CHOICE BASED CREDIT SYSTEM (CBCS)

WITH

LEARNING OUTCOMES BASED CURRICULAR FRAMEWORK (LOCF)

FOR

B.SC. ELECTRONIC SCIENCE

UNDERGRADUATE PROGRAMME
(EFFECTIVE FROM ACADEMIC YEAR 2017-2018)

Department of Electronic Science

Faculty of Electronics

Government College for Women

Parade Ground Jammu- 180001

Introduction

Govt. College for Women, Parade Ground Jammu, an 'Autonomous College' has introduced the choice based credit system (CBCS) from the academic year 2016-17. But as per the UGC and the feedback from the stakeholders, the syllabus needs some modifications and additions to meet the requirements legally and technically.

Aims and Objectives

A curriculum course content and assessment of scholastic achievement play complimentary role in shaping the education. The committee is of the view that members should report and encourage the broad instructional goals such as giving knowledge of the discipline of Electronics, theory and techniques, concepts and general principles. They should also support the ability to ask physical questions and to obtain the answers by the use of quantitative and qualitative reasoning and by the experimental investigations. The important student friendly attributes including designing, creativity, curiosity and deep understanding levels of Electronics to other disciplines and to social issues should also be given encouragement.

With these things in mind, we aim to provide a firm foundation in every aspect of Electronics and to explain the broad spectrum of modern trends in Electronics.

This Programme also aims to develop the following abilities:-

1. Read, understand and interpret physical information- verbal, mathematical and graphical.
2. Imparting skills required to gather information from resources and to use them.
3. Offer courses as per the choice of the students.

4. Perform the experimental analysis and interpret and compose the results of the observation.
5. Use of ICT tools at the undergraduate level.
6. Providing the best facilities in the department to attract outstanding students from all background.

Objectives of the Programme

Following are the main objectives of the Programme:-

1. To provide the deep knowledge of scientific and technological aspects of Electronics.
2. Updating students with recent and technological developments.
3. Train the students by introducing skill based courses in Electronics.
4. Enrich students through programmes such as seminars, workshops, quizzes etc.
5. Train students to a level to compete for seats for the advanced degrees such as masters and other related disciplines.

Duration of the Program

The duration of the undergraduate program is six semesters. There shall be two semesters in the academic year. The odd semester (sem-I, III and V) commences from 15th of July, every year and the even semester (sem-II, IV and VI) commences in the month of January, every year. Between the semesters, there is a break of one and a half month called 'summer vacation' which commences from Ist of June to the 15th of July, and ten days winter vacations which commences from 1st of January to 10th of January, every academic year. The students may be

permitted to complete the program on valid reasons, within a period of six continuous semesters from the date of commencement of first semester of the program.

Evaluation of various components in the curriculum and marks distribution for internal and external evaluation

The final end semester examination shall be conducted by the college at the end of each semester. Internal evaluation is to be done by the internal assessment test taken one month before the start of final end semester examination and the evaluation of attendance.

For all the papers, internal and practical examination is to be taken before and after the start of final end semester examination. Thus the overall marks distribution for external and internal theory examination as well as the practical examination is shown below.

1. For all theory papers

a. Marks of external examination= 80

Marks Distribution of external examination is given below:-

External examination is comprising of three sections:

Section A, Section B and Section C

A. Section A is comprising of 10 questions, one question from each unit and each question carry 02 marks. All the questions are compulsory.

B. Section B is comprising of 05 questions, two questions from each unit and each question carry 06 marks with internal choice from each unit.

C. Section C is comprising of 05 questions, one question from each unit and each question carry 15 marks. Students are required to attempt any of the two.

Note: 15% of the total marks are reserved for numerical problems.

b. Marks of internal evaluation= 20

All the two components of internal assessments are mandatory

Component of internal evaluation of theory	Marks
Attendance	05
Internal Assessment Test/ Assignment Test	15
	20

2. For all the Practical Papers

a. Marks of external examination= 25

b. Marks of internal evaluation= 25

Internal Practical Examination

All the three components of internal assessments are mandatory

Components of internal evaluation of Practical	Marks
Attendance	05
Viva	08
Performance / Involvement in lab	12
Total	25

The practical file related to the number of experiments performed must be duly signed by the teacher in charge and must be authenticated by the HOD Electronics. For appearing in the external practical examination, certified record should also be produced.

External Practical Examination

For all the practical papers, there will be an external evaluation. The external examiner will be appointed by the Principal of the college in consultation with the HOD in charge. There will be an internal examiner who will be appointed by the head of the department. The examination will be of three hour duration and the various components for the evaluation of external examination are given below.

Components of external evaluation of Practical examination	Marks
Attendance	06
Practical Record File	06
Viva	05
Experimentation/ Data collection	08
	25

3. Assignments

Assignments are to be done for all the semesters. At least one assignment should be done in each semester for all the theory courses.

4. Internal Assessment

One internal test paper is to be taken in each semester for each theory course. The evaluation of all the components are to be published and shall be acknowledged by the candidates time to time. All the documents of internal assessments are to be kept in the custody of the convener of the internal assessment examination and shall be made available to students for verification as

and when required. The responsibility of evaluating the internal assessment is vested on the teacher in charge.

5. Attendance Evaluation

For all the courses- Theory and Practical

Percentage of Attendance	Marks
>90%	05
85%-90%	04
80%-85%	03
75%-80%	02
<75%	Ineligible

Department of Punjabi

Learning outcomes of the curriculum of the course of Punjabi

Core Course Punjabi

(2017- 2018- 2019)

B.A 1st semester

Course no.UPBTC101

OBJECTIVES:

The objectives of the course is to make students familiar with the knowledge about the Punjabi Poetry, and Punjabi Kahani. This course also ²provide knowledge about punjabi literature to students. Especially it gives knowledge about Gurmat Sahit and Sufi Sahit also.

B.A 1st semester Skill Course

Communication Skill Punjabi Course no. UPBTS101

OBJECTIVES:

This course is based on skill. It helps students to provide knowledge about Gurmukhi lipi and script.

B.A 2nd semester

Course no. UPBTC201

OBJECTIVES:

The aim and objectives of the course is to make students familiar with the knowledge about Modern Punjabi poetry, Punjabi Ikangi and Punjabi Literature. It also provides knowledge about Punjabi kissaDhara, Sukhmani Sahib and Veerkavdhara .

B.A 2ND Semester

Skill Course Punjabi

Communication Skill

Course no. UPBTS201

OBJECTIVES:

This course is based on grammer. It helps to student to basic knowledge about Punjabi grammar and folk songs and concept of translation in Punjabi from other languages.

B.A 3rd semester

Course no. UPBTC301

OBJECTIVES:

The objectives of the course is to provide knowledge about Punjabi sufism and Punjabi Lok Dhara . Lok Dhara is the origin of the literature. It helps to students to provide knowledge about folk literature , folk games, folk art, folk instruments and folk dances.

B.A 3rd semester

Skill Course Punjabi

Skill enhancement

Course no. UPBTS301

OBJECTIVES:

The objectives of the course is to provide knowledge about roots of Punjabi Language and Punjabi grammar.

B.A 4th semester

Course no. UPBTC401

OBJECTIVES:

The objectives of this course is based on the Literature and provide Knowledge about differences between Literature and society. It helps to develop interest in reading novel and its impacts on society.

B.A 4th semester

Skill course Punjabi

Skill enhancement

Course no. UPBTS401

OBJECTIVES:

This course is basic on the concept of Novel and stage performances in the field of Punjabi literature.

B.A 5th semester

Course no UGPUN-501-DSE-1

OBJECTIVES:

The objectives of this course is based on the literature of feminism. This syllabus is also provide knowledge and awareness about power and rights of women .This course is based on Feminism in international level.

B.A 5th semester

Course no. UGPUN-501-GE-1

OBJECTIVES:

The objectives of the course to make students familiar with the ideas about the topic of history and Punjabi Literature of jammu and Kashmir and also provides knowledge about Punjabi stories of Prominent writers of J&K.

B.A 5th semester

Skill Course Punjabi

Course no.UPBTS501

The aim of the course to provide knowledge about basic concepts of Computer and editing of punjabi Dictionaries.

B.A 6th semester

Course no. UGPUN601-DSE-1

OBJECTIVES:

The aim of the course to learn about Punjabi Novel and Punjabi grammar. It also provide knowledge about concept of Punjabi Novels and its impacts.

B.A 6th semester

Course no. UGPUN601-GE-1

OBJECTIVES:

This course is also provide Knowledge about safarnama of Punjabi literature. Students learn many basic knowledge about Punjabi Safarnama and Punjabi grammar. Students also take interest in world journey which they can gain many knowledge about other countries .

B.A 6th semester

Skill Course Punjabi

Course no. UPBTS601

The objectives of the course is to make students familiar with the concept of Journalism. It helps provide knowledge about Punjabi news, magazines and newspapers.

Dr. Snobar

Assistant Professor

Head of the Department

G.C. W Parade Ground Jammu

SUBJECT: SANSKRIT

Course Objectives

B.A. semester 1

Course Name: Sanskrit Poetry

Course No. UG-SKT-101(Core Course)

The objective of the course is to make student familiar with the ideas about the topics, sub topics and history of different poets. It also intends to give an understanding of literature, through which students will be able to understand the basics of Sanskrit. The course also seeks to help the students negotiate the text independently with the Help of proficiency of Sanskrit.

B.A. semester 2

Course Name: Sanskrit Prose

Course No. UG-SKT-201(Core Course)

The objective of the course is to make students familiar with the classical Sanskrit prose literature. Origin and development of prose which includes most Famous Rose text of modern era namely Shivrajvijayam for the students to get familiar with the beginning of modern Sanskrit literature.

B.A. semester 3

Course Name: Sanskrit Drama

Course No. UG-SKT-301 (Core Course)

This course aims to acquaint the students with two most famous dramas of Sanskrit literature, which not only reflect poetic excellence but also depict Contemporary society and highlight the human values.

B.A. semester 3

Course Name: Indian Theatre

Course No. UG-SKT-301(Skill Enhancement Courses)

The objective of the course is to introduce principles and practices of Indian theatre to students. The history of Indian theatre in India is very old, glimpses of which can be tracessed in the hymens of Rigveda. The dramotargy was letter developed by Bharat.

B.A. semester 4

Course Name: Sanskrit Grammar

Course No: UG-SKT-401(Core Course)

Sanskrit is much known for a long tradition of grammatical and semantic analysis of the Language. Panini's grammar has always been highly reflected for providing the best Model for structural and semantic study. This course aims to get students to learn the basics of Sanskrit grammar through LaghuSiddhantkaumudi based sangya,sandhi and vibhakti prakaran. Students will be able to Learn the application of panini's Sutras.

B.A. Semester 4

Course Name: Basic Elements of Jyotish

Course No: UG-SKT-401(Skill enhancement courses)

The main objective of course is to to teach Basic concept of JYOTISH. Major content will be origin, development and branches of JYOTISH. This will give elementary knowledge of JYOTISH.

B.A. Semester 5 (NON-CBCS)

Course Name: Vedic Sahitya (Riksukat-Sangrah) Evam Kenupnishad

This course on Vedic literature aims to introduce various types of Vedic Texts And Upanishad.

B.A. Semester 6 (NON-CBCS)

Course Name: Shrimadbhagwatgita ,Vedang And Bhasha-Vigyan

The objective of this course is to study the philosophy of self- management In Bhagwadgita , Vedanga and fundamental of Linguistics based on Sanskrit language.

B.A. Semester 5 (CBCS).

Course Name: Lokik Sahitya Ka Itihas

Course No: UG-SKT-501----DSE -l

This course aims to get students get acquainted with the journey of Sanskrit literature From Vedic literature to Purana. It also intends to give an outline of different Shastric Traditions , through which students will be able to know the different genras of Sanskrit literature .

B.A semester 5

Course Name: Basic Elements Of Ayurveda

Course No: UG-SKT-501(s) (Skill enhancement course)

This course will introduce students to the theory of Ayurveda. The theory Modules Sessions that make up this course after an introduction to Ayurveda that is well-rounded, Comprehensive and useful for students in their own day to day living. The major objective is to understand the basic principles and concepts of Preventive medicine and health maintenance, diet and nutrition, usage of Commonly used spices and herbs and outline of Ayurvedic therapeutic Procedures in Ayurveda.

B.A. Semester 5

Course Name: Basic Study of Sanskrit Literature and Grammar

Course No. (Generic) UG-SKT-501(GE)

This course aims to get students acquainted with the journey of Sanskrit literature from Vedic literature to Purana. Students will be able to know the different genre of Sanskrit literature and grammar.

B.A. Semester 6 (CBCS)

Course Name: Sankhyayog (Shreemadbhagwat Gita) , Bhashavigyan And Vayakaran

Course No: UG-SKT-601 (DSE—1)

The objective of this course is to get students to know about the principle thesis of the Gita and fundamental of linguistics based on Sanskrit language and Vayakaran. After the completion of this course the students will be able to understand the concepts of linguistics for further studies.

B.A. Semester 6 (CBCS)

Course Name: Yogsutra of Patanjali

Course No: UG-SKT-601(Skill enhancement courses)

This yoga Darshan course aims to get to know about the world's most important Texts and the vision of our ancient Yoga's tradition. For this,selected Sutras of Patanjal's Yogsutra prescribed for basic knowledge of Yog Darshan.

B.A. Semester 6 (CBCS)

Course Name: Ethical and Moral Issues In Vedic Literature

Course No: UG-SKT-601(GE) Generic

This course aims to get the students familiar with the Ethical and Moral values As depicted in Sanskrit literature.

Learning Outcomes of the curriculum of Urdu courses taught for the academic year 2017-18

B.A. Semester- I General Urdu UR-101 (MIL- Core Course)
Title: Urdu Ghazal and Afsana

Objectives: The purpose of this course is to make the students fully conversant/accustomed with Urdu Poetry, Prose and life and works of authors/poets and enable them to appreciate it adequately. This will also adjudge the ability of candidate in a precise manner.

B.A. Semester- II General Urdu UR-201 (MIL- Core Course)
Title: Nazm, Urdu Language and Essay Writing

Objectives: This course proposes to enable the students to fully grasp the development of Urdu Nazm in the 20th century. An effort shall be made to make the students fully conversant with the characteristics of the Nazm of the period concerned so as to enable them to appreciate the Genre in accordance with the requirements of the course. The course proposes to provide brief knowledge about the origin and development of Urdu language and its importance in J&K. The course also intends to prepare the students for writing on a given General/Literary topic and to have the knowledge of Urdu classical Genres not covered in the courses of study in any class.

B.A. Semester- III General Urdu UR-301 (MIL- Core Course)
Title: Qasida, Marsiya and Drama

Objectives: The purpose of this course is to make the students fully conversant with the respective genre of Urdu literature i.e. Qasida, Marsiya and Drama. An effort shall be made to enable the students to fully appreciate the prescribed Course and to understand the importance of these genres in the annals of Urdu literature.

B.A. Semester- IV General Urdu UR-401 (MIL- Core Course)
Title: Masnavi and Inshaiya

Objectives: The Course proposes to provide comprehensive knowledge of beginning and development of Masnavi and Inshaiya in Urdu Language. An effort shall be made to enable the students to read the Masnavis prescribed so that they are in a position to appreciate both the Genres fully.

B.A. Semester- V General Urdu UR-501 (MIL- Core Course)
Title: Ghazal, Nazm and Novel

Objectives: The course intends to provide knowledge of Medieval Ghazals, pre-independence Nazm and Urdu Novel. The course also intends to make the students conversant with the development of the Ghazal of this period, contribution of Iqbal's poetry(Nazm) towards patriotism and the emergence of Novel in Urdu.

B.A. Semester- VI General Urdu UR-601 (MIL- Core Course)
Title: Literature and Criticism

Objectives: This course proposes to provide knowledge of literary criticism and history of Urdu literature to the students. In order to achieve the end of an effort shall be made to inculcate in them the critical ability so as to enable them to enrich their literary taste.

B.A. Semester- I Communication Urdu UURTS-101 (AECC)
Title: Ghazal, Nazm and Afsana

Objectives: To enable the students to know and understand the origin, development and importance of Urdu Language and Literature.

B.A. Semester- II Communication Urdu UURTS-201 (AECC)
Title: A brief study of Urdu Language, Prose and Poetry

Objectives: To enable the students to know and understand the origin, development and importance of Urdu Language and Literature.

B.A. Semester- III Skill Urdu UURTS-311 (SEC)
Title: Translation and Language Skills

Objectives: To enable the students to understand the various techniques and language skills.

B.A. Semester- IV Skill Urdu UURTS-411 (SEC)
Title: Language Skills

Objectives: To enable the students to understand the language skills and impart them lessons of creative writing skills.

B.A. Semester- V Skill Urdu UURTS-511 (SEC)
Title: Journalism

Objectives: To aware the students about the fields of journalism and make them conversant about the techniques/language skills in it, so that they can choose it as their career.

B.A. Semester- VI Skill Urdu UURTS-611 (SEC)
Title: Creative Writing and Rhetoric

Objectives: To aware the students about the skills of writing prose and poetry and enable them for creative writing.

Learning Outcomes of the curriculum of Urdu courses taught for the academic year 2018-19

B.A. Semester- I General Urdu UURTC-101 (MIL- Core Course)
Title: Urdu Ghazal and Afsana

Objectives: The purpose of this course is to make the students fully conversant/accustomed with Urdu Poetry, Prose and life and works of authors/poets and enable them to appreciate it adequately. This will also adjudge the ability of candidate in a precise manner.

B.A. Semester- II General Urdu UURTC -201 (MIL- Core Course)
Title: Nazm, Urdu Language and Essay Writing

Objectives: This course proposes to enable the students to fully grasp the development of Urdu Nazm in the 20th century. An effort shall be made to make the students fully conversant with the characteristics of the Nazm of the period concerned so as to enable them to appreciate the Genre in accordance with the requirements of the course. The course proposes to provide brief knowledge about the origin and development of Urdu language and its importance in J&K. The course also intends to prepare the students for writing on a given General/Literary topic and to have the knowledge of Urdu classical Genres not covered in the courses of study in any class.

B.A. Semester- III General Urdu UURTC -301 (MIL- Core Course)
Title: Qasida, Marsiya and Drama

Objectives: The purpose of this course is to make the students fully conversant with the respective genre of Urdu literature i.e. Qasida, Marsiya and Drama. An effort shall be made to enable the students to fully appreciate the prescribed Course and to understand the importance of these genres in the annals of Urdu literature.

B.A. Semester- IV General Urdu UURTC -401 (MIL- Core Course)
Title: Masnavi and Inshaiya

Objectives: The Course proposes to provide comprehensive knowledge of beginning and development of Masnavi and Inshaiya in Urdu Language. An effort shall be made to enable the students to read the Masnavis prescribed so that they are in a position to appreciate both the Genres fully.

B.A. Semester- V DSE UURTDSE-501
Title: Ghazal, Nazm and Novel

Objectives: The course intends to provide knowledge of Medieval Ghazals, pre-independence Nazm and Urdu Novel. The course also intends to make the students conversant with the development of the Ghazal of this period, contribution of Iqbal's poetry(Nazm) towards patriotism and the emergence of Novel in Urdu.

B.A. Semester- V DSE UURTDSE-502
Title: Ghazal and Nazm

Objectives: To enable and motivate the students to read and write poetry. To make the students familiar about Urdu Ghazal and Nazm. To make the students familiar about Mir Taqi Mir, Mirza Ghalib and Allama Iqbal.

B.A. Semester- VI DSE UURTDSE-601
Title: Literature and Criticism

Objectives: This course proposes to provide knowledge of literary criticism and history of Urdu literature to the students. In order to achieve the end of an effort shall be made to inculcate in them the critical ability so as to enable them to enrich their literary taste.

B.A. Semester- VI DSE UURTDSE-602
Title: Urdu Prose

Objectives: To make the students familiar about the beginning of Urdu prose. To make the students familiar about the Urdu prose writers and their literature especially Mir Aman Dehalvi and Mohd Hussain Azad.

B.A. Semester- I Communication Urdu UURTS-101 (AECC)
Title: Ghazal, Nazm and Afsana

Objectives: To enable the students to know and understand the origin, development and importance of Urdu Language and Literature.

B.A. Semester- II Communication Urdu UURTS-201 (AECC)
Title: A brief study of Urdu Language, Prose and Poetry

Objectives: To enable the students to know and understand the origin, development and importance of Urdu Language and Literature.

B.A. Semester- III Skill Urdu UURTS-311 (SEC)
Title: Translation and Language Skills

Objectives: To enable the students to understand the various techniques and language skills.

B.A. Semester- IV Skill Urdu UURTS-411 (SEC)
Title: Language Skills

Objectives: To enable the students to understand the language skills and impart them lessons of creative writing skills.

B.A. Semester- V Skill Urdu UURTS-511 (SEC)
Title: Journalism

Objectives: To aware the students about the fields of journalism and make them conversant about the techniques/language skills in it, so that they can choose it as their career.

B.A. Semester- VI Skill Urdu UURTS-611 (SEC)
Title: Creative Writing and Rhetoric

Objectives: To aware the students about the skills of writing prose and poetry and enable them for creative writing.

B.A. Semester- V Generic Urdu UURTGE-501 (GE)
Title: Learning and Reading of Urdu Language

Objectives: To provide basic knowledge of reading and writing of Urdu Language and grammar.

B.A. Semester- VI Generic Urdu UURTGE-601 (GE)
Title: Grammar, Prose and Poetry

Objectives: To provide basic knowledge of Urdu Grammar. To develop the quality of creative writing. To know about the contribution of Fort William college in the development of Urdu. To make the students familiar about Urdu literature in J&K.

SOCIOLOGY

1. B.A. Ist Semester

Course No: USOTC201

Title: Introduction to Sociology

Course Learning Outcomes:

- The students will be able to understand the fundamental and basic concepts of the Sociology.
- The students will learn to apply the sociological perspectives in understanding how society shapes our individual lives.
- The course will provide a foundation for the other more detailed and specialised courses in Sociology.

2. B.A. 2nd Semester

Course No: USOTC201

Title: Society in India

Course Learning Outcomes:

- The most important learning outcome will be that every student of sociology will become well versed with the basic components and features of Indian society.
- This course will develop understanding of the students regarding the features of rural society and some important programs for their development.
- The students will build an understanding about urban society and problems associated with rapid urbanization.

3. B.A. 3rd Semester

Course No: USOTC-301

Title: Foundations of Sociological Thought

Course Learning Outcomes:

- The most important learning outcome is that students will be able to understand the history of sociological theories.
- The students will be able to understand the contributions of pioneers of Sociology.

4. B.A. 3rd Semester (Skill Enhancement Course-1)

Course No: USOTS-301

Title: Gender Sensitisation

Course Learning Outcomes:

- The most important learning outcome is that students will be able to understand the sensitive needs of a particular gender.
- The course will generate the awareness in regard to equality.
- To provide an integrated and interdisciplinary approach to understand the social and cultural constructions of gender that shapes the experiences of women and men in society.

5. B.A. 4th Semester

Course No: USOTC-401

Title: Indian Society-Issues and Problems

Course Learning Outcomes:

- The most important learning outcome is that students will be able to understand the distinctive features of the Indian society.
- The students will be able to understand the issues and the social problems of Indian society.

6. B.A. 4th Semester (Skill Enhancement Course-2)

Course No: USOTS-401

Title: Quantitative Research Methods

Course Learning Outcomes:

- The most important learning outcome is that students will be able to understand the research methods and techniques.

- Students should be familiar with ethical issues in educational research.

7. B.A. 5th Semester (Discipline Specific Elective-2)

Course No: USODSE-502

Title: Marriage, Family and Kinship

Course Learning Outcomes:

- The most important learning outcome is that students will be able to identify the diverse cultural meaning and structure of kinship relations and organizations.
- To better understand one's own culture and society as well as other cultural practices in the world.

8. B.A. 5th Semester (Skill Enhancement Course-3)

Course No: USOTS-501

Title: Environment and Society

Course Learning Outcomes:

- This course enables the students to understand the transnational character of environmental problems and ways of addressing those including interactions across local to global scales.

9. B.A. 5th Semester (Generic Elective Course-1)

Course No: USOGE-501

Title: Understanding Sociological Concepts

Course Learning Outcomes:

- This course will build an understanding of students regarding the relationship of individual and society.
- This course will made students well versed with the processes of social change and social mobility.

10. B.A. 6th Semester (Discipline Specific Elective-4)

Course No: USODSE-602

Title: Religion and Society

Course Learning Outcomes:

- Students articulate the roles of religiosity in a secular democratic society and cultivate characteristics of engaged citizenship.

11. B.A. 6th Semester (Skill Enhancement Course-4)

Course No: USOTS-601

Title: Social Change and Development

Course Learning Outcomes:

- This course enables the students to understand the process of social change and development in society.
- Understand meaning and significance of social transformation.

12. B.A. 5th Semester (Generic Elective Course-2)

Course No: USOGE-601

Title: Indian Society

Course Learning Outcomes:

- The students will build an understanding about urban society and problems associated with rapid urbanization.
- The students will be able to understand the features and distribution of tribals in India and policy matters as far as their problems are concerned.
- Sociology as a science aiming at scientific study of society shall develop a rational scientific temper among students to look and understand the various components of basic institutions of Indian society.

SUBJECT: EDUCATION

Course Objectives

B.A. Semester 1

Course Name: Education and Society

Course No. UEDTC-101

The objective of the course is to enable the students to understand the basic concepts of society, Indian Society, Identify the problems of Indian Society and national Integration.

B.A. Semester 2

Course Name: Educational Psychology and Statistics

Course No. UEDTC-201

The objective of the course is to enable the students to understand about psychology, educational psychology, theories of learning, intelligence and statistics in educational situation.

B.A. semester 3

Course Name: Education in Modern India

Course No. UEDTC-301

Students shall be given the basic information of the course that includes stages as well as issues related to Indian Education. Empirical knowledge should be imparted to students in the context of environmental education and educational technology and also the issues arising from these. Students should be taught by providing proper information related to concept of teacher education along with the need for evaluation and assessment.

B.A. semester 4

Course Name: Psychological Foundations of Education

Course No. UEDTC-401

To enable the students to understand the concept of educational psychology by demonstrating them different methods of studying human behaviour, types of special children and also educational provisions for these children as well enlighten them on various types of personality and its assessment, also to identify and calculate various measures of variability.

B.A. semester 3

Course Name: Guidance and Counselling

Course No: UEDTC-301 (Skill Course)

To acquaint the students with the knowledge of guidance and counselling in the field of education with respect to needs, concept, types, principles and also fundamental counselling skills.

B.A. Semester 4

Course Name: Statistics in Education

Course No: UEDTS-401(Skill enhancement courses)

After studying statistics students will be able to understand importance of statistics, identify and calculate various measures of variability and also interpret frequency distribution and measure of central tendency as well understand the knowledge about different data gathering tools.

B.A. Semester 5

Course Name: Development of Educational System in India

Course No: UEDTDSE-501 (DSE)

To acquaint the students to gain knowledge about the development of Educational System in India from Vedic period to RTE 2009. It also includes Education system in pre and post independence era.

B.A. Semester 6

Course Name: Educational Thinkers

Course Code: UEDTDSE-601

To enable the students to have knowledge regarding Indian and Western Educational Thinkers. How these philosophers have given their views on Concept of Education, Curriculum, Aims, Discipline, Methods and Role of teachers.

B.A. Semester 5

Course Name: Pedagogy of Teaching Learning

Course No: UEDTS-501

The objective of the course is to enable the students to understand the concept of teaching learning, make them aware about the various principles and maxims of teaching, get acquainted with the various methods and devices used in the process of teaching learning and impart functional knowledge about the various ICTs tools that are now a days indispensible to teaching-learning process.

B.A semester 6

Course Name: Special Education

Course No: UEDTS-601

The objective of the course is to enable the students to understand the meaning of Special children and Special education, help them gain awareness about the need of Special Education, get knowledge of the types of Special children and the various educational provisions for the children with special abilities.

B.A. Semester 5

Course Name: Foundation of Education

Course No. UEDTGE-501

Students will be given the basic information of the course that includes education in context of sociology and psychology and they will be able to acquire and analyse the

knowledge of core sociological and psychological concepts in the field of Education. Moreover, it will also enable them to demonstrate, how to use sociological and psychological theory to conceptualize a sociological and psychological problem in the educational field.

B.A. Semester 6 (CBCS)

Course Name: Educational Evaluation and Statistics in Education

Course No: UEDTGE-601

Students will be given the basic information of the course that includes measurement and evaluation, statistics and data will also be introduced to Measures of Central Tendency and Correlation (Product Moment method and Rank Difference Method). By acquisition of the statistical knowledge, they will be able to evaluate and apply appropriate statistical techniques in the related area of teaching-learning.

SUBJECT: POLITICAL SCIENCE

Course Objectives

B.A. Semester 1

Course Name: An Introduction to Political Theory

Course No. UPSTC-101

This course aims to familiarize students with the basic normative concepts of political theory. Each concept is related to a crucial political issue that requires analysis with the aid of our conceptual understanding. This includes important debates and key concepts like Rights, Justice, Liberty, and Equality which are building blocks of political analysis. These debates prompt us to consider that there is no settled way of understanding concepts and in the light of new insights and challenges, besides newer ways of perceiving and interpreting the world around us, we inaugurate new modes of political debates. The student will be able to discern the conceptual debates which underlie political phenomena.

B.A. Semester 2

Course Name: Indian Government and Politics

Course No. UPSTC-201

Indian polity describes the study of administrative system of Indian State. This includes constitutional framework, central government, system of government, state government, constitutional and non-constitutional bodies and working of the constitution. The Constitution of a country sets out the fundamental canons of governance to be followed in that country and also delineates the division of power, privileges and responsibilities between different organs of government. The course strives for a holistic comprehension of Indian Government and Politics.

B.A. Semester 3

Course Name: Comparative Government and Politics

Course No. UPSTC-301

Comparative Government and Politics is the youngest discipline among the family of social sciences. As an academic discipline, it came into existence in the post Second –World War period. The comparative study of administrative system has grown up with the comparative study of cross-cultural and cross-national settings. This course presents a

comparative outlook of performance of government, concepts of comparative politics, theories of democracy and representation.

B.A. Semester 4

Course Name: International Politics

Course No. UPSTC-401

This course introduces students to some of the most important theoretical approaches for studying international relations. It provides a fairly comprehensive overview of the major political developments and events starting from the twentieth century. Students are expected to learn about the keystones in world history and equip them with the tools to understand and analyze the same different perspectives, key concepts of national power, national interest and various instruments for the promotion of national interest.

B.A. Semester 5

Course Name: Western Political Thought

Course No. UPSTDSE-501

The course aims at introducing students to the major themes of western political thought. This will be done by undertaking an in-depth study of the key thinkers of the tradition. The basic focus of this study is on individual thinkers whose ideas are however framed by specific terms. The course as a whole is meant to provide sense of the broad streams of western political thought while encouraging a specific knowledge of individual thinkers and text. In this course, thinkers like Plato, Machiavelli, Aristotle, Mill and Marx – in the history of ideas and aim to evaluate their philosophy with reference to the context in which these grew. The interpretation of these thinkers will involve striking a balance between the text and the context and relate to the core ideas of each.

B.A. Semester 6

Course Name: Politics of Jammu and Kashmir

Course No. UPSTDSE-601

This course provides a comprehensive introduction of the historical and constitutional background of Jammu and Kashmir. The student should familiarize with the state politics in India. To give them a brief overview of the constitutional structures. To highlight the government structure, political processes and should focused on contemporary problems, issues and debates in how these should be addressed.

Learning outcome of B.Sc programme curriculum in Physics

The objective of framing this course is to bridge the gap between the plus two and post graduate levels of Physics by providing a more complete and logical framework in almost all fields of Physics.

The purpose of teaching this syllabus is to empower the students to acquire engineering skills and practical knowledge which will be of great help to students in their day today life. Since electricity and electrodynamics play a key role in the development of modern technological world.

This course will provide a theoretical basis for performing experiments in related areas and cater the basic requirements for their higher studies. The main objective of this course is to provide students with mathematical skills which will be of great help to them in solving various problems in respective fields of Physics.

Goal of framing the syllabus is to make students aware of the physical world and understanding connectivity of Physics with other disciplines and to develop experimental, computational and mathematical skills of students. Our aim is to provide an intellectually stimulating environment to develop skills and enhance the capabilities of the students to the best of their potential.

By the end of B.Sc. programme, the students would be expected to achieve a common level in basic mechanics, electricity, magnetism and a secure foundation in vector algebra along with various related Theorems. Students are also expected to become proficient in Thermodynamics, Basics Electronics, Mathematical Physics and Statistical physics with related laws.

Moreover, Students are also supposed to acquire great deal of knowledge about Waves and Quantum Optics with related laws and Practicals. In the final year of their course students are expected to acquire profound knowledge about Quantum Mechanics, Atomic and Nuclear Physics along with Electronics and Solid State Physics.

Students will be able to read, understand and interpret physical information – verbal, mathematical and graphical. They must have developed their experimental and data analysis skills through experiments at Laboratories. They will be able to perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties. They would be in a position to use information communication technology to gather knowledge at will.

SUBJECT: MATHEMATICS

B.Sc. Semester-I

Core Course-UMATC-101: Differential Calculus

Objective: The student should have a good mathematical background and have knowledge of topics like limits, differentiation and integration. This course will help the student to strengthen his mathematical concepts.

Learning Outcomes: -This course will enable the students to:

1. Calculate the limit and examine the continuity and understand the geometrical interpretation of differentiability.
2. Use critical points and signs of first and second derivatives to sketch graphs of functions.
3. Use the first derivative to find intervals where a function is increasing or decreasing.
4. Use the second derivative to determine concavity and find inflection points.
5. Apply the first and second derivative tests to classify critical points and use them to locate maxima and minima.
6. Sketch curves in Cartesian and polar coordinate systems. Polar coordinates are used often in navigation as the destination or direction of travel can be given as an angle and distance from the object being considered.
7. Use Differential Calculus to solve optimization problems appearing in social sciences, physical sciences, life sciences and a host of other disciplines.
8. Understand the consequences of various Rolle's theorem ,Mean value theorem, Taylor's theorem for differentiable functions.
9. Be able to understand ideas partial derivative of second and higher orders.

B.Sc. Semester-II

Core Course UMATC -201: Differential Equations

Objective: This course is of Differential equation. Student should have prerequisite knowledge of differential equations especially variable separable method, homogenous and linear differential equations.

Course Learning Outcomes:- This course will enable the students to:

1. Explain the meaning and concept of differential equation with respect to their order, degree and linearity.
2. Solves first-order ordinary differential equations.
3. Solves exact differential equations.
4. Converts separable and homogenous equations to exact differential equations by integrating factors.
5. Solves Bernoulli differential equations.
6. Find solution of higher-order linear differential equations.
7. Solves the homogeneous linear differential equations with constant coefficients.
8. Applies the method of undetermined coefficients to solve the non-homogeneous linear differential equations with constant coefficients.
9. Uses the method "variations of parameters" to find to solution of higher-order linear differential equations with variable coefficients.
10. Solves the Cauchy-Euler equations.

B.Sc. Semester-III

Core Course UMATC-301: Real Analysis

Objective: This course pertains to real analysis with emphasis on the sequence and series of real numbers. The student should have knowledge of real numbers and its properties, set theory, functions, etc.

Course Learning Outcomes:- This course will enable the students to:

1. Understand many properties of the real line $\mathbb{R}$ and learn to define sequence in terms of functions from $\mathbb{R}$ to a subset of $\mathbb{R}$.
2. Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.
3. Apply various tests as the ratio, root, alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.
4. Relate concepts of uniform continuity, differentiation, integration and uniform convergence.

B.Sc. Semester-III

Skill Enhancement Course UMATS-301: Logics, Sets And Relations

Objective: This course is of logic and sets. It will make them learn about propositions that are a type of statements and operations applied on them. This has a great application in circuit formations.

Course Learning Outcomes:- This course will enable the students to:

1. Apply the logic theory to practical situations for drawing conclusions
2. Analyze statements using truth tables.
3. Write and interpret mathematical notation and mathematical definitions.
4. Construct and restate various theorems using logical arguments.
5. Apply the logical structure of proofs and work symbolically with connectives and quantifiers to produce logically valid, correct and clear arguments.
6. Understand the basic theory of sets, perform set operations on finite and infinite collections of sets and be familiar with properties of set operations.
7. Explain the fundamental ideas of sets and functions.
8. Establish the relationship between various variables existing in a system.
9. Determine equivalence relations on sets and corresponding equivalence classes.

B.Sc. Semester-IV

Core Course UMATC-401: Abstract Algebra

Objective: This course will enhance the knowledge of students with new concepts in algebra, which they have not read before. The students should have a background of sets and logic to grasp the content of this course.

Course Learning Outcomes:-This course will enable the students to:

1. Understand the basic concepts of group actions and their applications.
2. Learn about the fundamental concepts of groups, subgroups, normal subgroups, isomorphism theorems, cyclic and permutation groups.

3. Know the fundamental concepts in ring theory such as the concepts of ideals, quotient rings, integral domains, and fields.

B.Sc. Semester-IV

Skill Enhancement Course UMATS -401: Vector Calculus

Objectives:- The concepts of this paper have wide application in physics and requires a knowledge **of limits, differentiation, integration, vectors and their operations**

Course Learning Outcomes:- This course will enable the students to:

1. Acquire the basic knowledge of vector differentiation and vector integration.
2. Determine and apply, the important quantities associated with scalar fields, such as partial derivatives of all orders, the gradient vector and directional derivative.
3. Determine and apply, the important quantities associated with vector fields such as the divergence, curl, and gradient.
4. Calculate line integrals along piecewise smooth paths.

B.Sc. Semester-V

Discipline Specific Elective Course UMATDSE-501: Linear Algebra

Objective:- It is an advanced study of algebra with details of spaces like vector spaces, their basis and linear transformations.

Course Learning Outcomes:- This course will enable the students to:

1. Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix, using rank.
2. Find eigen values and corresponding eigen vectors for a square matrix.
3. Understand the concept of real vector spaces, subspaces, basis, dimension and their properties.
4. Solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion.
5. Demonstrate understanding of linear independence, span, and basis.

6. Apply principles of matrix algebra to linear transformations.

B.Sc. Semester-V

Discipline Specific Elective Course UMATDSE-502: Matrices

Objective: This course titled as Matrices and deals in matrices of higher spaces as R^2, R^3 . It also specifies how spaces are transformed in other spaces.

Course Learning Outcomes:- This course will enable the students to:

1. Understand the concept of vector spaces, subspaces of R^3, basis, dimension and their properties.
2. Acquire the basic knowledge of translation, dilation, rotation, reflection of point, line and plane.
3. Apply matrix algebra, the matrix transpose, and the zero and identity matrices, to solve and analyze matrix equations.
4. Apply the formal definition of an inverse, and its algebraic properties, to solve and analyze linear systems.
5. Find eigen values and corresponding eigen vectors for a square matrix.
6. Apply the Rank, Basis, and Matrix Invertibility theorems to describe matrices and subspaces.
7. Apply Cayley-Hamilton theorem to compute inverse of matrices.

B.Sc. Semester-V

Skill Enhancement Course UMATS-501: Probability and Statistics

Objective: In this paper, the students will know about different type of probability distributions and mean, mode, variance and moment generating functions of random variables in these distributions. The students should have studied the basic course of probability.

Course Learning Outcomes:- This course will enable the students to:

1. Understand the basic concepts of probability.

2. Appreciate the importance of probability distribution of random variables and to know the notion of central tendency.
3. Understand central limit theorem which shows that the empirical frequencies of so many natural populations exhibit Binomial, Normal and Poisson distribution.

B.Sc. Semester-V

Generic Elective Course UMATGE -501: Numerical Ability –I

Objective: The concept of this paper is wildly applicable in competitive exams.

Course Learning Outcomes:- This course will enable the students to:

1. Obtain numerical solutions of algebraic and transcendental equations.
2. Find numerical solutions of system of linear equations and check the accuracy of the solutions.
3. Analyse data, construct hypothesis, solve problems reflecting on their work.
4. Understand the basic concepts of quantitative ability, logical reasoning skill.
5. Use mathematical ideas to solve real-world problems and be able to communicate mathematical ideas with others.
6. Apply short-cut methods for solving elementary problems in areas such as number system, HCF, LCM, algebra of linear equations, ratios and proportion, time and distance, trigonometry.

B.Sc. Semester-VI

Discipline Specific Elective Course UMATDSE-601: Numerical Methods

Objective: This course of Numerical Methods gives the knowledge in Statistics and numerical analysis that has a great application in present era.

Course Learning Outcomes:- This course will enable the students to:

1. Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions to otherwise intractable mathematical problems.
2. Apply numerical methods to obtain approximate solutions to mathematical problems.

3. Derive numerical methods for various mathematical operations and tasks such as finite differences and operators, interpolation, differentiation, integration, and the solution of differential equations and check the accuracy of the solutions.
4. Analyse and evaluate the accuracy of common numerical methods.
5. Obtain numerical solutions of algebraic and transcendental equations.
6. Analyse data, construct hypothesis, solve problems reflecting on their work.
7. Understand the basic concepts of quantitative ability, logical reasoning skill.

B.Sc. Semester-VI

Discipline Specific Elective Course:-UMATDSE-602: Complex Analysis

Objective: Here we deal with different functions particularly the complex functions and their properties. The students should have background of real analysis and complex numbers.

Course Learning Outcomes:- This course will enable the students to:

1. Understand the algebra of complex numbers.
2. Understand the significance of differentiability and analytic Course Learning Outcomes:- This course will enable the students to:
3. Applicability of complex functions Cauchy- Riemann equations
4. Understand Complex integration, the Cauchy -Goursat theorem and Cauchy integral formula.
5. Apply Liouville's theorem in fundamental theorem of algebra.
6. Learn Taylor and Laurent series expansions of analytic functions, classify the nature of singularity, poles and residues and application of Cauchy Residue theorem.

B.Sc. **Semester-VI**

Skill Enhancement Course – UMATS-601: Analytical Geometry

Objective: This paper is a study of two and three-dimensional figures and how to trace them. It requires a pre knowledge of basic geometry.

Course Learning Outcomes:- This course will enable the students to:

1. Understand how to analyze and synthesize given data to solve problems in geometry.

2. Understand the basic ideas of circle, parabola, ellipse and hyperbola.

B.Sc. Semester-VI

Generic Elective Course -601: Numerical Ability

Objective: The concept of this paper is wildly applicable in competitive exams.

Course Learning Outcomes:- This course will enable the students to:

1. Learn about various interpolating and extrapolating methods.
2. Apply various numerical methods in real life problems.
3. Analyse data, construct hypothesis, solve problems reflecting on their work.
4. Develop and maintain problem-solving skills.
5. Use mathematical ideas to solve real-world problems.
6. Solve elementary problems in areas such as mensuration, commercial mathematic, geometry, probability and statistics.

PHILOSOPHY

The BA (Programme) in Philosophy starts with an introduction to the major branches of philosophy - metaphysics, epistemology and ethics and introduces the major issues dealt with in these branches. As the Programme progresses, the student is engaged with the more specific content. Thus the Programme offers various core papers covering diverse philosophical themes like Socio-Political Philosophy, Ethics, Western Philosophy, Indian Philosophy and Contemporary Philosophy. In addition, the BA Programme offers skill courses like Logic and Yoga so as to make the student understand and develop her mind and body to full potential for a harmonious development of her being. Further, the BA Programme also offers Generic Electives to students from non philosophy background so as to make them inculcate a philosophical bent of mind which is going to help them in whatever academic field they have chosen to study. All in all, the BA Programme in Philosophy offers a systematic and robust engagement with one of the most ancient of human sciences and makes the student awaken to the enormous benefits – both academic as well as non academic- of studying philosophy

The extent of Philosophy, aptly called the mother of all sciences, is as wide the domain of human knowledge itself. One of the most ancient of all the discourses, almost every independent discipline of the modern age was at one point of time subsumed under the realm of philosophy. Thus the seeds of most natural sciences (e.g. Physics, Chemistry or Zoology) as well as social sciences (e.g. Political Science, Sociology, Economics or Psychology) were sown, implicitly or explicitly, by one or the other philosophers in the fertile ground of philosophy. Although the modern trend of 'specialization' ensured that many such disciplines branched out of their 'parent' discipline, any serious and research level study of these or other disciplines is incomplete without a training in Philosophy. This is because the foundational aim of philosophy - *to ever increase the bounds of human knowledge and well being by rigorous use of thought in a systematic and logical way* - is shared by almost all disciplines of knowledge. The B.A. Programme in philosophy is designed to inculcate in the student all the essential qualities of a sound philosophical mind - critical thinking, threadbare analysis of problems, opening up of mental horizons and bringing to question each and every belief system that we take for granted in our unreflective common sense attitude towards the world. To inculcate all these qualities, the B.A. Programme in Philosophy offers courses as diverse as Western Philosophy, Indian Philosophy, Social and Political Philosophy, Logic and Ethics. Though many of the issues which the student encounters in a course of philosophy are raised in other disciplines also (Sociology or Political Science, for example), it is the approach and methodology of the discipline of philosophy which gives altogether different perspective of approaching the same content material. In addition, there are certain contents which are in a way explicit to the domain of philosophy (Metaphysics or Epistemology, for example). All these contents combined together under the umbrella of LOCF makes the B.A. Programme in

philosophy a robust, thought provoking and life changing endeavor for any student who seriously pursues the Programme.

Programme Learning Outcomes in B A (Programme) Philosophy

The following are the learning outcomes for B.A.(Programme) in Philosophy:

- Understanding of various philosophical theories and having a critical opinion on these theories.
- Understanding the points of convergence and divergence among various philosophers.
- Understanding the enormous extent to which the present world has been shaped by the thoughts of great philosophers since antiquity.
- Inculcation of various philosophical skills like critical thinking, analytical ability and ability to synthesize information.
- Building up of fresh perspectives on various domains of existence- individual, social, political, religious and the like.
- Using the knowledge and skills acquired through BA Programme in Philosophy to come up with novel solutions to real world problems.

SUBJECT: ECONOMICS

Learning outcomes of various courses offered in Economics in B.A programme

Semester I

Discipline Specific Elective- I

Title: Microeconomics

Course No: UECTC 101

Learning outcomes: As a foundation course, this paper intends to explore the students to the basic principles in micro economics .It will expose the students to the behavior of an economic agent, namely a consumer, producer or a factor owner.

Semester II

Discipline Specific Elective- I

Title: Macroeconomics

Course No: UECTC 201

Learning Outcomes: The main learning outcome of this course is to give an overview as to how the economy behaves when the behavior of the various economic agents are aggregated. Macroeconomics has an extensive, substantive as well as methodical content. It deals with the functioning of the economy as a whole, including how the economy's total output of goods and services and employment of resources is determined and what causes these totals to fluctuate. This paper has been designed to make the undergraduate students aware of the basic theoretical framework underlying the field of Macroeconomics.

Semester III

Discipline Specific Elective- I

Title: International Economics

Course No: UECTC 301

Learning Outcomes: This course intends to expose the students about International Economic problems, theories of International trade, Gains from trade, Tariff and Quotas, Balance of Payments and International Institutions.

Semester III

Skill Enhancement Course

Current Economic Issues of India

Course No: UECTSE- 301

Learning Outcomes: This course will enable the student to have an understanding of the various current Indian Economic issues**.**

Semester: IV

Discipline Specific Elective- I

Title: Development Economics

Learning Outcomes: This course will enable the students to know about theories of growth and development, sect oral aspects of development, investment criteria, allocation of resources and interrelations of International aspects of development.

Semester IV

Skill Enhancement Course II:

Data Analysis

Course No: UECTSE-401

Learning Outcomes: This course will introduce the students to various aspects of Data Analysis such as collection and presentation of data, summarization and analysis of data. Students will also be trained to calculate and use few statistical tools.

Semester V

Skill Enhancement Course

Title: Financial Economics

Learning Outcomes: This course introduces students to the economics of finance. It implies supply and demand aspect of the capital. The purpose of the paper is to impart the knowledge and train the learners to the tidbits of the financial aspects of the economy and to keep pace with the changing global financial and Investment scenario.

Semester V

Discipline Specific Elective- I

Title: Money and Banking

Course No: UECTDSE-501

Learning Outcomes: Money and Banking constitute the important components towards understanding of Economics. A clear understanding of the operations of money and banking and their interaction with the rest of the economy is essential to realize how monetary forces operate through a multitude of channels market, non-market institutions and among others, the state. Accordingly, the paper on 'Money and Banking' is an integration of monetary theory, banking institutions and government which combines with Itself a systematic discussion of the theory, institutions and policy with special reference to India.

Semester V

Discipline Specific Elective-II

Title: Indian Economy

Course No: UECTDSE-501

Learning Outcomes: The main learning outcome of this course on Indian Economy is to enable students to have an understanding of the various issues/components of the Indian Economy so that they are able to comprehend and critically appraise current Indian economic problems. For this, it is essential to have a good deal of understanding about the major developments in the Indian economy since independence.

Semester V

Generic Elective Course-I

Title: An Introduction to Indian Economy and J&K Economy

Course No: UECTGE-501

Learning Outcomes : The main learning of this course on Indian Economy is to enable students to have an understanding of the various issues/components of the Indian Economy so that they are able to comprehend and critically appraise current Indian economic problems. For this, it is essential to have a good deal of understanding about the major developments in the Indian economy since independence. Last unit is devoted to Jammu & Kashmir. The contents of the different units have been accordingly devised.

Semester VI

Discipline Specific Elective-I

Title: Economic History of India 1857-1947

Course No: UECTDSE-601

Learning Outcomes: This course analyses key aspects of Indian economic development during the second half of British colonial rule. In doing so, it investigates the place of the Indian economy in the wider colonial context, and the mechanisms that linked economic development in India to the compulsions of colonial rule. This course links directly to the course on India‘s economic development after independence in 1947.

Semester VI

Discipline Specific Elective- II

Title: Public Finance

Course No: UECTDSE-601

Syllabus of Department of Economics for BA Choice Based Credit System (CBCS) Examinations

Learning Outcomes: This course provides an overview of Government into the efficiency and equity aspects of taxation of the centre, states and the local Governments and the issues of fiscal federalism and Decentralization in India. It will provide the students a thorough understanding and knowledge of Government finances with special references to India.

Semester VI

Skill Enhancement Course - I

Title: Flagship Programmes of India

Course No: UECTSE-601

Learning Outcomes: This course will provide the students the basic understandings of the rural development programmes of Government of India for the welfare of the rural people. It will familiarize the students with different rural development schemes implemented in India aiming at raising the income and livelihoods of the rural people.

Semester VI

Generic Elective Course- I

Title: Basic Elements of Economic Theory

Course No: UECTGE-601

Learning Outcomes: This paper has been designed to make the undergraduate students aware of the basic theoretical framework underlying in the field of microeconomics and macro economics. The student is expected to understand the behavior of an economic agent, namely, a consumer, a factor owner and the price fluctuations in a market. On account of the growing influence and involvement of the state in economic fields, macroeconomics has become a major area of economic analysis in terms of theoretical, empirical as well as policy-making issues.

Course Name – Environmental Sciences -I

Course code- UESTS-101

Semester- I

Learning Outcomes

Upon successful completion of this course, the students will be able to:

- **correlate ecological dynamics and regulation of vital processes on earth as biogeochemical cycles**
- **Gain an in-depth knowledge on natural processes that sustain life.**
- **Understand the different types of pollution and effect of pollution on human health and environment.**
- **Understand the different types of natural hazard and mitigation approaches.**
- **Understand the international efforts and Indian constitutional provisions with respect to the environmental protection,**
- **Appreciate ideas of sustainable development**

Course Name – Environmental Sciences -II

Course code- UESTS-201

Semester-II

Learning Outcomes

Upon successful completion of this course, the students will be able to:

- **Systematically understand biodiversity and its vital role in ecosystem function**
- **Appreciate the need of biodiversity conservation**
- **Understand the importance of biodiversity in natural environments**
- **Appreciate attributes of natural resource use and management**
- **Critically examine the gap in the resource availability, use, and conservation**
- **sensitize the community about environmental health issues.**

Course Title-Solid Waste Management

Course Code- UESTS-301

Semester-III

Learning Outcomes

Upon successful completion of this course, the students will be able to:

- **apply the principles of Solid waste management under various contexts.**
- **explain the hierarchical structure in solid waste management and a requirement for an integrated solution.**
- **examine the technical points that are required to set up a solid waste management system.**
- **apply the legal legislation related to solid waste management.**
- **make an economical analysis of the solid waste management system.**
- **set up a municipal solid waste management system.**
- **Apply understanding to generate resources from wastes**
- **plan a recycling program and**
- **design a compost facility.**
- **plan a solid waste management system for decision makers.**

Course Title- Environmental Impact Assessment

Course Name- UESTS-401

Semester-IV

Learning Outcomes

Upon successful completion of this course, the students will be able to:

- **Comprehensively understand of the origin and development of EIA and the developments in India**
- **Predict the kind of changes that might occur with human activities.**
- **Understand process and methods of environmental impact assessment**
- **critique environmental impact statements effectively**
- **apply knowledge to new situations.**

Course Title-Green Technology

Course Code-UESTS-501

Semester-V

Learning Outcomes

Upon successful completion of this course, the students will be able to:

- **Understand the importance of green technology**
- **Enlist different concepts of green technologies in a project.**
- **Understand the principles of Energy efficient technologies**

- **Identify the importance of life cycle assessment of products**
- **Recognize the benefits of green and clean fuels with respect to sustainable development.**

Course Title- Abatement Techniques

Course Code-UESTS-601

Semester-VI

Learning Outcomes

Upon successful completion of this course, the students will have a **broad, integrated understanding the major problems associated with pollution of the atmosphere, water and the land surface.**

Students will be expected to be familiar with and have an understanding of the causes of global warming, ozone depletion, enhanced N and S emissions and Problems of pollution of the food chain by potentially toxic elements and persistent organic pollutions; Students are also expected to be aware of the procedures and prospects for reducing unwanted emissions to the environment and remediation of already polluted systems.

DEPARTMENT OF PSYCHOLOGY

SEMESTER-I

Course Title: Foundation of Psychology
Course Code: UPSYTC101

Course Objectives and Learning Outcomes: After the completion of this course students will be

- ¬ Use scientific reasoning to interpret psychological phenomena.
- ¬ Demonstrate psychology information literacy.
- ¬ Engage in innovative and integrative Learning.
- ¬ Interpret, design, and conduct basic psychological research

Semester-II

Course Title : Introduction to Social Psychology
Course Code: UPSY

Course Objectives: To understand the basics of Social Psychology and to understand the individual in the Social World.

Semester-III

Course Title: Introduction to Human Development
Course Code: UPSY

Course Objectives:

- To understand developmental foundations, issues and crises through different stages of Development.
- To understand the theoretical perspectives of different development stages.

Semester-IV

Course Title: Abnormal Psychology
Course Code: UPSY

Course Objectives: The course is designed to provide knowledge about the nature and course of various abnormal conditions as well as therapeutic interventions.

Semester: V

COURSE TITLE: Measurement and Statistics in Psychology.

COURSE OBJECTIVES: This course is designed to make students familiar with the concepts and methods used in the statistical analysis.

Learning Outcomes

To enable the pupil teachers to:-

- make students conversant with problems of research design, the tools of collecting data and techniques of analysis,
- enable them to interpret educational research and investigation and to examine its scope of application in educational field.
- help them gain understanding of the concepts and methods used in statistical analysis of the test scores.
- make them able to apply the above gained knowledge in tabulating and interpreting tests' scores.
- develop analytic, synthetic, interpretative and critical skills

COURSE TITLE: Social Psychology

COURSE OBJECTIVES: This course aims at enabling students understand the social behavior and the social influences on behavior.

COURSE TITLE: Psychology in Education.

COURSE OBJECTIVE: To understand how the principles of psychology can be applied in the area of education.

COURSE TITLE: Industrial/Organizational Behavior

COURSE OBJECTIVE: To introduce the basic concepts of industrial/organizational psychology and to understand the application of industrial/organizational psychology at the workplace.

COURSE TITLE: Community Psychology (DSE)

Course Objective: To learn the link between individuals and communities and deal with social issues more effectively with people's participation.

COURSE TITLE: Psychology for Living. (Generic)

COURSE OBJECTIVE: To learn the application of psychological principles in everyday living

SEMESTER- VI

Course Title: COUNSELING PSYCHOLOGY

Course Objectives and Learning Outcomes: After the completion of this course students will be able to-

- Understand the concept of counseling
- Understand different approaches of counseling
- Understand about counseling process and its application
- Understand counseling qualities and ethical practices

COURSE TITLE: Managing Human Resource (Skill Enhancement)

COURSE OBJECTIVE: To understand the concepts related to human resource management and learn related techniques.

COURSE TITLE: Health and Well Being

COURSE OBJECTIVE: To develop an understanding of health and how to maintain health and well-being.

COURSE TITLE: Counselling Psychology.

COURSE OBJECTIVE: To develop an understanding of basic concepts, approaches, processes and applications of counseling.

COURSE TITLE: Consumer Psychology. (Generic Elective)

COURSE OBJECTIVE: To develop an understanding of basic concepts, approaches, processes and applications of Consumer Behavior.

SUBJECT: BOTANY

Botany is a broad discipline with numerous subjects involved with the study of Plants and microbes. The learning outcome can be summarized under following points:

B.Sc. Semester 1

1. The students will gain wide knowledge on the diversity, morphology and reproduction of plants and microbes.
2. The students shall get to know about the diversity that exists in plants right from Algae to Fungi to Bryophytes, Pteridophytes. They shall be able to appreciate their habit, habitat morphology anatomy and reproduction in these groups of plants.

B.Sc. Semester 2

1. The students shall get an insight into the origin; evolution of two most advanced groups of plants like Gymnosperms and Angiosperms and shall learn the basis for their separate grouping.
2. The students shall have an understanding of the classification systematics of plants and the semi technical taxonomic descriptions of some common angiosperm families.

B.Sc. Semester 3

1. The students shall understand the anatomy and embryology of Angiosperms in detail in theory and in Practicals with hands on training in section cutting and shall learn to observe the microscopic structural details of the cells ,tissues and organs and shall be able to relate these to the functions being performed.
2. The students shall also get an insight into the field of Ecology and the relationship between biotic and abiotic components of the environment that will sensitize the young minds to appreciate the concept of ecological balance and sustainable development.

B.Sc. Semester 4

1. The students shall learn the physiology and metabolism of plants through theoretical and practical demonstrations and shall get to know about the underlying principles that are responsible for various physiological functions of plants such as water and mineral uptake, transpiration, cell permeability respiration, photosynthesis, nitrogen and fat metabolism, growth regulation etc.

B.Sc. Semester 5

1. The study of Genetics and Cell biology will create understanding of the structure and functions of the cell and its organelles which will form a basis for higher studies in these and other related modern fields of studies.

B.Sc. Semester 6

1. The study of economic importance of different plants groups will help students to understand the dependence of man on plants right from food to shelter to medicines.
2. The students shall learn and understand the basic techniques of plant tissue culture and biotechnology
3. The use of microbes and plants in the field of Biotechnology will create an understanding of the modern fields of research in Botany and help them to understand the role and importance of research in Botany for the welfare of mankind

Govt. College for Women Parade Ground Jammu

An Autonomous College

NAAC Accredited "A" Grade

Learning Outcome-Based Curriculum Framework (LOCF) Syllabus for the Examination to be held in 17-18 and 18-19 UNDER CHOICE BASED CREDIT SYSTEM

Semester-1st: Animal DiversityUZOTC-101 (17-18).

Course Learning Outcome: Upon completion of the course, students will be able to:

- Distinguish between major phyla of animals through a demonstrated understanding of their taxonomic classification and diversity.
- Describe the distinguishing characteristics of all major phyla.
- Understand the fundamental differences among animal body plans and relate them to function, taxonomic classification, and evolutionary relationships among phyla.
- Illustrate lifecycles, structure, function and reasons for importance of few representative organisms from different groups of animals.
- Identify anatomical structures from prepared tissues.
- Observe living animals in the environment and relate observations to theory from the course.
- Recognize major animal phyla and animals on the basis of their external characteristics.

UG Semester-1st: Animal Diversity UZOTC-101 (18-19).

Course Learning Outcome: Upon completion of the course, students will be able to:

- Distinguish between major phyla of animals through a demonstrated understanding of their taxonomic classification and diversity.
- Describe the distinguishing characteristics of all major phyla.
- Understand the fundamental differences among animal body plans and relate them to function, taxonomic classification, and evolutionary relationships among phyla.
- Illustrate lifecycles, structure, function and reasons for importance of few representative organisms from different groups of animals.
- Identify anatomical structures from prepared tissues.
- Observe living animals in the environment and relate observations to theory from the course.
- Recognize major animal phyla and animals on the basis of their external characteristics.

UG Semester-2nd: Comparative anatomy and Developmental Biology of VertebratesUZOTC-201(17-18)

Course Learning Outcome: Upon completion of the course, students should be able to:

- Explain comparative account of the different vertebrate systems

- Understand the pattern of vertebrate evolution, organisation and functions of various systems.
- Learn the comparative account of integument, skeletal components, their functions and modifications in different vertebrates.
- Understand the evolution of heart, modification in aortic arches, structure of respiratory organs used in aquatic, terrestrial and aerial vertebrates; and digestive system and its anatomical specializations with respect to different diets and feeding habits.
- Learn the evolution of brain, sense organs and excretory organs to a complex, highly evolved form in mammals.
- Learn to analyze and critically evaluate the structure and functions of vertebrate systems, which helps them to discern the developmental, functional and evolutionary history of vertebrate species.
- Understand the importance of comparative vertebrate anatomy to discriminate human biology.

UG Semester-2nd: Comparative anatomy and Developmental Biology of Vertebrates UZOTC-201(18-19)

Course Learning Outcome: Upon completion of the course, students should be able to:

- Explain comparative account of the different vertebrate systems
- Understand the pattern of vertebrate evolution, organisation and functions of various systems.
- Learn the comparative account of integument, skeletal components, their functions and modifications in different vertebrates.
- Understand the evolution of heart, modification in aortic arches, structure of respiratory organs used in aquatic, terrestrial and aerial vertebrates; and digestive system and its anatomical specializations with respect to different diets and feeding habits.
- Learn the evolution of brain, sense organs and excretory organs to a complex, highly evolved form in mammals.
- Learn to analyze and critically evaluate the structure and functions of vertebrate systems, which helps them to discern the developmental, functional and evolutionary history of vertebrate species.
- Understand the importance of comparative vertebrate anatomy to discriminate human biology.

B.Sc Semester-3rd: Physiology and Biochemistry UZOTC-301 (17-18).

Course Learning Outcome: The Paper deals with the concepts of Physiology and Biochemistry

- The paper acquaints the learners with the mechanisms of functioning of the various essential life processes in animals especially mammals.
- The paper also deals with the essential metabolic processes, their mechanisms and metabolic pathways.

- The paper also elaborates upon the structure and functioning of various organ systems in animals especially mammals.
- The paper also acquaints the students with concepts of reproductive processes and endocrine functioning in animals especially mammals.

B.Sc Semester-3rd: Physiology and Biochemistry UZOTC-301 (18-19).

Course Learning Outcome: The Paper deals with the concepts of Physiology and Biochemistry

- The paper acquaints the learners with the mechanisms of functioning of the various essential life processes in animals especially mammals.
- The paper also deals with the essential metabolic processes, their mechanisms and metabolic pathways.
- The paper also elaborates upon the structure and functioning of various organ systems in animals especially mammals.
- The paper also acquaints the students with concepts of reproductive processes and endocrine functioning in animals especially mammals.

B.Sc Semester-3rd: Apiculture (SEC) UZOTS-301 (17-18)

Course Learning Outcome: The students will:

- Understand the common species, social organization, morphology and basic life cycle of honey bees.
- Learn about bee keeping tools and equipment's.
- Learn to manage beehives for honey production and pollination.
- Learn about Bee diseases and enemies.
- Learn to harvest and market honey.

B.Sc Semester-3rd: Apiculture (SEC) UZOTS-301 (18-19)

Course Learning Outcome: The students will:

- Understand the common species, social organization, morphology and basic life cycle of honey bees.
- Learn about bee keeping tools and equipment's.
- Learn to manage beehives for honey production and pollination.
- Learn about Bee diseases and enemies.
- Learn to harvest and market honey.

B.Sc. Semester-IV: Principles of Genetics and Evolutionary Biology UZOTC-401(17-18)

Course Learning Outcome: The paper includes principles of Genetics and Evolutionary Biology:

- The paper introduces students to different aspects of mitosis, meiosis, chromosome structure types and changes.

- The paper not only gives students fundamental concept of genetics but also gives them deep insight in understanding the concept of evolution.
- The paper also exposes the students to evolution of life through Lamarckism's Darwanisms and Neo-Darwanisims.
- The paper also deals with different evidences which support the distribution and idea of evolution.
- The study of population genetics and species concept help in understanding the mechanism of speciation.

B.Sc. Semester-IV: Principles of Genetics and Evolutionary Biology UZOTC-401(18-19)

Course Learning Outcome: The paper includes principles of Genetics and Evolutionary Biology:

- The paper introduces students to different aspects of mitosis, meiosis, chromosome structure types and changes.
- The paper not only gives students fundamental concept of genetics but also gives them deep insight in understanding the concept of evolution.
- The paper also exposes the students to evolution of life through Lamarckism's Darwanisms and Neo-Darwanisims.
- The paper also deals with different evidences which support the distribution and idea of evolution.
- The study of population genetics and species concept help in understanding the mechanism of speciation.

B.Sc. Semester-IV: Aquarium Fish Keeping UZOTS-401 (SEC)

Course Learning Outcome: The paper deals with Aquarium fish keeping and students can learn:

- Setting and maintenance of an aquarium
- Identification of different types Exotic and Endemic/Fresh and marine water fishes.
- Can recognise the morphology and nutritional requirements of different fish species.
- Match the appropriate and select the food diet according to the type of fish and
- Packing, transport and quarantine methods and trade regulation and laws related to aquarium fishes.

B.Sc. Semester-5th: Parasitology (17-18)

Course Learning Outcome: The students should be able to:

- Learn the scope, symbiotic relationships, parasitic relationships, adaptations and immunity.
- Learn the distribution of important parasitic infections.
- Describe the common parasitic diseases and life-threatening conditions caused by helminths and protozoans and life cycles of parasites of medical importance.
- Learn the principles of management for common parasitic diseases and life-threatening conditions.

- Outline methods of disease prevention

B.Sc. Semester-V. Public Health and Hygiene (SEC) (18-19)

Course Learning Outcome: The students should be able to

- Learn major nutritional deficiency diseases and get aware about major National Health policies.
- Understand about Communicable and non-communicable diseases, their causative agents, pathogenesis and their preventions.
- About mental health diseases like depressions.
- About drug addiction like smoking, alcoholism and their deaddiction.

B.Sc. Semester-5th: Applied Zoology (18-19)

Course Learning Outcome: The paper deals with varied Applied field of Zoology:

- Familiarizes the students with the scope and applications of Parasitology and study pf Protozoans and Helminth Parasites.
- The paper also sensitizes the students with the recent concept of Biotechnology and its role in animal welfare.
- The paper also deals with the aspects of animal husbandry including study of Economically important dairy cattle breeds and cattle diseases.
- The paper also acquaints the students with the management of poultry breads and poultry diseases.
- It also deals with the cultural practices among crop viots peas etc., and also helps the students to understand the induced breeding techniques.

B.Sc. Semester-6th: Economic Zoology (17-18)

Course Learning Outcome: The Paper Economic Zoology deals with:

- To familiarize with the value of studying various general practices, Principles and techniques in farming and rearing of animals in sericulture (silk worms) apiculture (honey bees) Aquaculture (fisheries, prawn culture, pearl culture), poultry (fowls) and cattle husbandry.
- Provides an insight into the relative usefulness of animals as human food.
- The course introduces the students to some important economic aspects of Zoology, a line which they may ultimately choose to develop for their self-employment.

B.Sc. Semester-6th: Aquatic Biology (18-19)

Course Learning Outcome: The Paper deals with the study of Aquatic Ecosystem both freshwater and Marine:

- Emphasis on the impact of physical and chemical factors on Aquatic ecosystems.
- The paper deals with the lotic and lentic water bodies with an emphasis on their flora and fauna.

- It helps the students to study the marine flora and fauna with special reference of sea weeds and to study the impact of oil spills on marine life.
- The paper deals with the anthropologic activities that leads to aquatic pollution and their management.
- The paper also acquaints the students with the management and conservation of aquatic resources.

B.Sc. Semester-6th: Sericulture (18-19)

Course Learning Outcome: The course will enable the students to understand the different types of silkworms and their races.

- To understand the biology of silkworms in general and biology of mulberry silkworm in particular.
- To understand the various diseases about the transmission and pathogenesis and various diseases effecting silkworms.
- To enable the students to acquaints themselves with the culturing practices/methods of silkworms.

DEPARTMENT OF BIOTECHNOLOGY

COURSES TAUGHT IN THE YEAR 2018-19

Course Title: Biochemistry and Metabolism

Course Code: UBTTC-101

Course Credits: 06

Learning outcomes

i. The Course aims to make students familiar with the basics of Biochemistry and various biochemical processes with a special emphasis on metabolism of various biomolecules like carbohydrates, Proteins, Lipids and Nucleic acids.
ii. The students get an overview of various metabolic pathways and cycles involved in cellular metabolism and how an imbalance or anomaly in functioning of these pathways can prove to be of clinical significance.
iii. The course aims at priming the students towards understanding deeper concepts of cellular functioning in the coming semesters.

Course Title: General and Applied Microbiology

Course Code: UBTTC-201

Course Credits: 06

Learning Outcomes

i. General and Applied Microbiology course is designed to provide the student with strong theoretical base of microbiology.
ii. The course is designed to introduce the student with the principles and practical considerations of microbiology.

iii. It also includes the concept, principles and methods used in microbial biotechnology and the possibilities of production of various products from microbial source.

Course Title: Cell and Molecular Biology

Course Code: UBTTC-301

Course Credits: 06

Learning Outcomes

i. The course aims to make students well versed with structural and functional information about the cell.
ii. The students will be educated about various concepts of genetics and important cellular processes like replication, transcription and translation.
iii. Various aspects of the course like gene regulatory mechanisms and applied genetics are of importance for the students.

Course Title: Enzymology and Bioprocess Technology

Course Code: UBTTC-301

Course Credits: 06

Learning Outcomes

i. The course deals with the study and understanding of enzymes as biological catalysts and their biological significance.
ii. The students learn about various aspects of enzymology like enzyme kinetics, characteristics and structural organization of enzymes and various enzyme catalyzed reactions.
iii. The students are given an insight into various biophysical and biochemical techniques currently being employed.

Course Title: Plant Biotechnology and Genetic Engineering

Course Code: UBTTC-501

Course Credits: 06

Learning Outcomes

i. This course is intended to introduce the student with the theoretical information and practical experience in plant tissue culture. Special emphasis is placed on setting up and operating a plant tissue culture laboratory.
ii. The course also familiarize the students with the techniques employed in genetic engineering and Recombinant DNA technology.
iii. Focuses on the course work that prepares the student for immediate employment in plant tissue culture industry.

Course Title: Immunology and Animal Biotechnology

Course Code: UBTTC-601

Course Credits: 06

Learning Objectives

i. The Course aims to educate students on how the body defends itself from pathogenic invasions; the different strategies and players involved in body's response to various antigenic encounters.
ii. The students also get to know about animal tissue culture strategies and how animal cell culture is different from microbial and plant tissue culture.
iii. The students learn about various techniques of clinical and diagnostic significance and how these techniques are useful in diagnosing and identifying various conditions arising in the body.

Skill Enhancement Course (SEC) –I

Course Title: Environmental Biotechnology

Course Code: UBTTS-301

Course Credits: 04

Learning Outcomes

i. Environment Biotechnology aims at providing the students with an understanding of various issues related to environment.
ii. The focus is on the scope and importance of environmental biotechnology and recent biotechnological advances.
iii. Additionally, the focus is also on the adverse health effect of Xenobiotics which plays an important role in addressing public health challenge.

Skill Enhancement Course (SEC)-II

Course Title: Food Biotechnology

Course Code: UBTTS-401

Course Credits: 04

Learning Outcomes

i. The course deals with the understanding of various components of food, their composition and Biochemistry.
ii. The various flavours added to our daily dietary food is due to trifling in various components of food besides it maintaining the natural nutrition of various low shelf life foods.
iii. Minimal processing of food and manufacture of fruit juices, jams etc is the main component of food industry, providing job opportunities.

Course Title: Biotechnology for Human Welfare

Course Code: UBTTDSE-502

Course Credits: (06)

Learning Outcomes

i. Biotechnology for human welfare aims to provide introduction of various fields of biotechnology e.g. Agricultural, pharmaceutical and industrial biotechnology and their contribution for human welfare.
ii. It aims at gaining an understanding of current experimentation in biotechnology and genetic engineering.
iii. The course imparts knowledge regarding benefits of biotechnology in forensic science and crime detection by employing various molecular biology techniques.

Course Title: Intellectual Property Rights

Course Code: UBTTS-501

Course Credits: 04

Learning outcomes

i. The Course will ensure that students understand the concept of Intellectual Property and the need to protect IP.
ii. Various Intellectual property rights and their applicability in different spheres including biology will make students aware of piracy related issues.
iii. The students will learn about various organizations which are authorized to grant IPR and various case studies.

Course Title: Industrial Fermentations

Course Code: UBTTDSE-602

Course Credits: (06)

Learning Outcomes

i. The course is designed to provide the basic know how of bioreactors. It provides the insight of various types of fermentation techniques and the product development.
ii. Process of production of industrial chemicals, purification of proteins and downstream processing is also included for providing students a deeper knowledge of fermentation.
iii. Metabolic engineering of secondary metabolic products for gaining highest productivity of the product is also included in the curriculum. The course intends to provide the significance of biotechnology in industry.

Course Title: Clinical Biochemistry

Course Code: UBTTS-601

Course Credits: 0 4

Learning Objectives

i. The Course aims to impart basic knowledge of clinical biochemistry involving techniques ranging from collection, handling and processing of clinical samples.
ii. The students will be demonstrated the importance of various different diagnostic tools and techniques useful in clinical diagnostics.

GOVT. COLLEGE FOR WOMEN, PARADE GROUND, JAMMU-180001, J&K.

(Erstwhile Maharani Mahila College)

Autonomous college under the University of Jammu

College for Potential for Excellence, 2016

(Estd. 1944)

Name of Department: Department of Computer Science

Programmes offered: 1. Bachelor of Computer Application
2. Bachelor of Science
3. Master of Computer Application

Programme Outcomes: The present Learning Outcome-based Curriculum Framework for bachelor's and masters degrees in Computer Science is intended to facilitate the students to achieve the following.

- To develop an understanding and knowledge of the basic theory of Computer Science and Information Technology with a good foundation on theory, systems and applications such as algorithms, data structures, data handling, data communication and computation.
- To develop the ability to use this knowledge to analyze new situations.
- To acquire necessary and state-of-the-art skills to take up industry challenges. The objectives and outcomes are carefully designed to suit the above-mentioned purpose.
- The ability to synthesize the acquired knowledge, understanding, and experience for a better and improved comprehension of the real-life problems
- To learn skills and tools like mathematics, statistics, physics, and electronics to find the solution, interpret the results, and make predictions for future developments.

Courses Offered:

a)Bachelor of Computer Application and Bachelors of Science

Computer Fundamentals(UBCATC101)	• To bridge the fundamental concepts of computers with the present level of knowledge of the students • Familiarize Operating Systems, Programming Languages, Peripheral Devices, Networking, Multimedia, and the Internet.
Programming in C-Language(UBCATC102)	• Understanding the functional hierarchical code organization. • Ability to define and manage the data structures based on the problem subject domain.
Practical based on UBCATC101 and UBCATC102(UBCAPC150)	• Hands-on experience on MS-suite. • Ability to work with textual information, characters, and strings.

	• Ability to work with arrays of complex objects.
Data structure using C-language(UBCATC201)	• Develop skills in the implementation and applications of data structures. • Implementation of basic algorithms for operations on arrays, linked list, stacks, queues, trees.
Digital Electronics(UBCATC202)	• To understand and examine the structure of various number systems and their applications in digital design. • The ability to understand, analyze and design various combinational and sequential circuits.
Practical based on UBCATC201 and UBCATC202(UBCAPC250)	• To enhance the programming skills and providing insights of computer organizations.
Fundamentals of Operating System (UBCATC301)	• To understand the basic components of a computer operating system and the interactions among the various components.
Database Management System(UBCATC302)	• To understand terms related to database design and management. • To understand the objectives of data and information management.
Practical based on UBCATC301 and UBCATC302(UBCAPC350)	• To learn how to manage a relational database management system (RDBMS).
Software Engineering(UBCATC401)	• Basic knowledge and understanding of the analysis and design of complex systems. • Ability to apply software engineering principles and techniques.
Object-oriented programming structures (UBCATC402)	• To describe the meaning of the object-oriented paradigm and create class hierarchies using the object-oriented design process
Practical based on UBCATC402 (UBCAPC450)	• To use an integrated development environment to write, compile, run and test object-oriented programs.
Computer networks and Internet (UBCATC501)	• To obtain a theoretical understanding of data communications and computer networks.
Practical based on UBCATC501 (UBCAPC550)	• Gaining practical experience in installation, monitoring, troubleshooting of the current LAN systems
Project(UBCAPC650)	• Developing the softwares for organisation
1.Artificial Intelligence 2.Advanced DBMS	• To apply the basic principles, models, and algorithms of AI to recognize, model and solve problems in the analysis and design of the information systems • Be able to develop new methods in databases based on the knowledge of the existing techniques.
1.PHP/SQL 2.Android Programming	• To write PHP scripts to handle HTML forms, write regular expressions including modifiers, operators, and metacharacters. • To install and configure android application development tools and develop user interfaces for the android program.
	• To design and implement programs that make strong use of the classes and objects.

1.Java Programming 2.Python Programming	• To understand python as a useful scripting language. To learn how to identify python object types.
1. Web- Technologies 2.Information Security	• To become familiar with client-server architecture and able to develop web applications using Java technologies. • To develop a basic understanding of security, cryptography, system attacks, and defense mechanism against them.
1. PC Assembly 2.Open System Software	• To be able to assemble/setup and upgrade personal computer systems. To diagnose and isolate faulty components. To optimize system performance and install/connect peripherals. • To get insight into the various open system software and their usage.

b)Master of Computer Application

OBJECT ORIENTED PROGRAMMING USING C++	MCACC101	• To understand how C++ improves C with object-oriented features. • To learn how to write inline functions for efficiency and performance.
DISCRETE MATHEMATICS	MCACC102	• To understand the basic concepts of sets, permutations, relations, graphs, trees, and finite state machines.
OPERATING SYSTEM	MCACC103	• To understand the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.
LAB BASED ON C++ AND OS	MCAPC150	• To implement concepts like polymorphism, class, inheritance, virtual functions, constructor and destructor, friend functions, virtual functions, and abstract classes, etc. • To implement various internal and external commands.
OPERATIONS RESEARCH	MCAEC104	• To identify and develop operation research models from the verbal description of the real system. • To understand the mathematical tools that are needed to solve optimization problems and proposed models.
NUMERICAL COMPUTING	MCAEC105	• To derive numerical methods for various mathematical operations and tasks.
E-COMMERCE	MCAEC106	• Understanding of retailing in e-commerce by analyzing branding and pricing strategies using and determining the effectiveness of the market research.
STATISTICAL FOUNDATION FOR COMPUTER SCIENCE	MCAFC105	• To critically analyze solutions, proofs, and programs in the field of computing. • To identify appropriate mathematical, analytical, or software tools and their use.
DATA STRUCTURES	MCACC201	• Develop skills in the implementation and applications of data structures.

COMPUTER SYSTEM ARCHITECTURE	MCACC202	• To demonstrate computer architecture concepts related to the design of modern processors, memories, and IO.
JAVA PROGRAMMING	MCACC203	• To design and implement programs that make strong use of the classes and objects.
LAB BASED ON DS AND JAVA	MCAPC250	• Develop skills in the implementation and applications of data structures. • To design and implement programs that make strong use of the classes and objects.
ELECTIVES OFFERED BY OTHER DEPARTMENTS (COMMUNICATION SKILLS IN ENGLISH)	MCAEC204	• To train the students in communication and personality skills
R PROGRAMMING	MCAFC205	• To navigate and optimize R integrated development environment studio. • To import external data into R for data processing and statistical analysis.
COMPUTER HARDWARE AND TROUBLESHOOTING	MCAFC206	• To understand the basic concepts of computer hardware, networking and apply their knowledge about computer peripherals. • To identify, rectify problems onboard.
SOFTWARE ENGINEERING	MCACC301	• Basic knowledge and understanding of the analysis and design of complex systems. • Ability to apply software engineering principles and techniques.
ADVANCED DATABASE MANAGEMENT SYSTEM	MCACC302	• Be able to develop new methods in databases based on the knowledge of the existing techniques.
DESIGN AND ANALYSIS OF ALGORITHMS	MCACC303	• To analyze the asymptomatic performance of the algorithms. • To apply important algorithmic design paradigms and method of analysis.
LAB BASED ON DBMS & DESIGN AND ANALYSIS OF ALGORITHMS	MCAPC350	• To learn how to manage a relational database management system (RDBMS). • To synthesize efficient common engineering design situations.
PARALLEL COMPUTING	MCAEC304	• To be able to apply basic algorithmic techniques and design algorithms in shared as well as distributed memory environment.
IMAGE PROCESSING	MCAEC305	• To understand the needs of image transformation. • To develop any image processing application.
DATA WAREHOUSE & DATA MINING	MCAEC306	• To design a data warehouse with dimensional modeling and apply OLAP operations. • To compare and evaluate different data mining techniques like clustering, classification, association and prediction.
PYTHON PROGRAMMING	MCAFC305	• To understand python as a useful scripting language. To learn how to identify python object types.
PHP /MY SQL	MCAFC306	• To write PHP scripts to handle HTML forms, write regular expressions including modifiers, operators, and metacharacters. • To understand the basic concepts of how a database stores information via tables and to retrieve or manipulate data from one or more

		tables.
COMPUTER NETWORKS	MCACC401	• To obtain a theoretical understanding of data communications and computer networks.
ARTIFICIAL INTELLIGENCE	MCACC402	• To apply the basic principles, models, and algorithms of AI to recognize, model and solve problems in the analysis and design of the information systems
THEORY OF COMPUTATION	MCACC403	• To analyze and design Finite Automata, Turing Machines, Push-down Automata, Formal Languages, and Grammars.
MINOR PROJECT	MCAPC450	
ELECTIVE OFFERED BY OTHER DEPARTMENTS	MCAEC404	
CURRENT TRENDS AND TECHNOLOGY	MCAFC405	• To be able to describe the changes in technology and their impacts on businesses and consumers.
INTERNET OF THINGS	MCAFC406	• To discuss the architecture, operations, and business benefits of an IoT solution.
ANDROID PROGRAMMING	MCACC501	• To install and configure android application development tools and develop user interfaces for the android program.
FUNDAMENTALS OF MICROPROCESSORS	MCACC502	• To understand instruction sets and addressing modes. • To understand microcontroller based system design for various applications.
COMPUTER GRAPHICS	MCACC503	• To explain the core concepts of computer graphics including viewing, projection, perspectives, modeling and transformations in 2D and 3D.
LAB OF COMPUTER GRAPHICS & ANDROID	MCAPC550	• To apply the concepts of color models, line clipping, polygon clipping, and circle generation. • To install and configure android application development tools and develop user interfaces for the android program.
COMPILER DESIGN	MCAEC504	• To understand the concepts of lexical analysis, parsing techniques, symbol tables, error recovery, code generation, and code optimization.
CLOUD COMPUTING	MCAEC505	• To explain the core issues of cloud computing such as security, privacy, and interoperability. • To explain, analyze and evaluate various cloud computing models.
SOFT COMPUTING	MCAEC506	• To conceptualize and parametrize various problems to be solved through basic soft computing techniques.

DEPARTMENT OF COMMERCE

SEMESTER I

COURSE NAME: FINANCIAL ACCOUNTING

COURSE CODE: C. No: UBCTC101

COURSE OBJECTIVE: To impart conceptual knowledge of financial accounting and also skill for recording business transaction as per the provisions Companies Act, 2013.

COURSE NAME: BUSINESS ORGANISATION AND MANAGEMENT

COURSE CODE: C. No: UBCTC102

COURSE OBJECTIVE: The basic objective of this course is to provide fundamental knowledge about business management & organization.

SEMESTER II

COURSE NAME: ADVANCED FINANCIAL ACCOUNTING

COURSE CODE: C. No: UBCTC211

COURSE OBJECTIVE: This course provides the students with a detailed knowledge of accounting principles, concepts, techniques and their application to develop ability and skills in practical work situation.

COURSE NAME: CONTEMPORARY MANAGEMENT

COURSE CODE: C. No: UBCTC212

COURSE OBJECTIVE: The basic objective of this course is to provide knowledge about contemporary issues in the business management & organization.

SEMESTER III

COURSE NAME: FUNDAMENTALS OF BUSINESS COMMUNICATION

COURSE CODE: UBCTC301

COURSE OBJECTIVE: To impart knowledge about basic communication to enable the students to think, observe and express effectively in this competitive world.

COURSE NAME: CORPORATE ACCOUNTING

COURSE CODE: UBCTC302

COURSE OBJECTIVE: The contents of the paper `Corporate Accounting' have been designed to impart basic knowledge of various aspects of accounting of corporate world.

COURSE NAME: INDIAN CONTRACT ACT

COURSE CODE: UBCTC303

COURSE OBJECTIVE: The basic objective of this course is to provide knowledge about Indian Contract Act

COURSE NAME: ENTREPRENEURSHIP FOR SMALL BUSINESS (SE)

COURSE CODE: UBCTC307

COURSE OBJECTIVE: To provide exposure to the students regarding entrepreneurial culture so that they can set and manage their own small units.

SEMESTER IV

COURSE NAME: BUSINESS COMMUNICATION SKILL AND DEVELOPMENT

COURSE CODE: UBCTC411

COURSE OBJECTIVE: The basic objective of this course is to develop the communication skills.

COURSE NAME: DIRECT TAX LAWS

COURSE CODE: UBCTC412

COURSE OBJECTIVE: The basic objective of this course is to provide knowledge of basic concepts and practice of income tax to the students.

COURSE NAME: CORPORATE LAWS

COURSE CODE: UBCTC413

COURSE OBJECTIVE: The basic objective of this course is to provide the knowledge of concepts of corporate laws to the students.

COURSE NAME: CUSTOMER RELATIONSHIP MANAGEMENT(SE)

COURSE CODE: UBCTS418

COURSE OBJECTIVE: The objective of the course is to impart basic knowledge of the customer relationship management and e-CRM

SEMESTER V

COURSE NAME: COST ACCOUNTING (SE)

COURSE CODE: UBCTS501

COURSE OBJECTIVE: To familiarize and acquaint the student with application of cost accounting techniques.

COURSE NAME: FUNDAMENTALS OF MARKETING (DSE)

COURSE CODE: UBCTS505

COURSE OBJECTIVE: The objective of this course is to facilitate understanding of the conceptual framework of marketing and its applications in decision making under various environmental constraints.

COURSE NAME: STATISTICS FOR MANAGERS (DSE)

COURSE CODE: UBCTS508

COURSE OBJECTIVE: To develop an understanding of the basic statistical tools and their application in business, finance and economics.

COURSE NAME: TOURISM MANAGEMENT (GE)

COURSE CODE: UBCTS511

COURSE OBJECTIVE: The course aims at imparting knowledge about the various concepts and principles related to tourism. It also highlights the tourism organizations, tourism product and emerging trends in tourism industry.

SEMESTER VI

COURSE NAME: MANAGEMENT ACCOUNTING (SE)

COURSE CODE: UBCTE601

COURSE OBJECTIVE: To impart knowledge about the use of financial, cost and other data for the purpose of managerial planning, control and decision making.

COURSE NAME: BUSINESS ENVIRONMENT (DSE)

COURSE CODE: UBCTE603

COURSE OBJECTIVE: To expose the students to various environment factors related to the business.

COURSE NAME: FINANCIAL MANAGEMENT (DSE)

COURSE CODE: UBCTE606

COURSE OBJECTIVE: The objective of this course is to provide basic knowledge of concept, principles and practices of financial management.

COURSE NAME: INDIAN ECONOMY (GE)

COURSE CODE: UBCTE612

COURSE OBJECTIVE: The course imparts knowledge about major trends in economic indicators and policy debates in India in the post-independence period, with particular emphasis on paradigm shifts and turning points.

PG DEPARTMENT OF MUSIC

M.A. MUSIC SEMESTER I

C.NO. PGMUTC400 TITLE: APPLIED THEORY

COURSE LEARNING OUTCOMES: The students get the knowledge about the historical development of the prescribed ragas and different kind of talas with different layakaries. They get the knowledge about the different Gharanas of vocal music and will get the knowledge about legends of Hindustani Music.

C.NO. PGMUTC-401 TITLE: HISTORY OF INDIAN MUSIC-I

COURSE LEARNING OUTCOMES: The students will get the knowledge about the historical development of the music from Ancient to Modern period. The students will come to know about different styles of singing, classifications of Ragas system, Nibadh and Anibadh Gaan etc.

C.NO. PGMUTC-402 TITLE: STAGE PERFORMANCE-I

COURSE LEARNING OUTCOMES: The students will learn various ragas practically. They will learn to perform and present ragas on stage before the audience.

C.NO. PGMUTC-403 TITLE: PRACTICAL TEST-I (VIVA-VOCE)

COURSE LEARNING OUTCOMES: The students get to study various practical aspects of prescribed ragas and demonstrate practically the scales, ragangs and composition.

C.NO. PGMUTC-404 TITLE: SOFT COURSE PRACTICAL (BASIC TECHNIQUES OF HARMONIUM PLAYING)

COURSE LEARNING OUTCOMES: The students gain the practical knowledge of Harmonium playing and gaining skill and ability to perform as well and acquire the knowledge and experience through the project work to do research in music.

C.NO. PGMUTC-405 TITLE: FOLK MUSIC OF JAMMU REGION (DUGGAR)

COURSE LEARNING OUTCOMES: Students get the knowledge of Folk Music Compositions, regional songs such as Dholru and Baramaha. Also get the knowledge of folk Instruments and get knowledge to prepare project file.

M.A. MUSIC SEMESTER II

C.NO. PGMUTC450 TITLE: APPLIED THEORY-II

COURSE LEARNING OUTCOMES: Students acquire knowledge of comparative study of various talas and ragas, karnatiki Tal Paditi, classification of Indian Instruments and Glaranas of Sitar.

C.NO. PGMUTC451 TITLE: HISTORY OF INDIAN MUSIC-II

COURSE LEARNING OUTCOMES: The students will get the knowledge about the detail history of Indian Music from 13^{th} to 18^{th} century, i.e. different Granthas, different states of singing, time theory of Indian Ragas.

C.NO. PGMUTC-452 TITLE: STAGE PERFORMANCE-II

COURSE LEARNING OUTCOMES: The students will learn various prescribed ragas practically to perform and present on stage before the audience.

C.NO. PGMUTC-453 TITLE: PRACTICAL TEST-II (VIVA-VOCE)

COURSE LEARNING OUTCOMES: The students get to study various practical aspects of prescribed ragas, compare different aspects of prescribed ragas and ragangs therein.

C.NO. PGMUTC-454 TITLE: SOFT COURSE PRACTICAL (BASIC TECHNIQUES OF HARMONIUM PLAYING-II)

COURSE LEARNING OUTCOMES: The students gain the practical knowledge the prescribed ragas, alankaras and composition and gaining skill and ability to perform as well. Also acquire the knowledge and experience through project work which will be useful to do research in music.

C.NO. PGMUTC-455 TITLE: FOLK MUSIC OF JAMMU REGION-II

COURSE LEARNING OUTCOMES: Students get the knowledge of various characteristics features of Bhakh in a group such as swai, tonal establishment and voice culture. To prepare project file on folk Instruments/ folk artists of Jammu/ folk history of Jammu region.

M.A. MUSIC SEMESTER III

C.NO. PGMUTC500 TITLE: APPLIED THEORY-III

COURSE LEARNING OUTCOMES: Students get knowledge about the historical development of the prescribed ragas with respect to their scales, various concepts of western music like harmony, melody, chords and scales.

C.NO. PGMUTC501 TITLE: HISTORY OF INDIAN MUSIC-III

COURSE LEARNING OUTCOMES: The students will get an understanding about aesthetics in music, its approaches, scope and application.

C.NO. PGMUTC-502 TITLE: STAGE PERFORMANCE-III

COURSE LEARNING OUTCOMES: The students will learn various prescribed ragas practically to perform and present on stage in a proper format before the audience.

C.NO. PGMUTC-503 TITLE: PRACTICAL TEST-III (VIVA-VOCE)

COURSE LEARNING OUTCOMES: The students learn to compare different aspects of the prescribed ragas and demonstrate practically the scales, ragang and compositions therein.

C.NO. PGMUTC-504 TITLE: BASIC TECHNIQUES OF HARMONIUM PLAYING-III

COURSE LEARNING OUTCOMES: The students will be able to playing and singing at least 10 Alankaras in single and double layakaries with Tabla. Student will prepare the project on the Historical development of Harmonium.

C.NO. PGMUTC-505 TITLE: FOLK MUSIC OF JAMMU REGION-III

COURSE LEARNING OUTCOMES: Students gain the knowledge of various forms of Folk Music of Jammu region. Also get knowledge of the renowned local Artists of Jammu region and their contribution in the field.

M.A. MUSIC SEMESTER IV

C.NO. PGMUTC550 TITLE: APPLIED THEORY-IV

COURSE LEARNING OUTCOMES: Students acquire an indepth knowledge of prescribed Ragas. They get able to know the importance of Nari- Rase in Indian Music.

C.NO. PGMUTC551 TITLE: HISTORY OF INDIAN MUSIC-IV

COURSE LEARNING OUTCOMES: The students will understand the progress and development of Music from Vedic period to now. It will enhance their knowledge in the field of musicology.

C.NO. PGMUTC-552 TITLE: STAGE PERFORMANCE-IV

COURSE LEARNING OUTCOMES: The students will develop the confidence to perform a Raga for a long duration of time in a detailed performance on stage.

C.NO. PGMUTC-553 TITLE: PRACTICAL TEST-IV (VIVA-VOCE)

COURSE LEARNING OUTCOMES: The students learn to compare different aspects of the prescribed ragas and demonstrate practically the scales, ragang and compositions therein.

C.NO. PGMUTC-554 TITLE: BASIC TECHNIQUES OF HARMONIUM PLAYING-IV

COURSE LEARNING OUTCOMES: The students will learn various finger techniques in Harmonium playing. They learn to play Dhuns, Patrotic Songs, Alankaras, etc.

C.NO. PGMUTC-555 TITLE: FOLK MUSIC OF JAMMU REGION-IV

COURSE LEARNING OUTCOMES: Students gain the knowledge of various forms of Folk Music of Jammu region such as Marriage Songs (Suhaag, Ghodi), Seasonal Songs (Baramaha, Dholru). They also come to know about Folk Instruments. Students acquire the knowledge and experience through the project work which will be useful to do research in music

Programme Learning Outcomes for P.G. Home Science course(Community Resource Management and Extension):

• Understand and appreciate the role of interdisciplinary sciences in the development and well- being of individuals, families and communities.

• Acquire professional and entrepreneurial skills for economic empowerment of self in particular, and community in general.

• Develop professional skills in product making, communication technologies and human development.

• Understand the process and techniques of development reporting for various media

• Take science from the laboratory to the people.

• Gaining hand on experience and developing programmes for Community Radio.

Communication Skills Content: Students are competent in public speaking, writing and inter personal skills. Students are exposed to technical and soft skills. Communication is a core area in the discipline of Home Science.

Critical thinking Content: Students develop critical sensitivity towards both community issues and process. They learn to do lateral thinking developing out of the box solution and effective problem solving skills to address community issues.

Cooperation/Team work Content: Students have basic management skills for independently organizing events, resource mobilization and leading community based projects and initiatives.

Multicultural competence Content: Students are confident of working in diverse socio-cultural contexts. They are able to effectively engage with multicultural groups and teams. They have sensitivities of cross cultural and ethnic diversity which they can apply to different settings.

Lifelong learning Content: Students are capable of self-directed/ paced learning for the continued learning and holistic development for meeting their professional and personal needs in varying environment and changing contexts.

Objectives of different Courses offered in P.G. Home Science(Community Resource Management and Extension):

S. No.	Semester	Course	Objectives
1.	1st	**Introduction To Statistics And Research**	1. To learn basic statistical procedures for research. 2. To learn applications, analysis and interpretation of statistical procedures. 3. To understand the scope of computer application in research. 4. To understand the basic concept of research. •
2.	**1st**	**Gender Development**	• To become familiar with Government and non government initiatives in Gender empowerment, educational, social and legal aspects. • To understand individual women experience in empowerment and justice.
3.	1st	**Community Resource Management & Leadership**	1. To develop skills in the use of Resources- Human and Material. 2. To understand family and societal problems which ultimately will lead to family and community well being. • To understand the significance of resource management in current socio economic context.
4.	1st	**Socio Economic Environment And Development Perspective**	• To understand the socio economic structure of communities, concept and aspects influencing sustainable development, policies of development and their impact on communities. • To understand the concept and aspects influencing sustainable development. • To gain an overview of consumption behaviour of families & communities – its impact on National & global resources. • To understand consumer role, rights and responsibilities as Indian & global citizens in promoting sustainable consumption & sustainable development.
5.	1st	**Practicals**	• To understand and develop skills for working with diverse community groups. • To develop skills in extension programme planning, implementation and evaluation.
6.	2nd	**Research Methods And Scientific Writing**	• To understand the purpose and procedure of research study. • To learn basic format of research design and different types of research. • To learn how to write and evaluate research papers and proposals. • To appreciate and understand importance of writing scientifically
7.	2nd	**Sustainable Development: Initiative And Approaches**	• To be aware of the issues and perspectives influencing environmental sustainability. • To understand the dimensions of environmental problems and associated hazards and risks. • To be able to critique policies, programmes and strategies for environmental management and their ethical implications
8.	2nd	**Extension Education And Communication**	• Understand the widening concept of extension • Feel strongly for the people without power and influence them to become partner in development projects and programmes • To analyze the issues and problems of a specific community for need assessment • To develop skills in the use of participating approaches in programme planning and evaluation
9.	2nd	**Media System & Communication**	• To develop an understanding of various communication systems working in the environment.

		Technology	• To develop a sound knowledge base of the relevance, applicability and complementary nature of the various media used in communication. • To enhance the versatility of the students in the selection and use of various media in different Socio- cultural environments. • To understand the differences in the various types of communication transactions.
10	2nd	**Practicals**	• To Plan need based educational programme and make communication kit for a specific target group in the community • To study the role of various NGO's and evaluate their development plans. • To Analyse of services of Financial Institutions, banking/ non-banking/ private
11.	3rd	**Advanced Extension Programme Design And Management**	• To understand the key issues of extension and development. • To be aware of the aspects influencing design of the development programmes. • To understand the relationship between the aspects and procedures involved in programme planning, monitoring and evaluation.
12.	3rd	**Community Health Perspective**	• To understand the multifaceted nature of community health. • To develop a holistic understanding of sociology of health and people's perception towards health • To be able to critique policies, intervention programmes, strategies adopted for addressing community health issues.
13.	3rd	**Development Communication And Journalism**	• To understand the concept of Development Communication. • To understand the process, functions and technologies of development journalism with reference to print, electronic and modern media. • To evaluate the relevance, potential and use of various media as tools of development.
14.	3rd	**Dissertation**	• To develop a capability to contribute to research and development work. • to use a holistic view to critically, independently and creatively identify, formulate a problem for research. • To demonstrate: Considerably more in-depth knowledge of the subject, social issues, including deeper insight into current research and development work.
15.	3rd	**Practicals**	• To Plan, Organize, Conduct and evaluate training programmes for different developmental goals and various target groups. • Developing skills in selection and use of different training methods • Training Women for financial assistance/ loan facilities from banks and other financial agencies • To gain hands on experience of working in an environment setting linked with development communication and extension (On Job Training) •
16.	4th	**Radio And Broadcast Management**	• To understand the role of Journalism in the context of India's development circumstances • To appreciate the structure and scope of different agencies and bodies of print and broadcast journalism • To Understand the Principles and skills involved in the writing, reporting and editing of development issues through different journalistic mediums
17.	4th	**Training And Development For Livelihood Sustainability**	• To become aware of the different livelihood systems and recognize the aspects influencing their sustainability. • To understand and critically evaluate the different training methodologies and their suitability for development goals • To understand the prospects of different strategies for enhancing livelihood sustainability • To be able to conceptualize the training process and understand the roles and functions of different phases of training process
18.	4th	**Conflict And Peace Issues In Communities**	• To develop sensitivity to the issues and significance of conflict in communities. • To understand the relationship between conflict, peace and development

			process. • To understand the scope of different techniques and strategies for conflict resolution and peace
19.	4th	**Dissertation**	• To develop capability to plan and use adequate methods to conduct qualified tasks in given frameworks and to evaluate the research work. • The overall goal of the thesis is for the student to display the knowledge and capability required for independent work as a Master in home science.
20.	4th	**Practicals**	• Analysis of radio programmes on development issues- listenership surveys and audience perceptions. • Writing for radio news and edutainment programmes • Preparing scripts for radio features and public service advertisements and documentaries • Interviewing, anchoring, commentary and voice dispatches-audio and producing different types of audio programmes (women issues)

Programme Learning Outcomes for P.G. Home Science course(Community Resource Management and Extension):

• Understand and appreciate the role of interdisciplinary sciences in the development and well- being of individuals, families and communities.

• Acquire professional and entrepreneurial skills for economic empowerment of self in particular, and community in general.

• Develop professional skills in product making, communication technologies and human development.

• Understand the process and techniques of development reporting for various media

• Take science from the laboratory to the people.

• Gaining hand on experience and developing programmes for Community Radio.

Communication Skills Content: Students are competent in public speaking, writing and inter personal skills. Students are exposed to technical and soft skills. Communication is a core area in the discipline of Home Science.

Critical thinking Content: Students develop critical sensitivity towards both community issues and process. They learn to do lateral thinking developing out of the box solution and effective problem solving skills to address community issues.

Cooperation/Team work Content: Students have basic management skills for independently organizing events, resource mobilization and leading community based projects and initiatives.

Multicultural competence Content: Students are confident of working in diverse socio-cultural contexts. They are able to effectively engage with multicultural groups and teams. They have sensitivities of cross cultural and ethnic diversity which they can apply to different settings.

Lifelong learning Content: Students are capable of self-directed/ paced learning for the continued learning and holistic development for meeting their professional and personal needs in varying environment and changing contexts.

Objectives of different Courses offered in P.G. Home Science(Community Resource Management and Extension):

S. No.	Semester	Course	Objectives
1.	1st	**Introduction To Statistics And Research**	1. To learn basic statistical procedures for research. 2. To learn applications, analysis and interpretation of statistical procedures. 3. To understand the scope of computer application in research. 4. To understand the basic concept of research. •
2.	**1st**	**Gender Development**	• To become familiar with Government and non government initiatives in Gender empowerment, educational, social and legal aspects. • To understand individual women experience in empowerment and justice.
3.	1st	**Community Resource Management & Leadership**	1. To develop skills in the use of Resources- Human and Material. 2. To understand family and societal problems which ultimately will lead to family and community well being. • To understand the significance of resource management in current socio economic context.
4.	1st	**Socio Economic Environment And Development Perspective**	• To understand the socio economic structure of communities, concept and aspects influencing sustainable development, policies of development and their impact on communities. • To understand the concept and aspects influencing sustainable development. • To gain an overview of consumption behaviour of families & communities – its impact on National & global resources. • To understand consumer role, rights and responsibilities as Indian & global citizens in promoting sustainable consumption & sustainable development.
5.	1st	**Practicals**	• To understand and develop skills for working with diverse community groups. • To develop skills in extension programme planning, implementation and evaluation.
6.	2nd	**Research Methods And Scientific Writing**	• To understand the purpose and procedure of research study. • To learn basic format of research design and different types of research. • To learn how to write and evaluate research papers and proposals. • To appreciate and understand importance of writing scientifically
7.	2nd	**Sustainable Development: Initiative And Approaches**	• To be aware of the issues and perspectives influencing environmental sustainability. • To understand the dimensions of environmental problems and associated hazards and risks. • To be able to critique policies, programmes and strategies for environmental management and their ethical implications
8.	2nd	**Extension Education And Communication**	• Understand the widening concept of extension • Feel strongly for the people without power and influence them to become partner in development projects and programmes • To analyze the issues and problems of a specific community for need assessment • To develop skills in the use of participating approaches in programme planning and evaluation
9.	2nd	**Media System & Communication**	• To develop an understanding of various communication systems working in the environment.

		Technology	• To develop a sound knowledge base of the relevance, applicability and complementary nature of the various media used in communication. • To enhance the versatility of the students in the selection and use of various media in different Socio- cultural environments. • To understand the differences in the various types of communication transactions.
10	2nd	**Practicals**	• To Plan need based educational programme and make communication kit for a specific target group in the community • To study the role of various NGO's and evaluate their development plans. • To Analyse of services of Financial Institutions, banking/ non-banking/ private
11.	3rd	**Advanced Extension Programme Design And Management**	• To understand the key issues of extension and development. • To be aware of the aspects influencing design of the development programmes. • To understand the relationship between the aspects and procedures involved in programme planning, monitoring and evaluation.
12.	3rd	**Community Health Perspective**	• To understand the multifaceted nature of community health. • To develop a holistic understanding of sociology of health and people's perception towards health • To be able to critique policies, intervention programmes, strategies adopted for addressing community health issues.
13.	3rd	**Development Communication And Journalism**	• To understand the concept of Development Communication. • To understand the process, functions and technologies of development journalism with reference to print, electronic and modern media. • To evaluate the relevance, potential and use of various media as tools of development.
14.	3rd	**Dissertation**	• To develop a capability to contribute to research and development work. • to use a holistic view to critically, independently and creatively identify, formulate a problem for research. • To demonstrate: Considerably more in-depth knowledge of the subject, social issues, including deeper insight into current research and development work.
15.	3rd	**Practicals**	• To Plan, Organize, Conduct and evaluate training programmes for different developmental goals and various target groups. • Developing skills in selection and use of different training methods • Training Women for financial assistance/ loan facilities from banks and other financial agencies • To gain hands on experience of working in an environment setting linked with development communication and extension (On Job Training) •
16.	4th	**Radio And Broadcast Management**	• To understand the role of Journalism in the context of India's development circumstances • To appreciate the structure and scope of different agencies and bodies of print and broadcast journalism • To Understand the Principles and skills involved in the writing, reporting and editing of development issues through different journalistic mediums
17.	4th	**Training And Development For Livelihood Sustainability**	• To become aware of the different livelihood systems and recognize the aspects influencing their sustainability. • To understand and critically evaluate the different training methodologies and their suitability for development goals • To understand the prospects of different strategies for enhancing livelihood sustainability • To be able to conceptualize the training process and understand the roles and functions of different phases of training process
18.	4th	**Conflict And Peace Issues In Communities**	• To develop sensitivity to the issues and significance of conflict in communities. • To understand the relationship between conflict, peace and development

			process. • To understand the scope of different techniques and strategies for conflict resolution and peace
19.	4th	**Dissertation**	• To develop capability to plan and use adequate methods to conduct qualified tasks in given frameworks and to evaluate the research work. • The overall goal of the thesis is for the student to display the knowledge and capability required for independent work as a Master in home science.
20.	4th	**Practicals**	• Analysis of radio programmes on development issues- listenership surveys and audience perceptions. • Writing for radio news and edutainment programmes • Preparing scripts for radio features and public service advertisements and documentaries • Interviewing, anchoring, commentary and voice dispatches-audio and producing different types of audio programmes (women issues)

GOVT. COLLEGE FOR WOMEN, PARADE GROUND, JAMMU-180001, J&K.

(Erstwhile Maharani Mahila College)

Autonomous college under the University of Jammu

College for Potential for Excellence, 2016

(Estd. 1944)

Name of Department: Department of Computer Science

Programmes offered: 1. Bachelor of Computer Application
2. Bachelor of Science
3. Master of Computer Application

Programme Outcomes: The present Learning Outcome-based Curriculum Framework for bachelor's and masters degrees in Computer Science is intended to facilitate the students to achieve the following.

- To develop an understanding and knowledge of the basic theory of Computer Science and Information Technology with a good foundation on theory, systems and applications such as algorithms, data structures, data handling, data communication and computation.
- To develop the ability to use this knowledge to analyze new situations.
- To acquire necessary and state-of-the-art skills to take up industry challenges. The objectives and outcomes are carefully designed to suit the above-mentioned purpose.
- The ability to synthesize the acquired knowledge, understanding, and experience for a better and improved comprehension of the real-life problems
- To learn skills and tools like mathematics, statistics, physics, and electronics to find the solution, interpret the results, and make predictions for future developments.

Courses Offered:

a)Bachelor of Computer Application and Bachelors of Science

Computer Fundamentals(UBCATC101)	• To bridge the fundamental concepts of computers with the present level of knowledge of the students • Familiarize Operating Systems, Programming Languages, Peripheral Devices, Networking, Multimedia, and the Internet.
Programming in C-Language(UBCATC102)	• Understanding the functional hierarchical code organization. • Ability to define and manage the data structures based on the problem subject domain.
Practical based on UBCATC101 and UBCATC102(UBCAPC150)	• Hands-on experience on MS-suite. • Ability to work with textual information, characters, and strings.

	• Ability to work with arrays of complex objects.
Data structure using C-language(UBCATC201)	• Develop skills in the implementation and applications of data structures. • Implementation of basic algorithms for operations on arrays, linked list, stacks, queues, trees.
Digital Electronics(UBCATC202)	• To understand and examine the structure of various number systems and their applications in digital design. • The ability to understand, analyze and design various combinational and sequential circuits.
Practical based on UBCATC201 and UBCATC202(UBCAPC250)	• To enhance the programming skills and providing insights of computer organizations.
Fundamentals of Operating System (UBCATC301)	• To understand the basic components of a computer operating system and the interactions among the various components.
Database Management System(UBCATC302)	• To understand terms related to database design and management. • To understand the objectives of data and information management.
Practical based on UBCATC301 and UBCATC302(UBCAPC350)	• To learn how to manage a relational database management system (RDBMS).
Software Engineering(UBCATC401)	• Basic knowledge and understanding of the analysis and design of complex systems. • Ability to apply software engineering principles and techniques.
Object-oriented programming structures (UBCATC402)	• To describe the meaning of the object-oriented paradigm and create class hierarchies using the object-oriented design process
Practical based on UBCATC402 (UBCAPC450)	• To use an integrated development environment to write, compile, run and test object-oriented programs.
Computer networks and Internet (UBCATC501)	• To obtain a theoretical understanding of data communications and computer networks.
Practical based on UBCATC501 (UBCAPC550)	• Gaining practical experience in installation, monitoring, troubleshooting of the current LAN systems
Project(UBCAPC650)	• Developing the softwares for organisation
1.Artificial Intelligence 2.Advanced DBMS	• To apply the basic principles, models, and algorithms of AI to recognize, model and solve problems in the analysis and design of the information systems • Be able to develop new methods in databases based on the knowledge of the existing techniques.
1.PHP/SQL 2.Android Programming	• To write PHP scripts to handle HTML forms, write regular expressions including modifiers, operators, and metacharacters. • To install and configure android application development tools and develop user interfaces for the android program.
	• To design and implement programs that make strong use of the classes and objects.

1.Java Programming 2.Python Programming	• To understand python as a useful scripting language. To learn how to identify python object types.
1. Web- Technologies 2.Information Security	• To become familiar with client-server architecture and able to develop web applications using Java technologies. • To develop a basic understanding of security, cryptography, system attacks, and defense mechanism against them.
1. PC Assembly 2.Open System Software	• To be able to assemble/setup and upgrade personal computer systems. To diagnose and isolate faulty components. To optimize system performance and install/connect peripherals. • To get insight into the various open system software and their usage.

b)Master of Computer Application

OBJECT ORIENTED PROGRAMMING USING C++	MCACC101	• To understand how C++ improves C with object-oriented features. • To learn how to write inline functions for efficiency and performance.
DISCRETE MATHEMATICS	MCACC102	• To understand the basic concepts of sets, permutations, relations, graphs, trees, and finite state machines.
OPERATING SYSTEM	MCACC103	• To understand the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.
LAB BASED ON C++ AND OS	MCAPC150	• To implement concepts like polymorphism, class, inheritance, virtual functions, constructor and destructor, friend functions, virtual functions, and abstract classes, etc. • To implement various internal and external commands.
OPERATIONS RESEARCH	MCAEC104	• To identify and develop operation research models from the verbal description of the real system. • To understand the mathematical tools that are needed to solve optimization problems and proposed models.
NUMERICAL COMPUTING	MCAEC105	• To derive numerical methods for various mathematical operations and tasks.
E-COMMERCE	MCAEC106	• Understanding of retailing in e-commerce by analyzing branding and pricing strategies using and determining the effectiveness of the market research.
STATISTICAL FOUNDATION FOR COMPUTER SCIENCE	MCAFC105	• To critically analyze solutions, proofs, and programs in the field of computing. • To identify appropriate mathematical, analytical, or software tools and their use.
DATA STRUCTURES	MCACC201	• Develop skills in the implementation and applications of data structures.

COMPUTER SYSTEM ARCHITECTURE	MCACC202	• To demonstrate computer architecture concepts related to the design of modern processors, memories, and IO.
JAVA PROGRAMMING	MCACC203	• To design and implement programs that make strong use of the classes and objects.
LAB BASED ON DS AND JAVA	MCAPC250	• Develop skills in the implementation and applications of data structures. • To design and implement programs that make strong use of the classes and objects.
ELECTIVES OFFERED BY OTHER DEPARTMENTS (COMMUNICATION SKILLS IN ENGLISH)	MCAEC204	• To train the students in communication and personality skills
R PROGRAMMING	MCAFC205	• To navigate and optimize R integrated development environment studio. • To import external data into R for data processing and statistical analysis.
COMPUTER HARDWARE AND TROUBLESHOOTING	MCAFC206	• To understand the basic concepts of computer hardware, networking and apply their knowledge about computer peripherals. • To identify, rectify problems onboard.
SOFTWARE ENGINEERING	MCACC301	• Basic knowledge and understanding of the analysis and design of complex systems. • Ability to apply software engineering principles and techniques.
ADVANCED DATABASE MANAGEMENT SYSTEM	MCACC302	• Be able to develop new methods in databases based on the knowledge of the existing techniques.
DESIGN AND ANALYSIS OF ALGORITHMS	MCACC303	• To analyze the asymptomatic performance of the algorithms. • To apply important algorithmic design paradigms and method of analysis.
LAB BASED ON DBMS & DESIGN AND ANALYSIS OF ALGORITHMS	MCAPC350	• To learn how to manage a relational database management system (RDBMS). • To synthesize efficient common engineering design situations.
PARALLEL COMPUTING	MCAEC304	• To be able to apply basic algorithmic techniques and design algorithms in shared as well as distributed memory environment.
IMAGE PROCESSING	MCAEC305	• To understand the needs of image transformation. • To develop any image processing application.
DATA WAREHOUSE & DATA MINING	MCAEC306	• To design a data warehouse with dimensional modeling and apply OLAP operations. • To compare and evaluate different data mining techniques like clustering, classification, association and prediction.
PYTHON PROGRAMMING	MCAFC305	• To understand python as a useful scripting language. To learn how to identify python object types.
PHP /MY SQL	MCAFC306	• To write PHP scripts to handle HTML forms, write regular expressions including modifiers, operators, and metacharacters. • To understand the basic concepts of how a database stores information via tables and to retrieve or manipulate data from one or more

		tables.
COMPUTER NETWORKS	MCACC401	• To obtain a theoretical understanding of data communications and computer networks.
ARTIFICIAL INTELLIGENCE	MCACC402	• To apply the basic principles, models, and algorithms of AI to recognize, model and solve problems in the analysis and design of the information systems
THEORY OF COMPUTATION	MCACC403	• To analyze and design Finite Automata, Turing Machines, Push-down Automata, Formal Languages, and Grammars.
MINOR PROJECT	MCAPC450	
ELECTIVE OFFERED BY OTHER DEPARTMENTS	MCAEC404	
CURRENT TRENDS AND TECHNOLOGY	MCAFC405	• To be able to describe the changes in technology and their impacts on businesses and consumers.
INTERNET OF THINGS	MCAFC406	• To discuss the architecture, operations, and business benefits of an IoT solution.
ANDROID PROGRAMMING	MCACC501	• To install and configure android application development tools and develop user interfaces for the android program.
FUNDAMENTALS OF MICROPROCESSORS	MCACC502	• To understand instruction sets and addressing modes. • To understand microcontroller based system design for various applications.
COMPUTER GRAPHICS	MCACC503	• To explain the core concepts of computer graphics including viewing, projection, perspectives, modeling and transformations in 2D and 3D.
LAB OF COMPUTER GRAPHICS & ANDROID	MCAPC550	• To apply the concepts of color models, line clipping, polygon clipping, and circle generation. • To install and configure android application development tools and develop user interfaces for the android program.
COMPILER DESIGN	MCAEC504	• To understand the concepts of lexical analysis, parsing techniques, symbol tables, error recovery, code generation, and code optimization.
CLOUD COMPUTING	MCAEC505	• To explain the core issues of cloud computing such as security, privacy, and interoperability. • To explain, analyze and evaluate various cloud computing models.
SOFT COMPUTING	MCAEC506	• To conceptualize and parametrize various problems to be solved through basic soft computing techniques.