICAL MYCOLOGY AND PARASITOLOGY, the

students will be able:

1. Understand the basics of fungi – morphological features, taxonomy, and classification systems used.
2. Imparts knowledge on the etiological agents, its disease mechanism associated with various types of fungal infections in humans and with special reference to immunocompromised patients.
3. Familiarize with the methods used in diagnosis of fungal infections and its treatment.
4. Learn all aspects of medically important protozoans causing diseases in human.
5. Imparts knowledge about medically important helminth causing diseases in humans and immunocompromised individuals.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X	X	X	X	X
CO 2	X	X	X	X	X	
CO 3	X	X	X	X	X	
CO 4	X	X	X	X		
CO 5	X	X	X	X		

O-PO MAPPING:

After completing the coursePRACTICAL - MEDICAL BACTERIOLOGY, MEDICAL MYCOLOGY & PARASITOLOGY AND VIROLOGY, the students will be able:

1. Gain knowledge about the standard operating procedure to be followed in diagnosis of bacterial diseases.
2. Learn how to isolate and identify the specific pathogen associated with the disease, standard methodology in determination of antimicrobial activity of the drugs against the bacterial pathogens for treatment purpose.
3. Facilitate the student to isolate and identify the various medically important fungal agents associated with different forms of fungal diseases.
4. Isolate and identify the various medically important parasitic agents cause diseases in human and learn the role of arthropod vectors in disease transmission.
5. Acquire knowledge on the propagation, cell culture methods and characterization of virus types from different sources.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X	X	X	X	
CO 2	X	X	X	X	X	X
CO 3	X	X	X	X	X	X
CO 4	X	X	X	X	X	
CO 5	X	X	X	X	X	X

After completing the courseINDUSTRIAL AND FERMENTATION TECHNOLOGY, the students will be able:

1. Imparts knowledge about fermentation, types and its importance.
2. Learn the basic knowledge in process and purification of various fermentation products.
3. Provides perceptions about biology of industrially important microorganism.
4. Throws light on primary & secondary metabolites.
5. Gain knowledge about recent advancements in fermentations.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X	X	X	X	X
CO 2	X		X		X	X
CO 3	X	X		X	X	X
CO 4	X	X	X	X	X	X
CO 5	X	X	X		X	X

CO-PO MAPPING:

After completing the courseBIOSTATISTICS, BIOINFORMATICS AND BIOINSTRUMENTATION, the students will be able:

1. Evaluate and comprehend the basics statistical terminologies used in biostatistics.
2. Grab acquaintance on different type of statistical analyses and tests for scrutinizing biological data.
3. Comprehend the basic concepts and the significance of Biological data analysis. Compute Sequence submission and retrieval tools.
4. Imparts knowledge about various concepts, advanced technical tools in docking, computational drug discovery and ADME responses.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X			X	
CO 2	X	X	X		X	
CO 3	X	X	X	X	X	X
CO 4	X	X	X	X	X	X
CO 5	X	X	X	X	X	X

After completing the courseMICROBIAL GENETICS, the students will be able:

1. Know about the principles of genetics and genetic material.
2. Familiarize on the organization of genetic material and gene regulations.
3. Learn on the types, properties of plasmids widely used in gene cloning and gene transfer.
4. Explore the impact of mutation, repair mechanism and detection of mutation.
5. Imparts knowledge on genetic recombination, transposons and gene mapping in bacteria, yeast and viruses.

CO-PO MAPPING:

CO/ PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	X				X	X
CO 2					X	X
CO 3					X	X
CO 4			X		X	
CO 5	X			X	X	X

After completing the courseGENETIC ENGINEERING, the students will be able:

1. Provides knowledge on the various enzymes used in genetic engineering.
2. Familiarize on cloning vectors used in genetic engineering.
3. Gain sound knowledge on the gene cloning strategies and transfer methods.
4. Acquire knowledge on various blotting techniques and PCR.
5. Learn the techniques of protoplast fusion, DNA finger printing techniques and application of genetic engineering in various fields.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1		X		X	X	X
CO 2	X			X	X	X
CO 3	X		X	X	X	X
CO 4	X	X			X	X
CO 5	X	X			X	X

After completing the courseMOLECULAR BIOLOGY, the students will be able:

1. Gain complete knowledge on biomolecules and Nucleic acids.
2. Explores the detailed processes of DNA replication, recombination, damage and repair mechanisms.
3. Learn about RNA synthesis and processing and RNA transport.
4. Understand the process of protein synthesis, inhibition factors and post translation modification of protein.
5. Get an idea on control of gene expression at transcription, translation level and gene silencing.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	X	X			X	X
CO 2	X		X		X	X
CO 3	X		X		X	X
CO 4	X		X		X	X
CO 5	X	X	X	X	X	

After completing the coursePRACTICAL: MICROBIAL GENETICS, MOLECULAR BIOLOGY AND GENETIC ENGINEERING, the students will be able:

1. Learn the techniques for isolation of plasmid and genomic DNA, estimation of DNA by chemical and U-V method.
2. Know the techniques for isolation of RNA from yeast, estimation of RNA by chemical and U-V method and isolation of antibiotic resistant auxotrophic mutants.
3. Get hands on training on protein estimation, determination molecular weight of protein, 2D-Gel electrophoresis, Isoelectric focusing, Separation of amino acids by TLC and paper chromatography.
4. Gains experimental knowledge on separation of proteins using chromatography. Immobilization of enzymes and whole cells. Western blotting. Protoplast and spheroplast isolation. Induction of beta-galactosidase activity in *E. coli* using IPTG.
5. Acquire knowledge on the lab skills for competent cell preparation, transformation, PCR, Native PAGE and Restriction analysis.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	X			X	X	X
CO 2	X				X	X
CO 3	X			X	X	X
CO 4	X			X	X	X
CO 5	X			X	X	X

After completing the courseSOIL AND AGRICULTURAL MICROBIOLOGY, the students will be able:

1. Imparts knowledge on types of soil and microbial interaction in soil.
2. Insight onbiofertilizers and biopesticides.
3. Gain basic knowledge about plant diseases and defense mechanism of plants.
4. Familiarize on different plant disease and its management.
5. Throws light on biogeochemical cycles and nitrogen fixation.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X	X	X	X	
CO 2	X		X		X	X
CO 3	X	X		X	X	
CO 4	X	X		X	X	X
CO 5		X	X		X	X

After completing the courseMICROBIAL REMEDIATION, the students will be able:

1. Imparts basic knowledge on bioremediation, bioaugmentation and risk associated with pollutants.
2. Insights on degradation of xenobiotics and other environmental pollutants.
3. Gain knowledge about the concepts of aerobic and anaerobic digesters, dendroremediation and biodegradation of industrial waste.
4. Throws light on enzymes from fungi and its biodegradable properties and to understand the concept of solid and liquid waste treatment.
5. Gain in-depth knowledge aboutphycoremediation of domestic wastewater.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6
CO 1	X	X	X		X	X
CO 2		X	X	X	X	X
CO 3	X		X	X	X	X
CO 4	X	X	X	X	X	X
CO 5	X	X	X	X	X	X

After completing the courseFOOD, DAIRY AND ENVIRONMENTAL MICROBIOLOGY, the students will be able:

1. Gain knowledge about different principles involved infood preservation, microbiological quality control and prevention of food-borne diseases.
2. Throws light on the role of microorganisms in milk, fermented foods and in food processing, different types of fermented food products.
3. Familiarize the diversity of microorganisms in air, exemplify the air quality, explore the impact of air borne diseases.
4. Learn the role of indicator microorganisms in water quality.
5. Gain in-depth knowledge about the degradation of xenobiotics in the environment.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	X	X	X	X	X	X
CO 2	X	X	X	X	X	X
CO 3	X	X	X		X	X
CO 4	X	X	X	X		X
CO 5	X	X	X	X	X	X

After completing the coursePRACTICAL - SOIL, AGRICULTURAL, FOOD AND ENVIRONMENTAL MICROBIOLOGY, the students will be able:

1. Imparts basic knowledge about soil inhabitingmicrobes and its impact in soil.
2. Gain knowledge about plant diseases.
3. Throws light on food spoilage, enumeration and quality assessment.
4. Learn about extracellular enzyme activity & quantification of microbes in air.
5. Gain knowledge of about the microbiological analysis of water.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	X	X	X	X	X	X
CO 2	X		X		X	
CO 3	X	X		X	X	X
CO 4	X	X	X	X	X	X
CO 5	X	X	X		X	X

After completing the courseRESEARCH METHODOLOGY, the students will be able:

1. Understand the objectives of research, design of research and analysis of data.
2. Gain basic knowledge about dissertation and publication ethics.
3. Provides perceptions about funded projects.
4. Learn about research metrics & ethics.
5. Throws light on statistical tools in biological science, software for plagiarism and reference.

CO-PO MAPPING:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	X	X	X	X	X	X
CO 2	X		X		X	X
CO 3	X	X		X	X	X
CO 4	X	X	X	X	X	X
CO 5	X	X	X			X

M.Sc. DEGREE COURSE IN BIOTECCHNOLOGY

UNIVERSITY OF MADRAS
M.Sc. DEGREE COURSE IN BIOTECCHNOLOGY

PROGRAM OUTCOMES

PROGRAMMENAME: M.Sc BIOTECHNOLOGY

PO1: Graduate will gain and apply knowledge of biotechnology, Science and Engineering concepts to solve problems related to the field of biotechnology.

PO2: They will be able to design and apply appropriate tools and techniques in biotechnological engineering practices.

PO3: Graduates will able to undertake need and impact of biotechnological solution on environment and societal context keeping in view need for sustainable development.

PO4: They are able to effectively communicate with biotech and other interdisciplinary professionals.

PO5: They will be able to design, perform experiments analyze and interpret data for investigating complex problem in biotechnology related fields.

PROGRAM SPECIFIC OUTCOME

PSO1: An expert in Biotechnology subjects knowledge.

PSO2: An expert in Biotechnology practical skills

PSO3: Efficient researcher using biotechnology practical skills.

PSO4: Development of own entrepreneur skills in biotechnology industry.

PSO5: Well versed in the field of various biotechnology fields (medical, microbial, agricultural, environmental, plant and animal).

COURSE OUTCOME :

BIOCHEMISTRY

After completing the course BIOCHEMISTRY the students will be able to

CO-1 To understand the basics of pH and related principles and carbohydrate metabolism.

CO-2 To provide basic knowledge about lipid metabolism and related significance.

CO-3 To enlighten the students on Bio-energetics and Biological oxidation pathways.

CO-4 To update the knowledge on Amino acids and Protein.

CO-5 To assess and appraise the role of Nucleic acids.

PO-CO matrix

Biochemistry	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X	X		X	X
CO-3		X	X	X	X
CO-4		X	X	X	
CO-5		X	X	X	X

MOLECULAR GENETICS

Course outcomes:

At the end of the Course, the Student will be able to:

CO-1 To acquire good knowledge about the molecular mechanisms of gene expression and understand the theories behind the organization and functions of genetic material in the living world.
CO-2 Identify and distinguish genetic regulatory mechanisms at different levels and explain the processes behind mutations and other genetic changes and study various chromosomal abnormalities.
CO-3- Make the students understand different range of DN damage and range of their tools for their detection an.
CO-4 Learn the concepts of the transposons and their applications.
CO-5 Detects the Allele frequencies and genotype frequencies in populations and describe the concepts behind the theory of evolution

PO – CO matrix

Molecular Genetics	PO-1 (Theory)	PO-2 (Practical)	PO-3 (Research,Higherstudies)	PO-4(NET)	PO-5 (Employment)
CO-1	X			X	X
CO-2	X		X	X	X
CO-3	X	X	X	X	
CO-4	X			X	
CO-5	X				X

MOLECULAR CELL BIOLOGY

Course outcomes:

CO-1 To understanding of the molecular machinery of living cells and the principles that govern the structures of macromolecules and their participation in molecular recognition.
CO-2 Identify the structures and purposes of basic components in prokaryotic and eukaryotic cells and their molecular mechanism
CO-3- Demonstrate knowledge and understanding of the principles and basic mechanisms of nuclear envelope and its functions.
CO-4 Understand the metabolic pathways and the process of transmission of extracellular signals
CO-5 Demonstrate the operation of various microscopes and microtomy in the laboratory

PO – CO matrix

Molecular Cell Biology	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X			X	
CO-2	X		X		X
CO-3	X			X	
CO-4	X			X	
CO-5	X	X		X	X

BIOINSTRUMENTATION

Course outcomes:

At the end of the Course, the Student will be able to:

CO-1 Introduction and various types ofMicroscopic techniques

CO-2 Impart understanding on centrifugation instruments and techniques

CO-3- Separation of Biomolecules

CO-4 Analytical methods on Spectroscopic Analysis

CO-5 Understandthe application and Detection on Bioinstrumentation

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5
Unit 1	X			X	X
Unit 2	X	X		X	
Unit 3	X	X	X	X	X
Unit 4	X	X	X	X	
Unit 5	X			X	X

BIOSTATISTICS

Course outcomes:

At the end of the Course, the Student will be able to:

CO-1 To understand the major Methods of collection & presentation of data

CO-2 To provide basic knowledge about methods of analysis of variance

CO-3 To enlighten the students about the methods of setting hypothesis and calculation of errors.

CO-4 To update the knowledge on Tests of significance for large and small samples.

CO-5 To assess and appraise the role of novel microbes in environment and integrate them in specific innovative approaches.

PO – CO matrix

Bioinstrumentation	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
C0-5			X	X	X

ENZYMOLOGY

Course outcomes:

CO-1 (K2) Explain the basics of enzyme nomenclature and properties
CO-2 (K3) Classify and Cognize the native and immobilized enzyme
CO-3 (K4) Examine the equations of steady state kinetics
CO-4 (K5) Assess extraction and downstream processing of enzymes
CO-5 (K6) Compile the uses of enzymes and design enzymes for Industrial and Clinical application

PO – CO matrix

Enzymology	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
CO-5			X	X	X

MICROBIOLOGY

Course outcomes:

CO-1 To understand the major discoveries of microbiology and describe microbial diversity, Microbial growth and metabolism.
CO-2 To provide basic knowledge about microbial culture, identification of microbes, principle and working of microscopes and sterilization techniques
CO-3 To enlighten the students on host microbe interaction and Epidemiology of microbial disease
CO-4 To update the knowledge on epidemic and pandemic diseases.
CO-5 To assess and appraise the role of novel microbes in environment and integrate them in specific innovative approaches.

PO – CO matrix

Microbiology	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
C0-5			X	X	X

PLANT AND ANIMAL BIOTECHNOLOGY

Course outcomes:

CO-1 To impart theoretical knowledge on various techniques of plant biotechnology like tissue culture, plant genetic transformation and their application in industries.

CO-2 Importance of secondary metabolites and production in plants.

CO-3 To develop concepts, principles and processes in animal biotechnology.

CO-4 Concept and different types in Animal Cell Culture and animal cell lines.

CO-5 Use of molecular biology techniques genetically engineer the animals to improve sustainability, productivity and suitability for pharmaceutical and industrial applications.

PO – CO matrix

Plant and Animal Biotechnology	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	X
CO-2	X	X		X	
CO-3		X	X	X	
CO-4			X	X	
C0-5			X	X	X

GENETIC ENGINEERING

Course outcomes:

CO-1 Understanding the basic steps of gene cloning and the role of enzymes and vectors responsible for gene manipulation, transformation and genetic engineering.

CO-2 Getting detailed knowledge of gene transfer methods and identifying suitable hosts for cloning.

CO-3 Acquiring theoretical knowledge in the techniques, tools, and application and safety measures of genetic engineering.

CO-4 Describes the genome mapping and sequencing and methods for gene therapy.

CO-5 Elucidate different techniques involved in genetic engineering

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5

CO-1	X	X		X	
CO-2	X	X		X	
CO-3	X	X	X	X	X
CO-4	X	X	X	X	X
CO-5	X	X	X	X	X

PHARMACEUTICAL BIOTECHNOLOGY

Course outcomes:

CO-1 Explain the basic components of pharmaceutical and biotechnology industry and methods and applications of biosensor

CO-2 Describe the Scientific, technical and economic aspects of vaccine & rDNA technology

CO-3 Describe the basic concepts of protein Engineering, therapeutic proteins and enzyme immobilization techniques

CO-4 Describe the concepts of hybridoma technology, microbial biotransformation and microbial bio-transformed products

CO-5 Explain the basic components of somatic gene therapy, Xeno-transplantation and fermenter and bio safety methods

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5
Unit 1	X				
Unit 2	X		X	X	
Unit 3	X	X	X	X	
Unit 4	X	X	X	X	
Unit 5	X	X			X

ENVIRONMENTAL BIOTECHNOLOGY

Course outcomes:

On successful completion of the course the students will be able to

CO-1 Explain various waste management methods

CO-2 Classify potential methods of biodegrading organic pollutants.

CO-3 Examine the techniques involved in remediation of polluted environments

CO-4 Assess types of pollution & its control

CO-5 Compile biotechnological approaches to degrade xenobiotic compounds

PO – CO matrix

Environmental Biotechnology	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
CO-5		X	X	X	X

TISSUE ENGINEERING

Course Outcome:

CO-1 Understand the basics of Basics of Tissue Engineering
CO-2 Apply the knowledge to create tissue culture methods
CO-3 Acquire adequate knowledge in the use of tissue in medical application
CO-4 Evaluate the benefits of Tissue Engineering & Pharmaceutical Products
CO-5 Analyze the importance of applications of tissue engineering

PO – CO matrix

Tissue engineering	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X		X	X	X
CO-2	X	X	X	X	X
CO-3	X	X	X	X	X
CO-4	X	X	X		X
CO-5	X	X	X		X

BIOINFORMATICS

Course outcomes:

CO-1 To get introduced to the basic concepts of Bioinformatics and its significance in Biological data analysis.
CO-2 Describe the history, scope and importance of Bioinformatics and role of internet in Bioinformatics.
CO-3 Explain about the methods to characterize and manage the different types of Biological data.
CO-4 Classify different types of Biological Databases.
CO-5 Introduction to the basics of sequence alignment and analysis

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5

CO-1	X	X	X	X	
CO-2	X	X	X	X	
CO-3	X	X	X	X	
CO-4		X	X	X	X
CO-5	X	X	X	X	X

IMMUNOLOGY

Course outcomes:

At the end of the course the students will be able to

CO-1 (K2) Illustrate various mechanisms that regulate immune responses and maintain tolerance

CO-2 (K3) describe key events and cellular players in antigen presentation, and how the nature of the antigen will shape resulting effector responses

CO-3 (K4) learn the concepts of cellular and molecular processes that represents the human immune system.

CO-4 (K5) elucidate the role of immunological regulation and tolerance at a cellular and molecular level

CO-5 (K6) compile concepts on immunological principles and diagnosis

PO – CO matrix

Immunology	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
CO-5			X	X	X

BIOPROCESS TECHNOLOGY

Course outcomes:

The student will learn about the:

CO-1 Outline the basis of Bioprocess Engineering

CO-2 Relate reactors in fermentation

CO-3 Differentiate fermentation processes

CO-4 Assess Scale up and Scale down

CO-5 Compile the output of fermentation processes

PO – CO matrix

Bioprocess Technology	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X	X	X	X	
CO-2	X			X	X
CO-3			X	X	X
CO-4			X	X	
C0-5			X	X	X

MOLECULAR DEVELOPMENTAL BIOLOGY

Course outcomes:

CO-1 Illustrate the structure and function of developmental biology, Gametogenesis
CO-2 Discuss basic fertilization process of animals
CO-3 Demonstrate the functions of embryonic development process
CO-4 Illustrate the organ development of vertebrate animals
CO-5 Demonstrate the impact of gene in developmental biology and developmental disorders

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5
Unit 1	X	X			X
Unit 2	X			X	
Unit 3	X	X	X	X	
Unit 4	X				
Unit 5	X		X	X	

RESEARCH METHODOLOGY

Course outcomes:

CO-1 Understand the bases for research
CO-2 To know about research proposal and dissertation writing.
CO-3 To know about Statistical application in research
CO-4 To know about office tools used in research
CO-5 To know about search engines.

PO – CO matrix

Unit	PO-1	PO-2	PO-3	PO-4	PO-5
Unit 1	X			X	
Unit 2	X		X	X	
Unit 3	X		X	X	
Unit 4	X	X	X	X	X
Unit 5	X		X	X	

BIOETHICS, BIOSAFETY, CLINICAL TRIALS, IPR & ENTREPRENEURSHIP

Course Outcome:

CO-1 Understand the basics of biosafety and bioethics and its impact on biological sciences and the importance of human life.
CO-2 Apply the knowledge to recognize the importance of biosafety guidelines and good clinical practices.
CO-3 Acquire adequate knowledge in the use of genetically modified organisms and its effect on human health.
CO-4 Evaluate the benefits of GM technology and importance of IPR
CO-5 Analyse the importance of protection of new knowledge and innovations and its role in business and entrepreneurship

PO – CO matrix

Bioethics, biosafety, clinical trials, IPR & entrepreneurship	PO-1	PO-2	PO-3	PO-4	PO-5
CO-1	X		X	X	X
CO-2	X		X	X	X
CO-3	X		X	X	X
CO-4	X		X		X
CO-5	X		X		X