



AUXILIUM COLLEGE (Autonomous)

(Accredited by NAAC with A+ Grade with a CGPA of 3.55 out of 4 in the 3rd cycle)
Gandhi Nagar, Vellore – 6.

B.B.A

UCBAR20 – PROJECT

Each student shall be required to do a project and prepare the report on the basis of the investigation carried out by her in an institution or industrial organization. The student is expected to identify a problem in the organization based on her area of specialization and provide solutions and suggestions to the management. The report should demonstrate the capability of the students in analysing and evaluating the problem and to create original approach in providing solutions to the problem.

The project should include field studies, surveys, interpretation, planning and designing of the Research Methodology presented in a comprehensive manner with recommendations for solutions based on scientifically worked out data and Viva-Voce Examinations will be conducted on the basis of the report and presentation.

EVALUATION PATTERN

- ✓ Each student should undergo the training separately.
- ✓ The mode of evaluating the student will consist of two parts. One on the basis of the report writing and the other will be through Viva-Voce.
- ✓ The valuation of the report writing will be done by the Internal Examiner while for the oral i.e. Viva-Voce Examination an External Examiner will be called for.
- ✓ 60 marks will be awarded for the report writing and 40 marks for the Oral (Viva-Voce) Examination.
- ✓ Training will be for a period of 30 days (One Month) which will be during the month May – June of every academic year.
- ✓ Each student should find a reputed organization which carries out the important functions like Production, Human Resource, Finance and Marketing to carry out her investigation with the approval of the department
- ✓ Records should be maintained for the daily activities signed by the concerned authorities in the organization.

- ✓ After completion of the training, the students should get the Completed Certificate and the Attendance Certificate from the company when she comes to the College.
- ✓ Any change of the organization during the course of the Training should be done only after getting the consent from the Head of the Department of the College in a written format
- ✓ The following are the components for Report Writing (60 Marks)

Content	40 Marks
Layout	10 Marks
Grammar	10 Marks

- ✓ For the Viva-Voce Examinations (Semester – 40 Marks)

Oral Presentation	30 Marks
Question and Answer	10 Marks

B.C.A

UCCAY20 - PROJECT WORK

Year /Sem	Course Code	Title of the Course	Course Type	Course Category	H/W	Credits	Marks
III / VI	UCCAY20	Project Work	Practical	Core	3	2	40+60

The objective of the project is to enable the students to work in a project of latest topic.. Students have to do project throughout the semester in any application to gain practical knowledge of what they have studied in five semesters. Each student shall have a guide from the Department, the students are expected to complete the project and submit a fullfledged report comprising of the complete system developed along with implementation and test results. The submitted report will be evaluated by conducting project viva at the end of the semester. Their progress is monitored continuously to award the internal assessment marks.

ASSESSMENT:

Pattern of Question Paper

Theory- Total Marks 100

Section A (Answer ALL) - $10 \times 3 = 30$

Section B (either OR) - $5 \times 5 = 25$

Section C (3 out of 5) - $3 \times 15 = 45$

Practical - Total Marks 60

Practical: 45 Marks

Record: 10 Marks

Viva: 5 Marks

B.Sc. BioChemistry
SEMESTER VI
UCBCI20 - MOLECULAR BIOLOGY

Year/ Sem	Course Code UCBCI20	Title of the Course Molecular Biology	Course Type Theory	Course Category Core	H/W 6	Credits 6	Marks 40+60=100
III / VI							

Objective:

To make a study on life and the information centers called genes.

Course Outcomes (CO):

On completion of the course, the students will be able to;

1. Demonstrate the nature of Genes
2. Analyze the blueprint of life
3. Describe the mechanism of replication
4. Illustrate the mechanism of Transcription
5. Demonstrate the features of Genetic code and mechanism of Translation

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	H	H	H	H	M	H
CO 2	H	H	H	H	H	M
CO 3	H	H	M	M	H	H
CO 4	H	M	H	M	H	H
CO 5	H	H	M	H	M	H
H- High (3), M-Medium (2), L-Low (1)						

CO / PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	H	M	M	M	M	H
CO 2	H	H	H	H	H	M
CO 3	H	H	H	H	M	M
CO 4	H	H	H	H	H	H
CO 5	H	M	H	H	M	H
H- High (3), M-Medium (2), L-Low (1)						

Unit I:**(18 Hours)**

- 1.1 Genetics- Mendel's laws of inheritance, test cross, back cross and law of incomplete dominance (K1, K2, K3, K4)

- 1.2 Genomic organization of prokaryotes cells (K1, K2, K3, K4)
- 1.3 Genomic organization of eukaryotic cells (K1, K2, K3, K4)
- 1.4 Genetic Material – DNA and RNA, Evidences for DNA as genetic material - Griffith, Avery et al and Hershey chase experiments (K1, K2, K3, K4)
- 1.5 Central dogma of molecular genetics (K1, K2, K3, K4)
- 1.6 Repetitive DNA (K1, K2, K3, K4)

Unit II: (18 Hours)

- 2.1 Prokaryotic replication: Modes of replication (K1, K2)
- 2.2 Semi conservative replication - Experimental evidences (K1, K2)
- 2.3 Process of Prokaryotic replication - Initiation, Elongation and Termination (K1, K2)
- 2.4 Enzymes and proteins involved in replication (K1, K2)
- 2.5 Inhibitors of replication (K1, K2)
- 2.6 DNA repair - Overview (K1, K2)

Unit III: (18Hours)

- 3.1 Prokaryotic transcription: Promoters (K1, K2)
- 3.2 Process of transcription- Initiation, Elongation & Termination (K1,K2, K3,K4)
- 3.3 Enzymes and proteins involved in transcription (K1, K2)
- 3.4 Inhibitors of transcription (K1, K2)
- 3.5 Post transcriptional processing of rRNA and tRNA in prokaryotes (K1, K2)
- 3.6 Reverse transcription (K1, K2)

Unit IV: (18 Hours)

- 4.1 Genetic code dictionary - General features, Wobble hypothesis (K1, K2)
- 4.2 Composition of prokaryotic ribosome (K1, K2)
- 4.3 Composition of eukaryotic ribosome (K1, K2)
- 4.4 Process of protein synthesis in prokaryotes - Initiation, Elongation and Termination (K1,K2, K3, K4)
- 4.5 Inhibitors of protein synthesis in prokaryotes (K1, K2)
- 4.6 Post translational modification (K1, K2)

Unit V: (18 Hours)

- 5.1 Regulation of gene expression in prokaryotes: Operon concept - lac operon (K1, K2)
- 5.2 Mutation: Definition, Classification with example (K1, K2)
- 5.3 An overview of Genomics (K1, K2)
- 5.4 An overview of Proteomics (K1, K2)
- 5.5 Chromosome mapping, Human Genome Project (K1, K2)
- 5.6 DNA micro arrays, DNA fingerprinting and foot printing (K1, K2)

[Knowledge Level: K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyse]

Text Books:

1. Lehninger, David Nelson and M Chael M Cox - Principles of Biochemistry - WH Freeman and Company Ltd, 5th edition -2009

- David Friefelder - Molecular Biology- Narosa Publishing House, 2nd edition -2008

Reference Books:

- Lodish, Darnell and Baltimore - Molecular Cell Biology - WH Freeman and Company, 4th edition -2000
- Brown TA - Gene Cloning- Blackwell Science, 8th edition -2018
- Benjamin Lewin - Gene VIII - Pearson Education International, 8th edition -2018
- David Friefelder - Molecular Biology -Narosa Publishing House, 2nd edition -2008
- Veer Bala Rastogi - Principles of Molecular Biology ,4th edition - 2016
- Batiza Ann. Bioinformatics, Genomics, and Proteomics (English, Hardcover, Batiza Ann), Chelsea House Publishers, 2005

Open Educational Resources (OER):

- <https://www.youtube.com/watch?v=0yBD0xKbcVU>
- <https://www.youtube.com/watch?v=gZAw7pahzMM>
- <https://www.youtube.com/watch?v=k4AI4UipziI>
- <https://www.youtube.com/watch?v=gvYJaPpkSZg>
- <https://www.youtube.com/watch?v=xYOK-yzUWSI>

SEMESTER – V & VI

UCBCK20- MAIN PRACTICAL –IV

Year/ Sem	Course Code	Title of the Course	Course Type	Course Category	H/W	Credits	Marks
III / VI	UCBCK20	Main Practical - IV	Practical	Core	4	6	40+60=100

Objective:

The course is aimed to enhance the practical skill of the student in handling and estimating the components present in the biological samples.

Course Outcomes (CO)

On completion of the course, the students will be able to;

- Apply the safety measures in the laboratory
- Analyze the biological sample for the enzyme activity
- To obtain practical skills in basic hematological techniques.

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	H	H	M	M	L	H
CO 2	M	M	L	H	H	M
CO 3	H	L	M	M	L	M
H- High (3), M-Medium (2), L-Low (1)						

CO / PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	H	H	M	M	L	H
CO 2	H	L	H	M	H	M
CO 3	M	H	M	M	L	M
H- High (3), M-Medium (2), L-Low (1)						

1. Safety Measures In The Laboratory-IV

2. Enzyme Analysis:

1. Determination of SGOT activity.
2. Determination of SGPT activity
3. Effect of pH on the activity of the enzyme -Acid phosphatase
4. Effect of Temperature on the activity of the enzyme - Acid phosphatase
5. Effect of substrate concentration on the activity of the enzyme -Acid phosphatase
6. Determination of Specific activity of the enzyme - Acid phosphatase
7. Effect of pH on the activity of the enzyme - salivary amylase
8. Effect of Temperature on the activity of the enzyme - salivary amylase
9. Effect of substrate concentration on the activity of the enzyme - salivary amylase
10. Determination of Specific activity of the enzyme - salivary amylase

3. Hematological Experiments:

1. Methods for Preservation of blood for analysis
2. Collection of Blood
3. Enumeration of RBC
4. Enumeration of WBC
5. Enumeration of Platelets
6. Estimation of Erythrocyte sedimentation rate
7. Determination of Hemoglobin
8. Packed cell volume
9. Determination of Bleeding time
10. Determination of Clotting Time
11. Grouping of Blood & Rh typing

Reference Books:

1. Jayaraman J - Manuals in Biochemistry - New Age International Publishers,2011
2. Varley, Alan H Gowen lock - Practical Biochemistry - 6th edition - CBS Publishers,2002
3. David T Plummer - Practical Biochemistry- 3rd edition - McGraw Hill Publishers,2005
4. Sawhney SK, Randhir Singh - Introductory Practical Biochemistry - 2nd edition - Narosa Publishers,2001
5. Kanai L Mukherjee - Medical Laboratory Technology - Volume I - Tata Graw Hill Publication Company Limited,2010

* Innovative Component (IC) assessed through Field Project

B.Sc. Computer Science

UCCSU20 - PRACTICAL XII: PROJECT WORK

Year: III	Course Code:	Title of the Course:	Course Type:	Course Category:	H/W	Credits	Marks
Sem: VI	UCCSU20	Practical XII: Project Work	Practical	Core	2	2	40+60

Course Learning Objectives (CLO)

1. Acquire practical knowledge on the implementation of the programming concepts learnt.
2. Motivate the Students to work in emerging/latest technologies.
3. Help the students to develop ability, to apply theoretical and practical tools/techniques.
4. To solve real life problems related to industry, academic institutions and research laboratories.
5. Help the students to gain Self-confidence.

GUIDELINES FOR PROJECT WORK

- Each student should carry out individually one project work and it may be a work using the software packages that they have learned or the implementation of concepts from the papers studied or implementation of any innovative idea focusing on application-oriented concepts.
- The project work should be compulsorily done in the college only under the supervision of the department staff concerned.
- The project is of 3 hours/week for one (semester VI) semester duration and a student is expected to plan, analyze, design, code and implement the project. The initiation of project should be with the project proposal. The synopsis approval will be given by the project guides.
- For the project work, the guide(internal) will evaluate the work for 40 marks based on the performance of the candidates during the development of the project and the external examiner will evaluate the project work as follow
 - Project Report -40 marks
 - Viva Voce -20 marks

SEMESTER VI
UCMBM20 - CORE PRACTICAL IV: ECOLOGY, FOOD AND DAIRY

Year III	Course Code	Title Of The Course	Course Type	Course Category	H/W	Credits	Marks
SEM : VI	UCMBM20	Ecology, food and Dairy Microbiology	Practical	Core	3	4	100

Course Objective:

To provide hand on experience on isolation and characterization of microbes from different food sources, agricultural and environmental samples.

Course Outcomes (CO):

At the end of the course, the learners will be able to;

CO1: Assess the microbiological quality of raw milk by MBRT and Standard Plate Count test.

CO2: Identify and enumerate bacteria and fungi from the spoiled foods and Rhizosphere soil.

CO3: Apply the technique for the isolation of yeast from food sources.

CO4: Analyze the potability of water by MPN test.

CO5: Perform the microbial test to detect soil fertility and isolate, cultivate Rhizobium from root nodule.

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	H	H	H	L	L	H
CO2	H	H	H	M	L	M
CO3	H	H	H	M	L	M
CO4	H	H	H	M	L	H
CO5	H	H	H	H	M	M

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	H	H	H	L	L	H
CO2	H	H	H	M	L	M
CO3	H	H	H	M	L	M
CO4	H	H	H	M	L	H
CO5	H	H	H	H	M	M

H – HIGH (3), M – MODERATE (2), L – LOW (1)

COURSE SYLLABUS

1. Isolation of microorganisms from air by Settle plate technique.
2. Isolation and counting of faecal bacteria from water.
3. Water analysis by MPN technique

- i. Presumptive coli form test
 - ii. Confirmed coli form test
 - iii. Completed coli form test.
4. Enumeration of number of bacteria in milk by Standard plate count method.
5. Methylene blue reductase test to assess the quality of milk.
6. Isolation of Lactobacilli and Staphylococcus from curd.
7. Examination of common house hold mold – LPCB wet mount.
8. Isolation of bacteria and fungi from Spoiled food.
9. Isolation of yeast from food sources – Grapes and Sugarcane juice.
10. Isolation & Enumeration of bacteria and fungi from Rhizosphere soil.
11. Microbial test for Soil fertility – Phosphate Solubilization and Nitrate reduction test.
12. Isolation of *Rhizobium* from root nodule.

REFERENCE BOOKS:

1. Dubey R.C and Maheswari D.K (2004). Practical Microbiology 1st edition, S.Chand & Company Ltd., New Delhi.
2. Kannan N (2003). Handbook of Laboratory Culture Media, Reagents, Stains and Buffers. Panima Publishing Corporation, New Delhi.
3. James G Cappuccino and Natalie Sherman (2004). Microbiology: A laboratory manual. 6th edition, Published by Pearson Education, United States.
4. Monica Cheesbrough (2005) District Laboratory Practice in Tropical Countries - Part I and II. 2nd edition, Cambridge University Press, New Delhi.

OER:

VIRTUAL LABS/ INTERACTIVE SIMULATIONS:

1. www.vlab.co.in
2. www.aview.in/aview
3. www.pbs.org
4. www.micro.magnet.fsu.edu/primer/java/scienceopticsu

* Innovative Component (IC) assessed through Field Project

B.Sc. Visual Communication

SEMESTER –V

UCVCM20 -- PRACTICAL VI: INTERNSHIP

Year: III Sem: V	Course Code: UCVCM20	Title of the Course: Internship	Course Type: Practical VI	Course Category: Core	H/W 2	Credits 4	Marks 100
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Objective:

- To train students in the field of television production with first-hand experience working in a television news organization for a month as an internee. One month training in media will expose the students to actual working conditions of daily on online news media or electronic media (TV and Radio studio). This internship is intended to enable students acquire field experience and journalistic skills of reporting, writing and editing for medium of their choice. Students will be required to maintain a journal recording their daily events in detail and submit a report on their activities at the end of the training.

Course Outcomes (CO)

The Learners will be able to

CO1: Outline the concepts of News production in Television Medium.

CO2: Acquiring an in-depth knowledge in the Respective Media Industry.

CO3: Compiling the Types of Work done in News Production.

CO4: Evaluating the Experience gained in News Production.

CO5: Substantiate the Report with proper documents.

CO	PSO					
	1	2	3	4	5	6
CO1	H	H	H	H	H	H
CO2	H	H	M	H	H	H
CO3	H	H	H	H	H	H
CO4	H	H	H	H	H	H
CO5	H	H	H	H	H	H

(Low - L, Medium – M, High - H)

CO	PO					
	1	2	3	4	5	6
CO1	H	H	H	H	H	H
CO2	H	H	H	M	H	H
CO3	H	H	H	M	H	H
CO4	H	H	H	M	H	H
CO5	H	H	H	M	H	H

(Low - L, Medium – M, High - H)

Course Syllabus:

Order of details expected in the Internship Report

College Certificate

Certificate from Media Industry

Acknowledgements

Table of Contents

List of Figures

Synopsis

1. Introduction

- 1.1 About the Media in general
- 1.2 About the Media Industry
- 1.3 About the Team
- 1.4 Areas of Field Experience
- 1.5 Outstanding Individual Works

2. (Divide the successive Chapters based on Issue/Type of Work/Chronological Events, giving a detailed account of the work done, substantiating it with scripts, photographs, clippings of the telecast, etc.)

3. (Second Last Chapter) About the experiences and lessons learnt from them, categorized according to content.

4. Conclusion

Appendix A (Photographs: Workplace, Team)

Appendix B (Photographs: Reported Issues, Press Meets, etc)

Appendix C (Press Release, Hand-Outs, Notices, News Script samples, etc)

Cognitive Level: K1, K2, K3, K4.

The Internal Evaluation for 40 marks is based on the journal, proof of work (photographs, clippings, script, press release/handouts, etc collected during the internship), and the preparation of the final report.

The Semester examination (60 Marks) is based on the evaluation of the Internship Report (50 marks) and Viva-Voce (10 marks).

B.Sc. Zoology

SEMESTER V- MAJOR ELECTIVE I A
UEZOA20- ECONOMIC ZOOLOGY

Year	SEM	Course code	Title of the Course	Course Type	Course Category	H/W	Credits	Marks
III	V	UEZOA20	Economic Zoology	Theory	Core Elective	5	5	100

Objectives:

- To learn the economic importance of animals
- To motivate the students to become entrepreneurs

Course Outcomes:

On completion of the course the student will be able to...

CO1:Demonstrate culture techniques of apiculture, sericulture, lac culture and vermiculture.

CO2: Illustrate the preparation and management of fish culture ponds.

CO3: Differentiate breeds of fowl and describe poultry and piggery management.

CO4: Discuss Dairy farming and tanning process.

CO5: Explain processing of wool, fur and obtains insight of pharmaceutical products from animals.

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

Unit 1: (15 Hours)

- 1.1: Introduction- Culture methods- equipments – Apiculture. (K1, K2, K3)
- 1.2: Apiculture- Products- disease and control measures. (K1, K2, K3)
- 1.3: Culture methods- equipments Sericulture. (K1, K2, K3)
- 1.4: Products- disease and control measures in Sericulture. (K1, K2, K3)
- 1.5: Culture methods- equipments Vermiculture. (K1, K2, K3)
- 1.6: Culture methods- equipments Lac culture. (K1, K2, K3)

Unit 2:(15 Hours)

- 2.1: Aquaculture-fresh water fishery-farm management. Seed collection-culture techniques. (K1,K2,K3)
- 2.2: Edible fishes. Equipments, nets and traps. (K1, K2, K3)
- 2.3: Marine fish culture. (K1, K2, K3)
- 2.4: Prawn culture. (K1, K2, K3)
- 2.5: Pearl culture. (K1, K2, K3)
- 2.6: By products of fishing industry- Diseases of Fish and prawn. (K1, K2, K3)

Unit 3: (15 Hours)

- 3.1: Poultry management – breeds of fowls - selection of breeds. (K1, K2, K3)
- 3.2: Fowl house – types of rearing – feeds. (K1, K2, K3)
- 3.3: Poultry products. (K1, K2, K3)
- 3.4: Preservation of eggs-by products of egg. (K1, K2, K3, K4)
- 3.5: Disease of fowls and control. (K1, K2, K3)
- 3.6: Piggery industry and byproducts. (K1, K2, K3)

Unit 4: (15 Hours)

- 4.1: Dairy farming - breeds of milch animals. (K1, K2, K3)
- 4.2: Housing. (K1, K2, K3)
- 4.3: Feeds. (K1, K2, K3)
- 4.4: Disease and control. (K1, K2, K3)
- 4.5: Leather industry -processing of leather. (K1, K2, K3)
- 4.6: Tanning - oil and chrome tanning - finishing. (K1, K2, K3)

Unit 5: (15 Hours)

- 5.1: Wool – properties. (K1, K2, K3)
- 5.2: Wool- processing. (K1, K2, K3)
- 5.3: Fur industry – fur bearing animals. (K1, K2, K3)
- 5.4: Processing of fur. (K1, K2, K3)
- 5.5: Care of fur products. (K1, K2, K3)
- 5.6: Pharmaceutical products from animals. (K1, K2, K3)

Books for Study and Reference:**Textbooks:**

1. Ahsan J., and Sinha SP- Handbook of Economic zoology, S. Chand and Co., New Delhi, 2009.
2. Shukla GS, and Upadhyay SP- Economic Zoology, Ratogi Publication, Meerut, 1994.

Reference Books:

3. Mary Violet Christy A-Vermitechnology, MJP Publication Chennai,1976.
4. Ayyar TVT- Handbook of Economic Entomology for South India, Govt press, Madras, 1963.

5. Jhingran VG- Fish and fisheries of India, Hindustan Publishing Corp., New Delhi, 1982.
6. Jawaid Ahgan, Subhas Prasad Sinha- A Hand book on Economic Zoology, S. Chand & Co. Ltd., New Delhi, 2000.

E-Resources:

<http://csb.gov.in>

<http://www.fao.org>

<http://nfdb.gov.in>

SEMESTER VI – CORE PRACTICAL III**UCZOL20 – PHYSIOLOGY, DEVELOPMENTAL BIOLOGY, AND ECONOMIC ZOOLOGY.**

Year	SEM	Course code	Title of the Course	Course Type	Course Category	H/W	Credits	Marks
III	V & VI	UCZOL20	Core Practical-III	Practical	Core	3	5	100

Objectives:

- To obtain practical skills physiology.
- To learn about development of animals.
- To understand the economic importance of animals.

Course Outcomes:

On completion of the course the student will be able to...

CO1: Demonstrate experiments in Physiology.

CO2: Demonstrate expertise in handling instruments.

CO3: Identify developmental stages, placenta and histology in development biology.

CO4: Apply equipments used in rearing techniques.

CO5: Discuss the economic importance of animals.

CO/PSO	PSO					
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	H	H	M	H	L	L
CO2	H	H	H	H	L	H
CO3	H	H	H	H	L	H
CO4	H	H	H	H	M	H
CO5	H	H	H	H	M	H

CO/PO	PO					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	H	H	H	L	M	L
CO2	H	H	M	L	M	L
CO3	H	H	H	L	M	L
CO4	H	H	H	L	M	H
CO5	H	H	H	H	M	H

PHYSIOLOGY:

1. Detection of nitrogenous waste products in Fish Tank Water, Bird's Excreta and Cow's Urine.
2. Study of Human Salivary Amylase Activity in relation to pH.
3. Study of Human Salivary Amylase Activity in relation to Temperature.
4. Oxygen Consumption in Fish with reference to Body Weight.
5. Differential Count of WBC.
6. Estimation of Haemoglobin - Sahli's Method.
7. Kymograph, Respirometer.

DEVELOPMENTAL BIOLOGY:

1. Frog – 4 cell, 8 cell and 32 celled stages, Blastula, Gastrula.
2. Chick-18, 24, 48hr Embryos.
3. T.S of Testis and Ovary.
4. Human Ovum and Sperm.
5. Placenta - Sheep, Human, Yolk Sac Placenta of Shark.

ECONOMIC ZOOLOGY:

1. Spotters / Charts of equipments of sericulture and apiculture- Chandraki, Rearing tray, Rearing stand, Honey extractor, Smoker, Modern Hive.
2. Egg, Honey, Lac, Silk, Pearl, Hide and Leather
3. Edible fish: Tilapia, Anabas, Shark, Catla.
4. Field Visit Report.

* Innovative Component (IC) assessed through Field Project

B.Sc. Psychology
UCPYP22 - COMPULSORY PROJECT

Year/ Sem	Course Code	Title of the Course	Course Type	Course Category	H/W	Credits	Marks 100
III / VI	UCPYP22	Compulsory project	practical	project	5	5	80+20=100

OBJECTIVE:

To equip students with professional competence based on their core subjects learnt.

CRITERIA: To complete these courses, the following are required to be completed before the semester examinations.

Sl. No	Activities	Marks
1	Field visits to any two of the following places: <ul style="list-style-type: none"> • Mental Health Centre • Rehabilitation Centre • Special Education School • Orphanage • Old age Home To be submitted as reports	20
2	Create and conduct workshops (5 hours) <ul style="list-style-type: none"> • Create two workshop modules that last for a duration of 1 – 2 hours each • Submit a workshop proposal consisting of : aim, objectives, venue, date, number of participants, tabulated program outline along with materials to be used (PPT, Videos, etc) 	20
3	Peer Counselling and submission of one case conceptualization.	20
4	<ul style="list-style-type: none"> • Conduct a simple research and submit their report Or <ul style="list-style-type: none"> • Administer any assessment tool for a learning disability and submit a case report 	20
5	Individual supervision for 3 hours	-
6	Group supervision for 10 hours	-
7	Record	20
	TOTAL	100

B.Com (B &I)**UCBIO20 – PROJECT**

- During the fifth semester every student shall undertake a Project under the guidance of a supervisor/ guide from among the Staff members in the Department.
- The student shall select a topic related to Banking/ Insurance sectors and carry out the research study in a Public/ Private Sector Banks/ Insurance Companies.
- A Questionnaire shall be framed, and Sample Size shall be of 35.
- The student shall submit the dissertation at the fifth semester.
- The dissertation shall be valued for 100 marks.
- The allotment of marks shall be as follows:
Internal Valuation – 40 Marks.
External Valuation of the dissertation – 40 Marks.
Viva Voce by the External Examiner – 20 Marks.

Course Objectives

- a) To enable students to undertake a relatively major research work related to Bank and Insurance sector.
- b) To enable students to write the research work in an effective manner.
- c) To provide a holistic knowledge on overall management, operation and functions of bank and insurance sector.

Course Outcomes (CO):

The Learners will be able to

- ☐ Identify Research Problem.
- ☐ Able to identify sample and collect data.
- ☐ Conduct research independently
- ☐ Demonstrate the skill of working on SPSS
- ☐ Carry out research in specialized areas like Bank and Insurance sector. Transmit their knowledge to the society.

CO/ PO	PO					
	1	2	3	4	5	6
CO1	H	H	H	M	H	H
CO2	H	H	H	M	M	H
CO3	H	H	H	M	H	H
CO4	H	H	H	M	H	H
CO5	H	H	H	M	H	H

H- HIGH M-MEDIUM L-LOW

CO/PSO	PSO					
	1	2	3	4	5	6
CO1	M	M	H	H	H	H
CO2	H	H	M	H	H	H
CO3	H	H	M	H	H	H
CO4	H	H	H	H	H	H
CO5	M	H	M	H	M	H

B.H.A
UCHAP20 - PROJECT

Year:	Course Code:	Title of the Course:	Course Type:	Course Category:	H/ W	Credits	Marks
III	UCHAP20	Project	Practical/ Theory	Core	2	4	100
Sem:							
V							

Objectives

1. To discover potential research areas in the field of management and hospital administration.
2. To enable students to understand the challenges in the work environment.
3. To develop better insight in the existing literature.
4. To enable students to use analytical techniques and provide suitable solutions for the problems.
5. To improve the decision making skills of the students.

COURSE OUTCOMES (CO)

1. Identify the existing problem in the work environment.
2. Devise a suitable plan for solving the problem.
3. Understand and interrelate fundamental aspects based on the available literatures.
4. Analyse and interpret data for decision making.
5. Document and provide feasible solutions which will promote the organisation growth and the student's career growth.

CO	PO					
	1	2	3	4	5	6
CO1	H	M	M	H	H	M
CO2	H	M	H	H	H	M
CO3	H	M	M	M	H	H
CO4	H	M	H	M	H	M
CO5	H	M	H	H	H	M

CO	PSO					
	1	2	3	4	5	6
CO1	H	H	M	M	H	H
CO2	H	H	M	M	H	H
CO3	M	M	M	M	H	H
CO4	H	M	M	H	H	H
CO5	H	M	M	M	H	H

(Low - L, Medium - M, High - H)

Syllabus

Each student shall belong to a team of 5 and are required to prepare the report on the basis of investigation carried out in a particular problem area identified by them in a hospital. The report should demonstrate the capability of the students for some creative potential and original approach to solve the practical problems in day today activities in a hospital.

The report should include surveys, interpretation, planning and design of improved integrated management systems in a hospital, presented in a comprehensive manner and viva voce examination will be conducted on the basis of the report.

Evaluation Pattern

- **The mode of evaluating the project will consist of two parts. One on the basis of report writing and the other will be through Viva Voce Examination**
- **The valuation of the report writing and Viva Voce Examination will be done by the internal and external examiner.**
- **60 marks will be awarded for report writing and 20 marks for overall review and 20 marks for oral examination.**
- **Project will be for a period of 1 month which will be during the II year in the month of May.**
- **Each team should find a reputed hospital to carry out her investigation with the approval of the department.**
- **After completing the Project, the students should get an Attendance Certificate from the hospital.**

The following are the components for report writing

Content	40 Marks
Methodology	10 Marks
Layout	10 Marks
Overall Performance Review	20 Marks (CA – 80 Marks)
Viva Voce	(Semester 20 Marks)
Oral Presentation	10 Marks
Question and Answer	10 Marks

B.H.A
SEMESTER VI
UCHAR20 - INTERNSHIP (2 MONTHS)

Year:	Course Code:	Title of the Course:	Course Type:	Course Category:	H/ W	Credits	Marks
III	UCHAR20	Internship	Practical	Core	-	8	100
Sem:							
VI							

Objectives

- 1. To explore alternatives prior to graduation.**
- 2. To integrate theory and practice.**
- 3. To assess the interests and abilities in the field of management and hospital administration.**
- 4. To develop work habits and attitudes necessary for work environment.**
- 5. To build a record of work experience.**

COURSE OUTCOMES (CO)

- 1. Identify work and its function in the economy**
- 2. Develop communication, interpersonal and other critical skills for employability.**
- 3. Realize the importance of professionalism in the workplace.**
- 4. Gain ethical experience in organizational culture.**
- 5. Ability to identify the diverse needs and global issues for sustainable growth.**

CO	PO					
	1	2	3	4	5	6
CO1	L	H	M	L	H	M
CO2	L	H	M	L	H	M
CO3	L	H	M	L	H	M
CO4	L	H	M	L	H	M
CO5	L	H	M	L	H	M

CO	PSO					
	1	2	3	4	5	6
CO1	H	M	M	M	H	H
CO2	H	M	M	M	H	H
CO3	H	M	M	M	H	H
CO4	H	M	M	H	H	H
CO5	H	M	H	M	H	H

(Low - L, Medium - M, High - H)

Syllabus

Each student shall be required to prepare the report on the basis of training undergone by her in a hospital. The report should demonstrate the capability of the students in studying the hospital and its services and activities in totality.

Evaluation Pattern

- Each student should undergo the training separately.
- The mode of evaluating the student will consist of two parts. One on the basis of report writing and the other will be through Viva Voce.
- The valuation of the report writing will be by the internal examiner while for the oral examination an external examiner will be called for.

- **60 marks will be awarded for report writing and 20 marks for overall review and 20 marks for oral examination.**
- **Training will be for a period of 3 months which will be during the last semester of the course.**
- **Each student should find a reputed hospital to carry out her investigation with the approval of the department.**
- **After completing her training, the student should get an Attendance Certificate from the hospital.**

The following are the components for report writing

Content	50 Marks
Layout	10 Marks
Overall Performance Review	CA – 60 Marks
Viva Voce	Semester 40 Marks
Oral Presentation	20 Marks
Question and Answer	20 Marks

B.A History

Museology

Unit I

- 1.1. Definitions of Museum and Museography, Museology.
- 1.2. Types of Museums
- 1.3. ICOM Museum 's Definition
- 1.4. Classification of Museum
- 1.5. ICOM basis of Museum Classification

Unit II

- 2.1. History of Museum
- 2.2. Museum Collection
- 2.3. Some Major Museums of the World (British Museum, Smithsonian),
- 2.4. Louvre, Hermitage, Topkapi
- 2.5. Role of UNESCO and ICOM in the Development of Museum

Unit III

- 3.1. History of Museum in India
- 3.2. Nature and scope of Museum
- 3.3. Major Museum of India (Indian Museum Kolkatta, National Museum, National Museum in

Natural History,

3.4. Salarjung Museum, Indhira Gandhi Rasgtriya Manav Sangrahalya

Unit IV

- 4.1. State Museums of Tamil Nadu
- 4.2. Popular Museums of Tami INadu
- 4.3. Government Museum Chennai
- 4.4. Sections of the Chennai Museum
- 4.5. Functions of the Museum

Unit V: Development of Museology

- 5.1. New Museology , Concept of Eco Museums,
- 5.2. Para Museums,
- 5.3. Virtual Museum
- 5.4. Museology as a profession – Works of the Curator
- 5.5. Employment opportunity

Practical : Visit to the Museum

* Innovative Component (IC) assessed through Field Project

**M.A English
PCENP20
RESEARCH PROJECT**

Course Outcomes (CO)

On Completion of the Course the Learners will be able to:

1. Demonstrate knowledge of research methods, theories and research context in Literature and Language teaching
2. Explain a research problem/question foregrounded against the relevant literary context and/or research context
3. Apply relevant and result-yielding research methods, approaches and theories to the conduct of qualitative and quantitative research
4. Organise and evaluate the relevant sources of scientific evidence to construct a well-supported, research statement and/or logical argument
5. Devise a framework of expository writing to present the trajectory, context and outcome of the research

CO/PO	PO					
	1	2	3	4	5	6
CO1	H	H	H	M	M	M
CO2	H	H	H	H	H	M
CO3	H	H	H	H	M	M
CO4	H	H	H	H	H	H
CO5	H	H	H	H	H	H

H - High – (3), M - Moderate (3), L - Low (1)

Preliminary Requirements:

- Knowledge of the types of Research, Deductive and Inductive Arguments, Critical Approach, Research ethics, Bibliography.
- The research work must be strictly an individual sincere work, the result of ardent study and pursuit of excellence. The work should not exceed 10,000 words and there will be viva- voce by an examiner.
- This module gives the opportunity to undertake supervised work on a dissertation in Literature or English Language Teaching up to 10,000 words, on a topic of one's choice agreed with the Guide/supervisor.
- **It is strongly recommended that the student must be motivated to begin the Preliminary reading and survey of related secondary sources for the dissertation in the first summer term and vacation holidays.**
- The students can be encouraged to present papers in the conferences and to publish in the proposed topic.

Essential Reading

a) Where And How To Find Secondary Literature

b) How to Write a Scholarly Paper

From *An Introduction to Literary Studies*- Mario Klarer Pub.London,Routledge. 2004

c)The Undergraduate Dissertation

From *In Pursuit of English Studies*.Barry,Peter.New Delhi, Bloomsbury.2014

d)Gupta,Suman.ThePlace of Theory In LiteraryDisciplines

From DaSousa, Delia Correa and W.R.Owens. *The Handbook to Literary Research*, second Edition. Routledge: Taylor and Francis Group, The Open University Abingdon-Oxon. 2010.

**M.S.W
SEMESTER IV**

PCSWK20- RESEARCH PROJECT

COURSE OBJECTIVES:

- To understand application of Social Work research
- To apply learning of research methodology, tools , techniques
- To undertake a research study on relevant social issues applying ethics and principles
- To consolidate, analyse and interpret data collected
- To understand and apply statistics where appropriate
- To apply skills in report writing in research and to provide workable solutions and effect social change

The students are placed under a supervisor for the research project work. The students start the project work in the third semester itself. Each student identifies a research problem, defines the problem, collect the review of literature, objectives, prepare a proposal, formulate the research problem and construct a tool for data collection.

After the completion of the third semester and before starting the fourth semester the students collect the data. In the fourth semester the students complete the data processing and complete the research study and submit the final copy of valuation.

At the end of the semester viva is conducted by an external examiner and the marks are awarded. (60 marks record by the supervisor and 40 marks for viva voce)

M.B.A

PCBAQ20- PROJECT

Year/Sem	Course Code	Title of the Course	Course type	Course Category	H/W	Credits	Marks
II /IV	PCBAQ20	Project	Project	Skill Paper	6	6	100

OBJECTIVES

1. To discover potential research areas in the field of specialization
2. To offer students a glimpse into real world problems and challenges
3. To motivate students to the vast array of literature available on the various research challenges in the organization
4. To enable students to use analytical techniques and to give solution for a problem
5. To improve the communication and management skills of the students

COURSE OUTCOMES

The learners will be able to

CO1: Compare and contrast several existing solutions for research challenge

CO2: Formulate and propose a plan for creating a solution for the research plan identified

CO3: Conduct a survey of several available literature in the preferred field of study

CO4: Be able to report and present the findings of the study conducted in the preferred domain

CO5: Demonstrate an ability to work in teams and manage the conduct of the research study

CO	PO					
	1	2	3	4	5	6
CO1	H	H	M	H	H	H
CO2	H	M	M	H	M	H
CO3	H	H	H	H	H	H
CO4	H	M	H	M	H	M
CO5	H	H	H	M	H	M

CO	PSO					
	1	2	3	4	5	6
CO1	L	H	H	L	H	M
CO2	L	H	H	L	M	M
CO3	M	H	H	L	M	M
CO4	M	H	H	L	M	L
CO5	M	H	H	L	H	H

H-HIGH(3), M-MODERATE(2), L-LOW(1)

Each student is required to do a project and prepare the report on the basis of investigation carried out by her in an institution or industrial organization. The student is expected to identify a problem in the organization based on her area of specialization and provide solutions and suggestions to the management. The report should demonstrate the capability of the students in analyzing and evaluating the problem and to create original approach in providing solutions to the problem.

The project should include field studies, surveys, interpretation, planning and design of the research methodology presented in a comprehensive manner with recommendations for solutions based on scientifically worked out data and viva will be conducted on the basis of the report and presentation.

Evaluation Pattern

- Each student should carry out her investigation separately.
- The mode of evaluating the student will consist of two parts. One, on the basis of report writing and the other will be through Viva Voce.
- The valuation of the project report writing will be done by the internal examiner while for the oral examination an external examiner will be called for.
- 60 marks will be awarded for project report writing, 20 marks for overall review and for oral examination 20marks.
- Project will be for a period of 3 months which will be during the month of February - April of every academic year.
- Each student should find a reputed industry to carry out her investigation with the approval of the department.
- Records should be maintained for daily activities signed by the concerned authorities in the organization
- Students should report to the college as per the schedule of the review meeting. Attendance will be maintained and marks are allotted for there view
- On completion of the project, the student should get Completion Certificate and Attendance Certificate from the company.
- Any change of the organization during the course of the project should be done only after getting the consent from the Head of the Department and the internal guide of the College in writing.

The following are the components for report writing

- | | |
|--|--------------------------|
| • Content | - 40Marks |
| • Methodology | - 10Marks |
| • Layout | - 5Marks |
| • Grammar | - 5Marks |
| • Review of the Project and Attendance | -20 Marks (CA – 80Marks) |
| • Viva-Voce | - (Semester - 20Marks) |
| • Oral Presentation | - 10Marks |
| • Question and Answer | - 10Marks |

M.COM**SEMESTER – IV****PCCOR20 - PROJECT**

Year: II	Course Code:	Title of the Course:	Course Type:	Course Category:	H/W	Credits	Marks
Sem: IV	PECOH20	Project	Practical	Core	5	2	100

Course Objectives

To develop an interest for research among students and expose them to the practical aspects in Business, Trade and Industry

Course Outcomes (CO)

The learners will be able to

1. Conduct a survey about a topic on Commerce, Marketing, Finance or Social Sciences
2. Prepare a Research Report on the study and its findings using relevant data analysis
3. Suggest to organizations and the society regarding various research problems

COs consistency with POs

CO	PO									
	1	2	3	4	5	6	7	8	9	10
CO1	H	H	H	H	M	M	M	H	M	H
CO2	H	H	H	H	H	H	M	H	H	H
CO3	H	H	H	H	H	H	M	H	H	H

(Low - L, Medium – M, High - H)

COs consistency with PSOs

CO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
1	H	H	H	H	M	M
2	H	H	M	H	H	M
3	H	M	M	M	M	M
4	H	M	M	M	H	H
5	M	M	M	H	H	M

Low – L, Medium – M, High – H

Course structure

Period	Student's Activity	Staff Supervisor's Activity	Department's Activity
II Semester	The student selects a topic related to Business/ Finance/Trade/ Marketing for study.	The student is introduced to the Methodology and Techniques of research through the Paper Research Methodology	Each student is assigned to a staff supervisor with the help of who she is made to select a topic related to Business/ Finance/ Trade/ Marketing for Study.
Summer Holidays after II Semester	The student prepares the first draft of the Questionnaire.	The student is made to review and collect literature related to her topic. The first draft of the Questionnaire	
III Semester	The student finalises the Questionnaire The student selects the sample (Sample size is 100) and collect data. The Student prepares the rough draft of the Dissertation.	The first draft of the Questionnaire is checked.	A workshop is conducted on 'SPSS and its application in Research', with special reference to the topics selected.
IV Semester	The student prepare the final draft of the Dissertation after two reviews by the staff supervisor. The student submits the Dissertation in two copies.	The final draft of the Dissertation is reviewed.	A Viva Voce is conducted before the End-Semester Examination during late February/early March by an external Examiner.

M.Sc. Biochemistry

<i>II Year IV Semester</i>				
Subject Code	Title of the Paper	Hrs/Week	Credit	Marks
PCBCL20	Molecular Biology	6	5	40+60
PCBCM20	Advanced Clinical Biochemistry	6	5	40+60
PCBCN20	Practical III: Main Practical III	5	4	40+60
PCBCO20	Practical IV: Main Practical IV	5	4	40+60
PEBCG20	Elective IV A: Plant Biochemistry	3	3	40+60
PEBCH20	Elective IV B: Herbal Therapy			
	Project/ Dissertation with Viva-Voce	5	5	40+60
PIBCG20	IE IV A: Psychology	-	2	100
PIBCH20	IE IV B: Entrepreneurial Biochemistry	-	2	100
TOTAL		30	26	600
GRAND TOTAL			90	2200
Independent Elective			8	

M.Sc. Chemistry

IV	PCCHM20	Natural Products and Bioorganic Chemistry	5	3	-	4	40+60
	PCCHN20	Solid State Chemistry and Nuclear Chemistry	5	3	-	4	40+60
	PCCHO20	Thermodynamics	5	3	-	5	40+60
	PECHG20	Elective IV A: Organometallic and Bioinorganic Chemistry	5	3	-	4	40+60
	PECHH20	Elective IV B: Organic Farming and Solid Waste Management					
	PCCHP20	Practical IV: Organic Chemistry II	3	-	-	3	40+60
	PCCHQ20	Practical V: Inorganic Chemistry II	4	-	-	3	40+60
	PCCHR20	Practical VI: Physical Chemistry II	3	-	-	3	40+60
	PICHH20	CSIR-NET Preparatory Course in Physical Chemistry	0				
	PICHI20	Advanced Instrumentation Techniques					
	PICHJ20	Leather Chemistry		3	-	2*	

							40+60
		Total	30	-	-	26+2*	700+100
		Grand Total				90+8*	2400+400
	PSCHA20	Summer Research Project	-	-	-	2	100

M.Sc. Computer Science

IV		PCCSQ20	Project Work	10	40+60
Grand Total				90	2200

M.Sc. Electronic Media

SEMESTER III

Year: II	Course Code:	Title of the Course:	Course Type:	Course Category:	H/W	Credits	Marks
Sem: III	PCEMN20	Internship	Practical	Core	3	3	100

PCEMN20 - PRACTICAL – V: INTERNSHIP

Course Objective:

One-month training in media will expose the students to actual working conditions in any Reputed Production House. This internship is intended to enable students acquire field experience. Students will be required to maintain a journal recording their daily events in detail and submit a report on their activities at the end of the training.

Course Learning Outcomes (CO)

The Learners will be able to

- CO 1: Discuss the concepts of production house in Television Medium.
 CO 2: Acquiring an in-depth knowledge in the Respective Media Industry.
 CO 3: Compiling the Types of Work done in the Production house.
 CO 4: Evaluating the Experience gained in Production house.
 CO 5: Substantiate the Report with proper documents.

CO	PSO					
	1	2	3	4	5	6
CO1	H	H	H	H	H	M
CO2	H	H	H	H	H	H
CO3	H	H	H	H	H	H
CO4	H	H	H	H	H	H
CO5	H	M	H	H	H	H

CO	PO					
	1	2	3	4	5	6
CO1	H	H	H	H	H	H
CO2	H	H	H	M	H	H
CO3	H	H	H	M	H	H
CO4	H	H	H	M	H	H
CO5	H	H	H	M	H	H

(Low- L, Medium - M, High - H)

Order of details expected in the Internship Report

College Certificate

Certificate from Media Industry

Acknowledgements

Table of Contents

List of Figures

Synopsis

5. Introduction

1.1 About the Media Industry

1.2 About the Team

1.3 Areas of Field Experience (asst. Director, Script writer, time keeper, helper etc.,)

1.4 Outstanding Individual Works

6. (Divide the successive Chapters based on Issue/Type of Work/Chronological Events, giving a detailed account of the work done, substantiating it with scripts, photographs, clippings of the telecast, etc.)

7. (Second Last Chapter) About the experiences and lessons learnt from them, categorized according to content.

8. Conclusion

Appendix A (Photographs: Workplace, Team)

Appendix B (Notices, Ads, Script samples, etc)

Cognitive Level: K1,K2,K3,K4,K5,K6

The Internal Evaluation (40 Marks) is based on the preparation of the final report.

The Semester examination is based on the evaluation of the Internship Report (20 marks) and Viva-Voce (40 marks).

M.Sc. Mathematics**PCMAP20 - PROJECT**

Year : II	Course Code :	Title Of The Course:	Course Type : -	Course Category :	H/W	CREDITS	MARKS
SEM : IV	PCMAP20	Project		-	6	4	100

It should be done individually under the guidance of one of the Faculty members. The Dissertation should be submitted before 31st March. The students should present their research work during the viva-voce.

M.Sc Physics

III	PCPHI20	Spectroscopy	6	3	-	4	40+60
	PCPHJ20	Quantum Mechanics –II	6	3	-	4	40+60
	PCPHK20	Microprocessor and Micro-controller	6	3	-	4	40+60
	PCPHO20	Practical III: General	4	-	-	-	-
	PCPHP20	Practical IV: Microprocessor, Microcontroller & C-Programming	4	-	-	-	-
	PEPHE20	Elective III A: Numerical Methods and C Programming	4	3	-	4	40+60
	PEPHF20	Elective III B: Advanced Optics					
	PGTRA16	Teaching and Research Aptitude		3	-	3	40+60
	PIPHE20	IEP: Physics For Set/Net - Paper III	-	3	-	2	40+60
	PIPHF20	IEP: Numerical Methods & Research Methodology					
	PSPHA20	Summer Project – Viva Voce				3	40+60

M.Sc. Zoology

IV	PCZOM20	Physiology and Endocrinology	7	3	-	4	40+60
	PCZON20	Developmental Biology and Immunology	6	3	-	4	40+60
	PCZOO20	Evolution	6	3	-	4	40+60
	PCZOP20	Core Practical III	3	-	4	4	40+60
	PCZOQ20	Core Practical IV	3	-	4	4	40+60
	PEZOE20	Elective IV A: Fishery Biology	5	3	-	5	40+60
	PEZOF20	Elective IV B: Aquaculture and Farm Management					
	PIZOG20	Independent Elective IV A: Biosystematics	-	-	-	2	100
	PIZOH20	Independent Elective IVB: General Psychology					
	PIZOI20	Independent Elective IVC: Animal Care					
	Total	30	-	-	25	600	
	Grand Total				90	2300	
	Teaching and Research Aptitude	5	3	-	3	100	
	Summer Project	-	-	-	3	100	
	Independent Elective	-	-	-	8	-	

M.Sc. Microbiology

IV	PCMBL20	Microbial Gene Technology	6	3	-	4	40	60	100
	PCMBM20	Bioethics and Biosafety	6	3	-	4	40	60	100
	PCMBN20	Main practical –III: Genetic Engineering	5	-	6 hr/day 2days	5	40	60	100
	PCMBO20	Main practical –IV : Textile and Cosmetic Microbiology	5	-	6 hr/day 2days	5	40	60	100
	PEMBG20	Elective IV-A: Taxonomy and Microbial Biodiversity	3	3		3	40	60	100
	PEMBH20	Elective IV-B: Microbial Nanotechnology							
	PCMBP20	Project Dissertation with Viva- voce	5	-	-	5	50	150	200
TOTAL						26	250	450	700
GRAND TOTAL						90			2200