



மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்

MANONMANIAM SUNDARANAR UNIVERSITY

TIRUNELVELI – 627 012



[With effect from the Academic year 2017 - 2018 onwards]

## M.Sc. Computer Science

### I Semester

Sl. No	Sub.Code	Title of the Paper
1.	PCSM11	Design and Analysis of Algorithms
2.	PCSM12	Advanced Java Programming
3.	PCSM13	Mathematical Foundation for Computer Science
4.	PCSM14	Object Oriented Systems Development
5.	PCSM15	Distributed Computing
6.	PCSL11	Algorithm Lab Using C++
7.	PCSL12	Advanced Java Lab

### II Semester

1.	PCSM21	Web Application Development
2.	PCSM22	Open Source Technology
3.	PCSM23	Advanced Data Base Management System
4.	PCSM24	Security in Computing
5.	PCSE21 PCSE22 PCSE23	<u>Elective - I (Any One)</u> Data Mining Multimedia Systems Cloud Computing
6.	PCSL21	Web Application Lab
7.	PCSL22	Open Source Lab

### III Semester

1.	PCSM31	Digital Image Processing
2.	PCSM32	Soft Computing
3.	PCSM33	Software Testing
4.	PCSM34	Research Methodology
5.	PCSE31 PCSE32 PCSE33	<u>Elective: (Any One)</u> Principles of Compiler Design Big Data Analytics Mobile Computing
6.	PCSL31	Image Processing Using MATLAB
7.	PCSP31	Mini Project

### IV Semester

1.	PCSP41	Major Project
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## M.Sc. Geology

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PGEM11	Dynamic Geology and Environmental Geology
2.	PGEM12	Palaeontology
3.	PGEM13	Structural Geology
4.		<b><u>Elective – I (Any One)</u></b>
	PGEE11	Marine Geology
	PGEE12	Fuel Geology
	PGEE13	Field Geology
	PGEL11	Practical – I Dynamic Geology and Environmental Geology and Paleontology
	PGEL12	Practical – II Structural Geology and Elective Core – Marine Geology
II Semester		
1.	PGEM21	Crystallography and Mineralogy
2.	PGEM22	Indian Stratigraphy
3.	PGEM23	Hydrogeology
4.		<b><u>Elective – II (Any One)</u></b>
	PGEE21	Remote Sensing and GIS
	PGEE22	Isotope Geology
	PGEE23	Geoexploration
7.	PGEL21	Practical – III Crystallography and Mineralogy and Indian Stratigraphy
8.	PGEL22	Practical - IV Hydrogeology and Elective Core Remote Sensing and GIS

<b>III Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PGEM31	Igneous Petrology
2.	PGEM32	Sedimentary Petrology
3.	PGEM33	Applied Geology – (Fuel Geology, Engineering Geology, Mining Geology and Ore Dressing)
4.	PGEM34	Research Methodology
5.	PGEL31	Practical – V – Igneous and Sedimentary Petrology
6.	PGEL32	Practical – VI - Applied Geology , Geo Physics, Geo Chemistry, Engineering Geology, Mining Geology and Ore Dressing

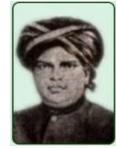
<b>IV Semester</b>		
1.	PGEM41	Metamorphic Petrology
2.	PGEM42	Economics Geology and Mineral Economics
3.	PGEM43	Applied Geophysics and Geochemistry
4.	PGEL41	Practical – VII - Metamorphic Petrology, Economics Geology and Mineral Economics
5.	PGEL42	Practical – VIII – Applied Geophysics and Geo Chemistry
6.	PGET41	Field Work
7.	PGEP41	Project



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## M.Sc. Information Technology and E-Commerce

<b>I Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PIEM11	E- Commerce
2.	PIEM12	Principles of Information Technology
3.	PIEM13	Advanced Database Management System
4.	PIEM14	Object Oriented Programming with C++
5.	PIEM15	Multimedia Systems
6.	PIEL11	DBMS Lab
7.	PIEL12	C++ Lab

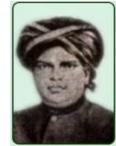
<b>II Semester</b>		
1.	PIEM21	Visual Programming
2.	PIEM22	Java Programming
3.	PIEM23	Operating Systems
4.	PIEM24	Management Information Systems
5.		<u>Elective - I (any one)</u>
	PIEE21 PIEE22	Information Security Big Data Analytics
6.	PIEL21	Visual Programming Lab
7.	PIEL22	Java Programming Lab



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## M.Sc. Information Technology and System Management

<b>I Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PISM11	Principles of Information Technology
2.	PISM12	Visual Programming
3.	PISM13	Object Oriented Programming Using C++
4.	PISM14	E-Commerce
5.	PISM15	Network Security and Cryptography
6.	PISL11	Visual Programming Lab
7.	PISL12	C++ Programming Lab

<b>II Semester</b>		
1.	PISM21	Advanced Operating Systems
2.	PISM22	Management Information Systems
3.	PISM23	RDBMS Concepts and Oracle
4.	PISM24	.NET Programming
5.		<b><u>Elective - I (any one)</u></b>
	PISE21 PISE22	Artificial Intelligence Big Data Analytics
6.	PISL21	.NET Programming Lab
7.	PISL22	Oracle Lab



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## M.Sc. Mathematics

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PMAM11	Algebra – I
2.	PMAM12	Analysis – I
3.	PMAM13	Analytic Number Theory
4.	PMAM14	Ordinary Differential Equations
5.	PMAM15	Numerical Analysis
II Semester		
1.	PMAM21	Algebra – II
2.	PMAM22	Analysis – II
3.	PMAM23	Classical Mechanics
4.	PMAM24	Differential Geometry
5.	PMAM25	Graph Theory
6.	PMAE21 PMAE22 PMAE23	<u>Elective - I (Any One)</u> Programming with C++ Discrete Mathematics Partial Differential Equations
III Semester		
1.	PMAM31	Measure and Integration
2.	PMAM32	Topology – I
3.	PMAM33	Advanced Algebra – I
4.	PMAM34	Operations Research
5.	PMAM35	Research Methodology
6.	PMAE31 PMAE32 PMAE33	<u>Elective: (Any One)</u> Algebraic Number Theory Calculus of Variations and Integral Equations Formal Languages and Automata Theory
IV Semester		
1.	PMAM41	Functional Analysis
2.	PMAM42	Complex Analysis
3.	PMAM43	Advanced Algebra – II
4.	PMAM44	Topology - II
5.	PMAP41	Project



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## M.Sc. Networking and Information Technology

<b>I Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PNTM11	Data Communication and Computer Networks
2.	PNTM12	Object Oriented Programming Using C++
3.	PNTM13	Visual Programming
4.	PNTM14	Software Engineering
5.	PNTM15	E-Commerce
6.	PNTL11	C++ Programming Lab
7.	PNTL12	Visual Programming Lab
<b>II Semester</b>		
1.	PNTM21	Advanced Java Programming
2.	PNTM22	RDBMS Concepts and Oracle
3.	PNTM23	Principles of Information Technology
4.	PNTM24	Embedded Systems
5.	PNTE21 PNTE22	<u><b>Elective – I (any one)</b></u> Management Information Systems Big Data Analytics
6.	PNTL21	Java Programming Lab
7.	PNTL22	Oracle Lab
<b>III Semester</b>		
1.	PNTM31	Web Designing
2.	PNTM32	Operating Systems
3.	PNTM33	Network Security and Cryptography
4.	PNTM34	Research Methodology
5.	PNTE31 PNTE32	<u><b>Elective: (Any One)</b></u> Data Warehousing and Mining Mobile Computing
6.	PNTL31	Web Designing and Network Lab
7.	PNTP31	Mini Project
<b>IV Semester</b>		
1.	PNTP41	Main Project



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## M.Sc. Physics

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PPHM11	Classical Mechanics
2.	PPHM12	Mathematical Physics – I
3.	PPHM13	Integrated Electronics
4.	PPHM14	Nonlinear Dynamics
5.	PPHL11	General Physics Experiments - I
6.	PPHL12	Electronics Experiments – I
II Semester		
1.	PPHM21	Mathematical Physics – II
2.	PPHM22	Condensed Matter Physics
3.	PPHM23	Microprocessor 8085 and Microcontroller 8051
4.	PPHM24	Numerical Methods and Programming in C++
5.	PPHT21	Field work
6.	PPHL21	General Physics Experiments II
7.	PPHL22	Electronics Experiments II
III Semester		
1.	PPHM31	Quantum Mechanics – I
2.	PPHM32	Electromagnetic Theory
3.	PPHM33	Statistical Mechanics
4.	PPHM34	Research Methodology
5.	PPHL31	Advanced Physics Experiments – I
6.	PPHL32	Microprocessor Experiments
IV Semester		
1.	PPHM41	Quantum Mechanics – II
2.	PPHM42	Spectroscopy
3.	PPHM43	Nuclear and Particle Physics
4.	PPHT41 PPHT42 PPHE41 PPHE42 PPHE43 PPHE44	<u>Elective:(Any One)</u>  Field Work Study Tour Renewable Energy Sources Optoelectronics and Lasers Materials Science Characterization Techniques

5.	PPHL41	Advanced Physics Experiments - II
6.	PPHL42	C++ Programming
7.	PPHP41	Project



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## M.Sc. Biochemistry

### I Semester

Sl. No	Sub.Code	Title of the Paper
1.	PBCM11	Biomolecules
2.	PBCM12	Molecular Cell Biology
3.	PBCM13	Genetics
4.	PBCM14	Biostatistics
5.	PBCL11	Biochemical, Biophysical and Physiological Techniques
6.	PBCL12	Cell Biology, Genetics and Biostatistics

### II Semester

1.	PBCM21	Physiology
2.	PBCM22	Enzymes and Enzyme Technology
3.	PBCM23	Metabolism and Regulation
4.	PBCM24	Muscle Biochemistry and Biomembranes
5.	PBCT21	Field work
6.	PBCL21	Enzymes and Enzyme Techniques
7.	PBCL22	Enzyme Kinetics

### III Semester

Sl. No	Sub.Code	Title of the Paper
1.	PBCM31	Immunology and Immunotechniques
2.	PBCM32	Nutritional Biochemistry
3.	PBCM33	Biotechnology
4.	PBCM34	Research Methodology
5.	PBCL31	Immunology, Microbial and Molecular Techniques
6.	PBCL32	Clinical Analysis - I

### IV Semester

1.	PBCM41	Molecular Endocrinology
2.	PBCM42	Clinical Biochemistry
3.	PBCM43	Molecular Biology
4.	PBCL41	Clinical Analysis – II
5.	PBCL42	Clinical Enzymology
6.	PBCT41 PBCT42	Field work/ Study Tour
7.	PBCP41	Project



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## M.Sc. Biotechnology

<b>I Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PBTM11	Cell Biology
2.	PBTM12	Biomolecules and Microbial Physiology
3.	PBTM13	Molecular Biology and Genetics
4.	PBTM14	Principles of Biotechnology
5.	PBTL11	Lab in Cell Biology and Molecular Biology
6.	PBTL12	Lab in Biomolecules and Microbial Physiology
<b>II Semester</b>		
1.	PBTM21	Biochemistry and Instrumentation
2.	PBTM22	Biology of Immune System
3.	PBTM23	Bioprocess Technology
4.	PBTM24	Nanobiotechnology
5.	PBTT21	Field work
6.	PBTL21	Lab in Biochemistry and instrumentation
7.	PBTL22	Lab in Biology of Immune System and Bioprocess Technology
<b>III Semester</b>		
1.	PBTM31	Plant Biotechnology
2.	PBTM32	Animal Biotechnology
3.	PBTM33	Stem Cell Biology
4.	PBTM34	Research Methodology and Biostatistics
5.	PBTL31	Lab in Plant Biotechnology and Animal Biotechnology
6.	PBTL32	Lab in Research Methodology and Biostatistics
<b>IV Semester</b>		
1.	PBTM41	Applied Bioinformatics
2.	PBTM42	Proteomics and Genomics
3.	PBTM43	Medical Biotechnology

4.	PBTE41 PBTE42 PBTE43	<b><u>Elective: (Any One)</u></b> Biomedical Technology Tissue Engineering Industrial Biotechnology
5.	PBTL41	Lab in Applied Bioinformatics
6.	PBTL42	Lab in Proteomics and Genomics
7.	PBTP41	Project



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## M.Sc. Microbiology

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PMBM11	General Microbiology and Diversity
2.	PMBM12	Biochemistry
3.	PMBM13	Physiology and Metabolism
4.	PMBE11 PMBE12 PMBE13 PMBE14 PMBE15 PMBE16	<u>Elective - I (any one)</u> Plant Diversity – I : Algae, Fungi and Bryophytes Anatomy, Embryology and Morphogenesis Invertebrata Environmental Biology and Biodiversity Apiculture Biochemical Techniques and Instrumentation
5.	PMBL11	Practical - I
6.	PMBL12	Practical – II
II Semester		
1.	PMBM21	Molecular Biology & Genetics
2.	PMBM22	Immunology
3.	PMBM23	Virology
4.	PMBE21 PMBE22 PMBE23 PMBE24 PMBE25 PMBE26	<u>Elective (any one)</u> Plant Diversity II : Pteridophytes, Gymnosperms and Paleobotany Plant Physiology Chordata Biophysics and Biostatistics Aquaculture Biodegradation and Bioremediation Technology
5.	PMBL21	Practical - III
6.	PMBL22	Practical - IV

<b>III Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PMBM31	Bioinformatics and Biostatistics
2.	PMBM32	Medical and Pharmaceutical Microbiology
3.	PMBM33	Environmental and Agricultural Microbiology
4.	PMBM34	Research Methodology
5.	PMBL31	Practical - V
6.	PMBL32	Practical - VI

<b>IV Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PMBM41	Food Microbiology
2.	PMBM42	Fermentation and Industrial Microbiology
3.	PMBM43	Biotechnology
4.	PMBL41	Practical - VII
5.	PMBL42	Practical - VIII
6.	PMBP41	Project



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## M.Sc. Botany

### I Semester

Sl. No	Sub.Code	Title of the Paper
1.	PBOM11	Algology and Bryology
2.	PBOM12	Mycology, Lichenology and Molecular Plant Pathology
3.	PBOM13	Microbiology and Immunology
4.	PBOM14	Phytochemistry
5.	PBOL11	Algology, Bryology, Mycology and Lichenology
6.	PBOL12	Molecular Pathology Microbiology, Immunology and Phytochemistry

### II Semester

1.	PBOM21	Pteridophytes, Gymnosperms and Paleobotany
2.	PBOM22	Genetics, Cell and Molecular Biology
3.	PBOM23	Anatomy, Embryology and Morphogenesis
4.	PBOM24	Entrepreneurship Botany
5.	PBOT21	Field Work
8.	PBOL21	Pteridophytes, Gymnosperms, Paleobotany and Anatomy
9.	PBOL22	Genetics, Cell & Molecular Biology, Embryology, Morphogenesis and Entrepreneurship Botany

### III Semester

1.	PBOM31	Taxonomy of Angiosperms and Economic Botany
2.	PBOM32	Biochemistry and Biophysics
3.	PBOM33	Computer Applications and Bioinformatics
4.	PBOM34	Research Methodology, Bioinstrumentation and Biological Techniques
5.	PBOL31	Taxonomy of Angiosperms and Economic Botany, Research Methodology, Bioinstrumentation and Biological Techniques
6.	PBOL32	Biochemistry , Biophysics, Computer Applications and Bioinformatics

<b>IV Semester</b>		
1.	PBOM41	Plant Physiology
2.	PBOM42	Plant Ecology and Conservation Biology
3.	PBOM43	Applied Biotechnology
4.	PBOE41	<b><u>Elective :</u></b> Medicinal Botany and Dietetics
5.	PBOL41	Plant Physiology and Applied Biotechnology
6.	PBOL42	Plant Ecology and Conservation Biology
7.	PBOP41	Project



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## **M.Sc. Dietetics and Food Management**

<b>I Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PDMM11	Laboratory Techniques in Nutrition Research – I
2.	PDMM12	Clinical Dietetics – I
3.	PDMM13	Food Microbiology and Safety
4.	PDMM14	Advanced Food Science and Chemistry
5.	PDML11	Laboratory Techniques in Nutrition Research – I
6.	PDML12	Clinical Dietetics – I
<b>II Semester</b>		
1.	PDMM21	Laboratory Techniques in Nutrition Research – II
2.	PDMM22	Clinical Dietetics – II
3.	PDMM23	Functional Foods and Nutraceuticals
4.	PDMM24	Computer Applications in Food Service Management
5.	PDMT21	Field Work
6.	PDML21	Laboratory Techniques in Nutrition Research - II
7.	PDML22	Clinical Dietetics - II
<b>III Semester</b>		
1.	PDMM31	Nutritional Biochemistry
2.	PDMM32	Food Processing and Preservation
3.	PDMM33	Advanced Baking
4.	PDMM34	Research Methodology
5.	PDML31	Food Processing and Preservation - I
6.	PDML32	Advanced Baking Practical - I
<b>IV Semester</b>		
1.	PDMM41	Human Factors and Ergonomics
2.	PDMM42	Food Quality Control
3.	PDMM43	Nutrition for Fitness
4.	PDML41	Food Processing and Preservation - II
5.	PDML42	Advanced Baking Practical - II
6.	PDMT41	Field Work
7.	PDMP41	Project



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## M.Sc. Electronics and Communication

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PECM11	Solid State Electronic Devices
2.	PECM12	Applied Mathematics
3.	PECM13	Signals and Systems
4.	PECM14	Advanced Microprocessors
5.	PECL11	Analog Electronic Design lab
6.	PECL12	Digital Electronic Design lab
II Semester		
1.	PECM21	Electromagnetic Field Theory
2.	PECM22	Digital Communication
3.	PECM23	Microcontrollers
4.	PECM24	Embedded System and RTOS
5.	PECT21	Field Work
8.	PECL21	DSP Matlab Lab
9.	PECL22	8051 Microcontrollers Lab
III Semester		
1.	PECM31	Advanced Power Electronics
2.	PECM32	Data Communication
3.	PECM33	Optical Communication
4.	PECM34	Research Methodology for Electronics
5.	PECL31	Advanced Communication Lab
6.	PECL32	Embedded Systems and RTOS Lab
IV Semester		
1.	PECM41	Microwave Electronics
2.	PECM42	Mobile and Satellite Communication
3.	PECM43	Navigation Systems
4.	PECE41 PECE42	Elective: (Any one) Nano Electronics Digital Design Using VHDL
5.	PECL41	Fibre Optics and Microwave Lab
6.	PECL42	Power Electronics Lab
7.	PECP41	Project



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## M.Sc. Electronics

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PELM11	Solid State Electronic Devices
2.	PELM12	Applied Mathematics
3.	PELM13	Signals and Systems
4.	PELM14	Network Theory
5.	PELL11	Analog Electronic Design Lab
6.	PELL12	Analog Circuit Simulation Lab
II Semester		
1.	PELM21	Digital Signal Processing
2.	PELM22	Embedded Systems
3.	PELM23	Advanced Microprocessors
4.	PELM24	Communication Theory
5.	PELT21	Field Work
6.	PELL21	Digital Electronic Design Lab
7.	PELL22	Digital Circuits Simulation Lab
III Semester		
1.	PELM31	Electromagnetic Theory
2.	PELM32	Nano Electronics
3.	PELM33	Digital Design Using VHDL
4.	PELM34	Research Methodology for Electronics
5.	PELL31	DSP - Matlab Lab
6.	PELL32	DSP Processor Lab
IV Semester		
1.	PELM41	Advanced Medical Electronics
2.	PELM42	Micro Electro Mechanical Systems
3.	PELM43	Advanced Microcontrollers
4.	PELT41 PELT42 PELE41 PELE42	Elective: (Any one)  Field Work Study Tour Electronic Testing Opto Electronic Devices
5.	PELL41	Embedded Systems Lab Using 8051
6.	PELL42	Embedded Systems Lab Using PIC and RTOS
7.	PELP41	Project



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## M.Sc. Information Technology

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PITM11	Principles of Information Technology
2.	PITM12	Object Oriented Programming Using C++
3.	PITM13	Dynamic Web Programming
4.	PITM14	E-Commerce
5.	PITM15	Data Communication and Networks
6.	PITL11	C++ Lab
7.	PITL12	Web Programming Lab
II Semester		
1.	PITM21	Computer Architecture
2.	PITM22	Advanced Java Programming
3.	PITM23	Mobile Computing
4.	PITM24	Embedded Systems
5.	PITE21 PITE22 PITE23	<b><u>Elective - I (any one)</u></b> Artificial Intelligence Data Mining and Warehousing Shell Programming with Open Source s/w
6.	PITL21	Java Programming Lab
7.	PITL22	Mobile Computing Lab
III Semester		
1.	PITM31	Advanced Operating System
2.	PITM32	Advanced Database Management Systems
3.	PITM33	Big Data Analytics
4.	PITM34	Research Methodology
5.	PITE31 PITE32 PITE33	<b><u>Elective: (Any One)</u></b> .Net Programming Digital Image Processing Cloud Computing
6.	PITL31	DBMS Lab
7.	PITP31	Mini Project
IV Semester		
1.	PITP41	Main Project



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## M.Sc. Nutrition & Dietetics with Hospitality Management

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PNDM11	Advanced Food Science – I
2.	PNDM12	Advances in Diet Therapy
3.	PNDM13	Nutritional Physiology
4.	PNDM14	Food Packaging
5.	PNDL11	Advanced Food Science - I
6.	PNDL12	Advances in Diet Therapy
II Semester		
1.	PNDM21	Advanced Food Science – II
2.	PNDM22	Advanced Food Chemistry and Instrumentation
3.	PNDM23	Functional Foods and Nutraceuticals
4.	PNDM24	Computer Applications in Food Service Management
5.	PNDT21	Field Work
6.	PNDL21	Advanced Food Science - II
7.	PNDL22	Advanced Food Chemistry and Instrumentation
III Semester		
1.	PNDM31	Food Microbiology and Sanitation
2.	PNDM32	Biochemical Changes in Diseases
3.	PNDM33	Principles of Business Organization and Accounting
4.	PNDM34	Research Methodology
5.	PNDL31	Food Microbiology and Sanitation
6.	PNDL32	Biochemical Changes in Diseases
IV Semester		
1.	PNDM41	Food Processing and Preservation
2.	PNDM42	Nutrition for Fitness
3.	PNDM43	Human Factors and Ergonomics
4.	PNDL41	Food Processing and Preservation
5.	PNDL42	Internship Training
6.	PNDT41	Field Work
7.	PNDP41	Project (Individual)



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## M.Sc. Chemistry

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PCHM11	Organic Chemistry – I
2.	PCHM12	Inorganic Chemistry – I
3.	PCHM13	Physical Chemistry – I
<b>Elective</b>		
4.	PCHE11	Advanced Topics in Chemistry – I
5.	PCHL11	Organic Chemistry Practical – I
6.	PCHL12	Inorganic Chemistry Practical – I
7.	PCHL13	Physical Chemistry Practical – I
II Semester		
1.	PCHM21	Organic Chemistry – II
2.	PCHM22	Inorganic Chemistry – II
3.	PCHM23	Physical Chemistry – II
<b>Elective</b>		
4.	PCHE21	Advanced Topics in Chemistry – II
5.	PCHL21	Organic Chemistry Practical – II
6.	PCHL22	Inorganic Chemistry Practical – II
7.	PCHL23	Physical Chemistry Practical – II
III Semester		
1.	PCHM31	Organic Chemistry - III
2.	PCHM32	Inorganic Chemistry – III
3.	PCHM33	Physical Chemistry - III
4.	PCHM34	Scientific – Research Methodology
5.	PCHL31	Organic Chemistry Practical - III
6.	PCHL32	Inorganic Chemistry Practical – III
7.	PCHL33	Physical Chemistry Practical - III
IV Semester		
1.	PCHM41	Organic Chemistry - IV
2.	PCHM42	Inorganic Chemistry - IV
3.	PCHM43	Physical Chemistry - IV
4.	PCHL41	Organic Chemistry Practical - IV
5.	PCHL42	Inorganic Chemistry Practical - IV
6.	PCHL43	Physical Chemistry Practical - IV
7.	PCHP41	Project



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## Master of Computer Application

<b>I Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PCAM11	MFCS – I
2.	PCAM12	Programming in C
3.	PCAM13	Computer System Architecture
4.	PCAM14	Fundamentals of Information Technology
5.	PCAM15	Web Technology
6.	PCAL11	Programming in C Lab
7.	PCAL12	MS Office and Internet Programming Lab
<b>II Semester</b>		
1.	PCAM21	MFCS – II
2.	PCAM22	Object Oriented Programming Using C++
3.	PCAM23	Data Structure and Algorithms Using C++
4.	PCAM24	Operating Systems
5.	PCAM25	Software Engineering
6.	PCAL21	Object Oriented Programming Using C++ Lab
7.	PCAL22	Data Structures and Algorithms Using C++ Lab
<b>III Semester</b>		
1.	PCAM31	Financial Management and Accounting
2.	PCAM32	Computer Graphics and Multimedia
3.	PCAM33	Advanced Java Programming
4.	PCAM34	Object Oriented Analysis and Design Using UML
5.	PCAM35	Microprocessor and its Applications
6.	PCAL31	Graphics and Multimedia Lab
7.	PCAL32	Advanced Java Programming Lab

<b>IV Semester</b>		
1.	PCAM41	Open Source Technology
2.	PCAM42	RDBMS
3.	PCAM43	Mobile Computing
4.	PCAM44	Principles of Compiler Design
5.	PCAE41 PCAE42 PCAE43 PCAE44 PCAE45	<b>Elective :</b> (Any One) Data Mining Professional Practice Soft Computing Bio-Metrics Theory of Computation
6.	PCAL41	Open Source Technology Lab
7.	PCAL42	RDBMS Lab
<b>V Semester</b>		
1.	KCAM51	Research Methodology
2.	KCAM52	.Net Programming
3.	KCAM53	Cloud Computing
4.	KCAE51 KCAE52 KCAE53 KCAE54 KCAE55	<b>Elective :</b> (Any Two) Big Data Analytics Embedded Systems Data Mining Digital Image Processing E-Commerce
1.	KCAL61	.Net Programming Lab
2.	KCAP61	Mini Project
<b>VI Semester</b>		
3.	KCAP62	Major Project



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## M.Sc. Zoology

### I Semester

Sl. No	Sub.Code	Title of the Paper
1.	PZOM11	Biochemistry
2.	PZOM12	Cell and Molecular Biology
3.	PZOM13	Developmental Biology
4.	PZOM14	Endocrinology
5.	PZOL11	Practical-I
6.	PZOL12	Practical-II

### II Semester

1.	PZOM21	Microbiology
2.	PZOM22	Environmental Biology & Biodiversity
3.	PZOM23	Evolution
4.	PZOM24	Entomology
5.	PZOT21	Field Work
6.	PZOL21	Practical – III
7.	PZOL22	Practical – IV

### III Semester

Sl. No	Sub.Code	Title of the Paper
1.	PZOM31	Animal Physiology
2.	PZOM32	Biotechnology
3.	PZOM33	Biostatistics and Bioinformatics
4.	PZOM34	Research Methodology
5.	PZOL31	Practical - V
6.	PZOL32	Practical - VI

### IV Semester

1.	PZOM41	Immunology
2.	PZOM42	Genetics
3.	PZOM43	Aquaculture
4.	PZOE41	<b>Elective:</b> Sericulture
5.	PZOL41	Practical - VII
6.	PZOL42	Practical - VIII
7.	PZOP41	Project



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## M.Sc. Hotel Management & Catering Science with Applied Nutrition

I Semester		
Sl. No	Sub.Code	Title of the Paper
1.	PHCM11	Advanced Kitchen Operations and Kitchen Hygiene
2.	PHCM12	Advanced Food and Beverage Service
3.	PHCM13	Nutrition and Food Science
4.	PHCM14	Principles of Tourism and Hospitality Management
5.	PHCM15	Food and Beverage Operation Management - I
6.	PHCL11	Advanced Kitchen Operations and Kitchen Hygiene
7.	PHCL12	Advanced Food and Beverage Service
II Semester		
1.	PHCM21	Advanced Accommodation Management and Interior Decoration
2.	PHCM22	Advanced Front Office Operation
3.	PHCM23	Computer Applications in Hotel Management and Catering Science
4.	PHCM24	Food and Beverage Operation Management – II
5.	PHCE21 PHCE22	<u>Elective-I</u> Bar Management (or) Hotel Engineering
6.	PHCL21	Advanced Accommodation Management and Interior Decoration
III Semester		
1.	PHCM31	Baking and Food Preservation
2.	PHCM32	Communication and Interpersonal Skills
3.	PHCM33	Human Resource Management in Hospitality Industry
4.	PHCM34	Research Methodology
5.	PHCE31 PHCE32	<u>Elective: (Any One)</u> Hotel Financial Management Hospitality Law
6.	PHCL31	Baking and Food Preservation
7.	PHCL32	Communication and Interpersonal Skills
IV Semester		
1.	PHCP41	Major Project (Internship Training)



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## M.Sc. Nano Science and Nanotechnology

<b>I Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PNNM11	Mathematical Physics
2.	PNNM12	Quantum Mechanics
3.	PNNM13	Solid State Physics
4.	PNNM14	Electronics
5.	PNNL11	Practical - General Physics
6.	PNNL12	Practical - Electronics

<b>II Semester</b>		
1.	PNNM21	Fundamentals of Nanoscience
2.	PNNM22	Synthesis of Nanomaterials
3.	PNNM23	Properties of Nanomaterials
4.	PNNM24	Numerical Methods
5.	PNNT21	Field Work
6.	PNNL21	Practical - Synthesis of Nanomaterials-I
7.	PNNL22	Practical - Characterization of Nanomaterials-I

<b>III Semester</b>		
<b>Sl. No</b>	<b>Sub.Code</b>	<b>Title of the Paper</b>
1.	PNNM31	Characterization of Nanomaterials
2.	PNNM32	Nanoelectronics
3.	PNNM33	Basics of Nanobiotechnology
4.	PNNM34	Research Methodology
5.	PNNL31	Practical – Synthesis of Nano materials-II
6.	PNNL32	Practical – Characterization of Nano materials-II

<b>IV Semester</b>		
1.	PNNM41	Magnetic Nanomaterials and Devices
2.	PNNM42	Nanosensors
3.	PNNM43	Nanomedicine and Drug Delivery
4.	PNNM44	Ethical Aspects of Nanotechnology
5.	PNNE41	<b><u>Elective:</u></b> Carbon Nanostructures and Applications
6.	PNNP41	Project