

## NEHRU ARTS, SCIENCE AND COMMERCE COLLEGE GHANTIKERI, HUBBALLI-580 020

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(Re-Accredited with 'A' Grade by NAAC -3rd Cycle)

## Self-Study Report Criteria II Teaching Learning and Evaluation

## <mark>2.6.1</mark>

Programme Outcomes (POs) and Course Outcomes (COs) for all Programmes offered by the institution are stated and displayed on website

Course Outcomes (Cos)

## **2.6.1 Course Outcomes**

#### **Department of English**

#### **Course Outcomes**

#### DSCC - I : Introduction to the Study of Literature

- The learner is introduced to the concept of Literature and its various uses.
- Will be able to understand various forms and terms of Literature.
- Learner can distinguish Literature and its relation to various disciplines.

#### DSCC -II : Indian Writing in English Part I

- At the end of the course, learners would be able to
- Speak, explain and critically understand IWE.
- Identify the historical trajectories of various genres of IWE.
- Critically engage with IWE from various historical and social positions.

#### **DSCC -III Introduction to Linguistics**

- Identify and understand the basic concepts of language, linguistic s and phonetics.
- 2. Comprehend and be able to use various structures and parts of a language.
- 3. Understand and put into practice various functions of language.
- 4. You will be trained to use linguistic resources.

#### **DSCC -IV Indian Writing in English Part II**

- Identify the evolution in Indian Writing in English.
- Understand, speak and write about the writers and writings of the post-independence period in India.

#### DSCC -V Discipline Specific Course (DSC) British Literature up to 1800

After completion of course (No.1), students will be able to:

- 1. Learn the important trends and movements in the British literature of the prescribed period
- 2. Identify and understand the canonical literature of England
- 3. Distinguish the poets, playwrights and novelists of different periods
- 4. Appreciate some representative texts of the prescribed period

#### DSCC-VI Discipline Specific Course (DSC) Indian Literature in English Translation

- 1. Will be able to understand the meaning and methods of translation.
- 2. Would be able to understand the scope of translation in the modern age.
- 3. Will have the knowledge of Indian writers and literature in general.
- 4. Will be able to appreciate the translated text.

## DSCC -VII Discipline Specific Course (DSC) British Literature (19<sup>th</sup> and 20<sup>th</sup> Century) (Part 2)

- 1. Learn the important trends and movements in the British literature of prescribed period
- 2. Identify and Understand canonical literature of England
- 3. Distinguish the poets, playwrights and novelists of different periods
- 4. Appreciate some representative texts of the prescribed period

## DSCC -VIII Discipline Specific Course (DSC) Gender Studies

- 1. Will be able to understand the concept of gender studies
- 2. Will be able to learn the basics of patriarchy, sex and gender and geocentricism
- 3. Will be able to understand the significance of Gender as a discourse
- 4. Will be able to appreciate literature by women writers

### **OEC (Open Elective Course) : Grammar and Study Skills**

#### **Course and Skill Outcome:**

- This paper teaches them the skills in the front desk management.
- It introduces them to business English.
- Speaking Skills.
- The learner will have knowledge of pronunciation skills, standard accent useful for
- international communication
- English Variants
- Listening ability
- This paper teaches them the skills in the front desk management.
- It introduces them to business English

## BA/BSc/B. Com/BBA/BCA - AECC (Ability Enhancement Core Course)

- This paper aims at introducing English poetry and prose to develop reading skills
- It teaching them the basics of English grammar.

#### **Department of Urdu**

#### B.A SEMESTER –I (NEP) DSCC- Paper-I- Study of Poetry (Gazal and Musaddas) Course Outcome

## Course Outcome

- Students will able to know the background of Urdu Poetry
- This course aims to acquaint the students with the two forms of Urdu poetry
- I.e. Gazal and Nazm
- It also aims at introducing them to two important forms of poetry which
- highlight human values
- It also aims to make the students familiar with poets MEER and HALI

## PROGRAMME SPECIFIC OUTCOME (PSO)

• This programme aims at introducing the students to the basic concepts of Urdu language and Urdu literature

- The programme will train the students for empowerment, Skill of Conversation etc and students will experience the Ancient and Modernity of language, understand logic behind the structure of language
- To teach them the important poets, writers their works, critical concepts, Trends and movement of URDU Literature
- To introduced them to Urdu Journalism and detail study of History of Urdu Journalism and enable the students to join media.
- To introduced the students, the importance of translation. And to develop their translation skills
- To promote Research Scholars with commitment to profession
- To impart basic knowledge of Urdu and Persian
- To promote teaching skills and techniques to produce good teachers and guides for future generation

### B.Sc. Semester-I (NEP) - AECC Prose, Poetry & Essays

#### Course Outcome

- This MIL Urdu course aims at familiarizing the students with the basics of Urdu language and literature
- It also aims at imparting the knowledge of inventions of Khadeem Bhap ka Dawr

## B. Com Semester –I (NEP) – AECC- Prose, Poetry & letter Writing

### **Course Outcome**

- This course aims at teaching the students the basic of Urdu language and Literature.
- It also aims at developing their letter writing skills.

### **B.A SEMESTER –II (NEP) -** DSCC Course - Paper-1- Study of Poetry (Urdu Shayari) <u>Course Outcome</u>

- This course aims to acquaint the students with important forms of poetry I.e. Nazm which highlights Indian culture, National integrity and human values
- It also aims to make the students familiar with poets Nazeer
- It aims to introduce the background of Urdu Poetry before Nazeer Ahmed
- It aims to introduce the background of progressive movement
- It also aims to make the students familiar with poets Faiz with poems Prescribed

## **B.A SEMESTER –II (NEP)- AECC** - Study of Poetry (Urdu Shayari)

#### Course Outcome

- This MIL Urdu course aims at teaching the students important forms of Literature which Indian society and emphasizes human values
- It also aims at introducing them to Inshaya

#### **B.Sc Semester-II (NEP)** – AECC- Prose, Poetry & Essays <u>Course Outcome</u>

- This course aims at teaching the students different forms of prose and poetry which highlights problems of our society Indian freedom struggle and human values
- 2. It also aims at giving them the knowledge of inventions of Bijli ki raftar etc.

B. Com Semester –II (NEP)- AECC- Prose, Poetry & Essay Translation

#### **Course Outcome**

- This course aims at teaching the students to different forms and poetry which depics the contemporary society and highlight human values
- It also aims at developing their translation skills.

## **Department of Kannada**

After completion of course -1, students will be able to:

- CO 1 : Introducing spoken variety of Kannada
- CO 2 : Introducing different parts of speech of Kannada
- CO 3 : Exposing different language contexts of Kannada.
- CO 4 : Introducing simple verb forms of Kannada.
- CO 5 : The Course enhances the speaking ability of the learner.

## BA 1st sem- DSCC P-1

#### **Course Outcome:**

- The stages of development of Kannada language will be introduced
- Increases awareness of cultural diversity
- The historical clarity of the Kannada language will arise
- The discipline of studying the history of Kannada language in a language history
- School will be introduced to ancient poetry of Kannada language
- Introduction to statutes and awareness of their diversiy
- School will be introduced to ancient Kannada literary forms

#### BA 1st DSCC 2

#### **Course Outcome:**

- Knowledge of the social concerns of literature
- Which leads to an understanding of change. Involvement in the process is also necessary and necessary
- Medieval Kannada literary forms such as vachana, ragale shattadi etc. are introduced
- There will be clarity of socialistic/people oriented literature.
- An awareness of the way feminist ideas are expressed in literature.

#### BA 1st AECC

#### **Course Outcomes:**

- Expanding understanding of Kannada language and culture
- Cultivating a critical, research-oriented perspective.
- Developing creative expression skills
- Training in technical skills, life skills and entrepreneurship in Kannada

#### OEC-1st Sem

#### **Course Outcomes:**

- A clear picture of Kannada language and language families is obtained.
- A brief introduction to Indian languages is given along with the importance of languages.

• Able to prepare for competitive exams.

#### SEC - 1st Sem

At the end of the course students will have the following life skills.

- To inculcate human values along with the richness of language and literature.
- Developing language skills
- Read, understand and practice Halagannada and Hosagannada literature.
- To read, write and speak Kannada fluently. Having the ability to teach.
- Empowerment in punctuality, honesty, dedication in work.

## BSc 1st Sem

### **Course Outcomes:**

- Practice reading, understanding and writing of literature.
- 2 To increase awareness of Nadu-Nudi
- Awareness of contemporary phenomena
- Awareness of social responsibility
- Building a strong intellectual personality
- Developing language skills

## BCom 1st sem

#### **Course Outcomes:**

- Expanding understanding of Kannada language and culture
- Cultivating a critical, research-oriented perspective.
- Developing creative expression skills
- Training in technical skills, life skills and entrepreneurship in

## **Department of Hindi**

#### **Course Outcomes: (NEP)**

## BA 1st Sem -DSCC - 1 -Study Of Hindi Fiction

Grammar education is an essential part of language education. This is the charioteer of the chariot of language. It creates the form of language and controls it. It is also a friend of language. This provides him inspiration to follow the true path.

- To give knowledge of various sounds to the students.
- To develop composition and creative attitude in students through grammar.
- To teach students to use correct language.
- To develop such ability in the students so that they can express their feelings clearly in minimum words. At the same time, to develop such ability in them that they can understand the impurity of the language and can develop in them the power to judge the language.
- To inspire students to speak, write and read correctly.
- To develop such ability in the students so that they can understand the impurity of the language and develop the power to judge the language.
- To provide students with knowledge of rules related to language.
- To impart correct pronunciation to the students.
- The aim of grammar education should be to make the child proficient in looking at language from a scientific point of view.

### BA 1<sup>st</sup> Sem- DSCC -II – Hindi Grammar

- To develop interest towards literature.
- To develop the ability to absorb the thoughts, ideas and moral values contained in the story.
- To develop creative power.
- To enrich the stock of words, proverbs, idioms etc.
- To develop the ability to guess.
- To develop concentration.
- To develop story creativity.
- To develop imagination and memory power.

#### BA 1st Sem-AECC – Short story and Grammar

After completion of course-1, students will be able to:

- Linguistic ability will be built.
- Awareness will be created towards linguistic correctness.
- Interest will be generated in reading the story.
- Ability to write stories will develop
- Develop imagination and memory

#### B.Com -1st Sem- Pros and Commercial Essay

After completion of course-1, students will be able to:

- Will be familiar with different genres of Hindi prose.
- Study of prose will generate interest in creative writing.
- By studying Hindi grammar, you will understand the pure form of Hindi language.
- Language skills will develop.
- Can get correct information.

#### Bsc 1st Sem-Short story and Grammar

After completion of course-1, students will be able to:

- An attempt is made to acquire the ability to compose essays based on the elements of prose.
- The habit of reading develops in students.
- Can acquire speaking skills, writing skills and oratory skills.
- You can get correct information related to grammar.

#### OEC 1st Sem- Introduction of Hindi Language and Literature

After completion of course, students will be able to:

- Students develop inherent speaking skills.
- Attains proficiency in the art of writing.
- Representation of personality is the basis of conversational art, development takes place in that art.
- Awareness is created among students about environmental pollution.
- A sense of dedication develops for the protection of water and forests.
- Students can acquire the ability to compose poetry themselves by reading poetry.

#### SEC 1st Sem- Skill Of Translation

- Theoretical understanding of translation will develop. Understanding of areas of translation will develop.
- Ability to analyze the translation world will be built
- Practical knowledge of translation will increase.
- Understand the usefulness of translation
- Will be proficient in translating different areas of knowledge.

# **B.A III & IV SEM DSCC P-1: History of Hindi literature (early period and devotional period)**

- 1. Analytical knowledge of the history of Hindi literature.
- 2. To acquire specific knowledge of history writing, major historical texts and different eras.
- 3. The understanding of contemporary writing and literary history will be distorted.
- 4. The understanding of analytical study of different eras of Hindi literature will be developed.
- 5. There will be information about the ancient and medieval conditions of Hindi Mahinya.
- 6. You will get knowledge about the personality, work and contribution of poets of every period.
- 7. Analytical knowledge of the history of Hindi literature.
- 8. To acquire specific knowledge of history writing, major historical texts and different eras.
- 9. Understanding of history writing and literary history will develop. > Understanding of analytical study of different eras of Hindi literature will develop.
- 10. There will be information about the traditional period of Hindi literature and the circumstances of the modern period.
- 11. You will get knowledge about the personality, work and contribution of poets of every period.

# B.A III & IV SEM DSCC P-2: DRAMA AND ONE ACT PLAY (III SEM) LITERARY ESSAYS (IV SEM)

Drama is an important type of literature among other type of literature. Through which not only literary aptitude is developed, but this one genre also connects with other genres like poetry and the imaginary world of stories. On the one hand, the plot of the play is adept in the art of weaving a story.

- 1. Development of oral reading and writing skills
- 2. Sublimation of emotions and their help in personality building
- 3. To provide right direction and vision to intellectual richness and emotional expression. To acquire knowledge from other genres of literature by connecting with drama actors.
- 4. To provide a new aesthetic experience towards the living world and literature.
- 5. Imparting global values by extending moral values
- 6. To develop logically towards philosophy of life
- 7. You will get information about the contribution of essay literature
- 8. Understanding of different styles of essay will develop

- 9. Facility will be available for analytical study of essays
- 10. You will get information about types of essay
- 11. You will get an opportunity to study difficult genre and serious genre in prose literature.

# B.A III & IV SEM AECC : ESSAYS AND TRANSLATION (III SEM) KHANDKAVYA (IV SEM)

- 1. Will be familiar with various types of Hindi.
- 2. Essay is a difficult prose types.
- 3. The ability to create essays will develop in the students.
- 4. Will be able to translate.
- 5. You can get your employment through translation.
- 6. To generate interest among students towards poetic art and linguistic beauty.
- 7. To understand the difference between epic and Khandakavya.
- 8. To understand the poetic specialties.
- 9. To be familiar with official correspondence.

# OEC III & IV SEM: TRANSLATION SKILL (III SEM) MASS COMUNICATION (IV SEM)

- 1. Translation skills develop in students.
- 2. We can get rid of the problem of unemployment through translation art. Can know the basic purpose underlying the literature of different languages.
- 3. We can understand the importance of science and technology in the modern context.
- 4. You can develop your personality by reading the biographies or autobiographies of prominent scientists.
- 5. Students will be familiar with various social media.
- 6. Creative qualities will develop in students.
- 7. There will be facility for government or non-government jobs.
- 8. By building one's own character, we will be able to take the society forward for development.

#### BSC III & IV AECC: PLAY (III SEM) NOVEL (IV SEM)

Drama is an important type of literature among other type of literature. Through which not only literary aptitude is developed, but this one genre also connects with other genres like poetry and the imaginary world of stories. On the one hand, the plot of the play is adept in the art of weaving a story.

- 1. Development of oral reading and writing power.
- 2. Sublimation of emotions and their help in personality building.
- 3. To provide the right direction and vision to intellectual richness and emotional expression
- 4. To acquire knowledge from other genres of literature by connecting with the actors of the drama.

- 5. To provide a new aesthetic feeling towards the living world and literature. To provide global values by expanding moral values.
- 6. To develop logic towards philosophy of life.
- 7. To arouse interest in literature among students.
- 8. To develop creative power
- 9. To create awareness about words, proverbs, idioms, and proverbs etc.
- 10. To develop the ability to guess.
- 11. To expand concentration.
- 12. To develop the creativity of novels.
- 13. To develop imagination and memory power.

## B.COM III & IV SEM AECC: SHORT STORIES (III SEM) ONE ACT PLAY (IV SEM)

- 1. To develop interest towards literature.
- 2. To develop the ability to understand the feelings, thoughts and moral values inherent in the story.
- 3. To develop creative power.
- 4. To develop the ability to guess.
- 5. To develop concentration.
- 6. To develop imagination and memory.

Drama is an important type of literature among other type of literature. Through which not only literary aptitude is developed, but this one genre also connects with other genres like poetry and the imaginary world of stories. On the one hand, the plot of the play is adept in the art of weaving a story.

- 1. Development of oral reading and writing skills
- 2. Sublimation of emotions and their help in personality building
- 3. To provide right direction and vision to prudence, integrity and emotional expression
- 4. To acquire knowledge from other genres of literature by connecting with drama actors.
- 5. To provide a new aesthetic experience towards the living world and literature.
- 6. Imparting global values by extending moral values
- 7. To develop logic towards philosophy of life

## **Department of History**

## **B.A. I Sem- DSCC-A1: HISTORY OF INDIA PRE - HISTORIC AGE TO KUSHANAS** Course Outcome:

After completion of course students will:

- be able to define changes in the realm of polity and culture, puranic religion, the growth of vernacular languages and newer forms of art and architecture.
- learn and analyse the transition from historic centuries and development of polity and institutions in ancient past.
- be able to delineate changes in the realm of polity and culture, puranic religions.
- understand the growth of vernacular languages and newer forms of art and architecture.

## DSCC-A2 HISTORY OF KARNATAKA (From Early times to the Rashtrakutas)

### **Course Outcome:**

After completion of course, students will:

- learn the regional history and culture.
- be able to understand the history of early dynasties of Karnataka and their administration and, Socio-Economic contribution.
- identify the cultural contributions of major dynasties.

### **OEC-1: INTRODUCTION TO INDIAN HISTORY (From Earliest times to 1500 AD)** Course Outcome:

After completion of course, students:

- shall have the basics of Indian history and culture.
- will come to know the imperial history and development of Ancient Indian culture.
- will come to know science and technological growth of Ancient India, adventurous invasions and cultural fusion in ancient India.

## B.A. II Sem- DSCC-B3: HISTORY OF INDIA- FROM SATAVAHANAS TO 1206 A.D. Course Outcome

After completion of course, students:

- will gain knowledge about the rule of Gupta dynasty and Vardhana empires and the consolidation of various dynasties in Deccan.
- will gain familiarity with the dynasties of South India and the rise of early Religion, Philosophy and Sects.
- will come to know the development of science, technology, literature art and architecture of our ancient past.

#### DSCC-B4: HISTORY OF KARNATAKA (From Hoysala to Adilshahis of Bijapur) Course Outcome

After completion of course, students:

- will be able to understand History and cultural heritage of Karnataka over the period of time.
- shall gain ability to comprehend changes in kingship, administration and ideology
- will be acquainted with the Religious, literary and Cultural developments in Karnataka.

#### OEC-2: Introduction to Indian History (From 1500 AD to 1947 A.D) Course Outcome

After completion of course, students:

- shall have the knowledge of medieval and modern history of India.
- will be acquainted with a brief history of Medieval period and Medieval Culture.
- will gain knowledge about struggle for supremacy among the various European powers and Modern history with the saga of National Movement -different ideologies and movements.

## DSCC-5: HISTORY OF INDIA -1206 - 1526 A.D.

#### **Course Outcome:**

After completion of course students will be able to :

1: Identify the major political developments in the history of India during the period between the twelfth and the sixteenth century.

2: Outline the changes and continuities in the field of culture, especially with regard to art, architecture, Bhakti and Sufi movements.

3: Delineate the development of trade and urban complexes during this period.

4: Understand an administration and reforms of Delhi Sultanates, and their Socio-Economic and Cultural Contributions.

5: Understand the Administration, Trade and Commerce and Cultural Contributions of Vijayanagar empire.

6: Understand an administration and cultural contributions of Bahamani, Adilshahis and Barid Shahi dynasties and also the life and social philosophy of Bhakti and Sufi Saints.

## **DSCC-6** History of Bombay Karnataka

### **Course Outcome:**

After completion of course, students will:

1: Understand the history and culture of Bombay Karnataka.

2: Analyse the important causes for the backwardness of this region.

3: Understand the political influence on the people and culture of this region.

4: Understand the political, Social, Religious and Cultural history of the region.

5: Appreciate the divergent cultural and communal harmony of this region

## OEC-3: Freedom Movement in Karnataka (1800-1947)

#### **Course Outcome:**

After completion of course, students will be able to:

1: Understand the main events of the Freedom Movement in Karnataka

2: Understand an anti-British resistances and uprisings in Karnataka.

3: Understand the influence of National leaders on Freedom Movement in Karnataka.

4: Understand the mass approach towards the Freedom Movement in Karnataka

## **B.A. IV SEMISTER**

## DSCC-7: History of India (1520 – 1707 AD (Part-2).

#### **Course Outcome**

After completion of course, students:

1 : Will be able to identify the major political developments in the History of India during the period between the sixteen and the seventeenth century.

2 : Will be able to identify the changes and continuities in the field of culture, especially with regard to art, architecture, Bhakti and Sufi movements

3 : Will delineate the development of Art and Architecture, Industries, trade and urban complexes during this period.

## DSCC-8: Cultural History of India (From Saraswati - Indus Culture to 1206 CE)

#### **Course Outcome**

After completion of course, students:

- 1: Will be able to understand History and cultural heritage of Karnataka over the period of time.
- 2 : Shall gain ability to comprehend changes in kingship, administration and ideology
- 3: Will be acquainted with the Religious, literary and Cultural developments in Karnataka.

#### **OEC-4:** Title of the Course: Freedom Movement in India (1885-1947)

### **Course Outcome**

After completion of course, students will be able to:

1 : Understand the genesis of India Nationalism

2 : Understand objectives and techniques of Extremists leaders.

3: Understand the importance of Home Rule Movement and role of revolutionary Nationalists.

4: Understand the Political and Constitutional developments as well as mass movements of Gandhian Era.

## **Department of Political Science**

#### **Programme Specific Outcomes (PSO):**

On completion of the 03/04 years Degree in POLITICAL SCIENCE students will be able to:

- Acquire domain knowledge.
- Study and analyze political contexts from critical and constructive prospective.
- Have a better understanding of the working of various political institutions including decentralized institutions state legislatures and parliament and relate this functioning to the greater cause of nation building as a responsible citizen.
- Assess how global national and regional development affect polity and society.
- To gain critical thinking and develop the ability to make logical inferences about socioeconomic and political issues, on the basis of comparative and contemporary political discourses in India.
- Contemplate about national and international issues involving States having different political ideologies and historical contexts.
- Pursue higher education such as Post Graduate Studies and Research in Political Science and in other interdisciplinary areas to provide qualitative insights to create a better world.

## Course No.1 (Paper-I): Title of the Course (Paper-I) : BASIC CONCEPTS IN POLITICAL SCIENCE

## Course Outcome :

- After completion of course (No.1), students will be able to:
- Understand Political Science, theoretically and will gain knowledge to explain and analyze politics at large.
- Understand the dynamics of politics.
- Understand to inculcate the democratic spirit.

## Course No.2 (Paper-II): Title of the Course (Paper-II) : POLITICAL THEORY Course Outcome (CO):

After completion of course (No.2), students will be able to:

- CO 1: Understand he nature and relevance of Political Theory.
- CO 2: Understand he different concepts like Liberty, Equality, Justice and Rights.
- CO 3 : Reflect upon some of the important debates in Political Theory.

## **OEC-1:** Title of the Course : HUMAN RIGHTS

## **Course Outcome (CO):**

After completion of course, students will be able to:

- CO 1. Explain the basic concept of Human Rights and its various formulations.
- CO 2.Have necessary knowledge and skills for analyzing, interpreting, and applying the
- Human Rights standards and sensitize them to the issues.
- CO 3. Develop ability to critically analyse Human Rights situations around them

# SKILL ENHANCEMENT COURSE (SEC)-I Title of Paper: Development of Administrative Skills

## Course Outcome (CO):

### After completion of Skill Enhancement course, students will be able to: Course objectives:

- CO.1. The main objective of this course is to develop tomorrow's administrators by imparting basic knowledge about Administrative Skills, Communication ability decision making behavior and leadership qualities.
- CO.2. This paper also helps the students not only to provide employment opportunities but also it creates a sense of how to become successful administrators.

## WESTERN POLITICAL THOUGHT Discipline Specific Course (DSC)

Course Outcome (CO): After completion of course (No.3), students will be able to:

- CO 1. Get an introduction to the Schools of Political Thought and Theory making in the West.
- CO 2. And introduce the richness and variations in the political perceptions of Western Thinkers.
- CO 3. And familiarize themselves to the Thought and Theory of Western Philosophy.

# INDIAN NATIONAL MOVEMENT AND CONSTITUTIONAL DEVELOPMENT DSC-4

**Course Outcome (CO):** 

After completion of course (No.4), students will be able to:

- CO 1. Understand how the colonial rule was overthrown by the Indian nationalists.
- CO.2 Appreciate the ideals and values of Gandhi that resulted in freedom.
- CO.3 Examine the problem of Independent India and the role played by great leaders in solving them

#### **OEC-2:**

### Title of the Course : INDIAN POLITY AND CONCERNS Course Outcome (CO):

After completion of course, students will be able to:

- Co.1Understand the reasons behind the causes of these issues and also the constitutional provisions that existed.
- CO.2 Familiarize with the debates that emerged.
- CO.3 Be able to suggest the measures to control such issues.

#### **Department of Economics**

#### **Outcomes of B.A Economics Program-2020-21**

Economics is a popular and much sought-after course owing to its policy relevance and application to business as well as real life situations.

The main focus would be on conceptual clarity and practical usage of the knowledge gained. To make the students to 'think like an economist' is the main motto of the curriculum.

They will also be exposed to quantitative approaches and tools to understand the economic relationships and also to analyse the data for framing as well as evaluating socio-economic policies. With varied electives and approaches to study socio-economic problems and policies, the graduates will be prepared to review and evaluate policies.

The whole process aims at making them more inquisitive about the economic phenomena. After graduation, the students can apply their knowledge, skills and competencies across a broad range of occupations.

They enjoy a rewarding career in academic, business, corporate, science, health care, government, or any field that uses the information to answer critical questions and inform decision-making.

#### **Program Outcomes**

- Students will be able to understand economic vocabulary, methodologies, tools and analysis procedures.
- Students will be familiar with the knowledge and application of micro economics for the formulation of policies and planning.
- Students will learn to apply economic theories and concepts to contemporary social issues, as well as analysis of policies.
- Students will be able to understand the impact of government policies and will be able to assess the consequences of the policies on the parties involved.
- As the programme along with economics contains like statistics, mathematics, it enhances them to compute and assess the real situation of the economy including the size and changes of population, income pattern, and rate of development with pattern of savings and investments and social security measures adopted in the country.

#### **NEP B.A Economics Courses Outcomes**

- Economics is a popular and much sought-after course owing to its policy relevance and application to business as well as real life situations.
- The main focus would be on conceptual clarity and practical usage of the knowledge gained. To make the students to 'think like an economist' is the main motto of the curriculum.

#### SEMESTER – I

#### Course Title: DSCC 1.1: Basic Economics-I (C1)

- Identify the facets of an economic problem
- Learn basic economic concepts and terms
- Explain the operation of a market system
- Analyze the production and cost relationships of a business firm
- Evaluate the pricing decisions under different market structures
- Use basic cost-benefit calculations as a means of decision making (thinking like an economist)

#### Course Title: DSCC 1.2: Indian Economy – I (C2)

- Understand the current problems of Indian Economy
- Identify the factors contributing to the recent growth of the Indian economy
- Understand the structural changes taking place in Indian Economy
- Analyze the sector specific policies adopted for achieving the aspirational goals
- Review various economic policies adopted

### Course Title: OEC 1.1: Contemporary Indian Economy (OEC)

- Trace the evolution of Indian Economy
- Identify the structural features and constraints of the Indian economy
- Analyze the sector specific problems and contributions towards overall economic growth
- Review various economic policies adopted.

## Course Title: 1.1. Data Analysis & Computer Application in Economics (SEC)

- This course will enlighten the students about elementary computer skills required to represent economic data through computers
- The students would be able to demonstrate basic computer knowledge and word processor to prepare write-up for economic reports
- The students would be able to use spreadsheets in an elementary way to garner basic understanding of the available spreadsheet software.
- The students would demonstrate the use of presentation software so as to present the economic analysis and reports in an effective way

#### SEMESTER – II

#### Course Title: DSCC 2.1: Basic Economics II (C3)

- Understand the operation of the overall economic system;
- Calculate national income and related aggregates
- Explain the relationship between macroeconomic aggregates
- Analyse the nature of business cycles & policies towards controlling them
- Evaluate the macroeconomic policies for solving major problems like poverty and Unemployment

#### Course Title: DSCC 2.2: Indian Economy –II (C4)

- Understand the nature of economic reforms.
- Understand and relate the changes in Indian Economy between pre-reform and post-reform
- Understand the nature of aid extended by IMF & effect on Indian Economy
- Understand the Sectoral reforms in Indian Economy
- To comprehend and analyse the schemes launched by the Government to effect various changes on Indian Economy.

#### Course Title: OEC 2.1: Basic Economics – I

- Identify the facets of an economic problem
- Learn basic economic concepts and terms
- Explain the operation of a market system
- Analyze the production and cost relationships of a business firm
- Evaluate the pricing decisions under different market structures

Use basic cost-benefit calculations as a means of decision making (thinking like an economist)

#### **Outcomes of B.A Economics Program**

Economics is a popular and much sought-after course owing to its policy relevance and application to business as well as real life situations.

The main focus would be on conceptual clarity and practical usage of the knowledge gained. To make the students to 'think like an economist' is the main motto of the curriculum.

They will also be exposed to quantitative approaches and tools to understand the economic relationships and also to analyse the data for framing as well as evaluating socio-economic policies. With varied electives and approaches to study socio-economic problems and policies, the graduates will be prepared to review and evaluate policies.

The whole process aims at making them more inquisitive about the economic phenomena. After graduation, the students can apply their knowledge, skills and competencies across a broad range of occupations.

They enjoy a rewarding career in academic, business, corporate, science, health care, government, or any field that uses the information to answer critical questions and inform decision-making

#### On completion of the 03/04 years Degree in Economics students will be able to:

PSO 1 :Understand economic vocabulary, methodologies, tools and analysis procedures.

PSO 2 : Understand and apply micro economics for the formulation of policies and planning.

PSO 3 :Apply economic theories and concepts to contemporary social issues, as well as analyze the policies.

PSO 4 : Understand the impact of government policies and assess the consequences of the policies on the parties involved.

PSO 5 : Compute and assess the real situation of the economy.

PSO 6 : Understand the basics of Quantitative techniques and their applications

PSO 7 : Critically evaluate the ongoing economic developments in India and abroad PSO 8 : Understand research methods in economics

PSO 9 :Get trained in the art of economic modeling

#### <u>Semester 3<sup>rd</sup></u> (Paper-I): Intermediate Micro Economics (Code: 013ECO011)

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1: Understand introductory economic concepts.

CO2: Know the ordinal measurement of utility and be able to understand decision making process of consumer

CO3: Understand and explain the production function graphically and analytically

CO4: Be able to understand a cost equation and estimate it

CO5: Explain how equilibrium is achieved in the various market models.

CO6: Recognize the basic concepts of factor incomes

### (Paper-II): Quantitative Methods for Economics-I (Code: 013ECO012)

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1: Perform basic operations in Sets and functions and Matrix algebra.

CO2: Calculate limits, derivatives of Economic functions and identify the nature of relationship.

CO3: Calculate maxima and minima of function

#### **Open Elective Course (OEC 3) : Macro Economics (Code 003E0051)**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1: understand and explain the estimation of national income

CO2: comprehend the idea of value of money and its measurement

CO3: appreciate the classical and Keynesian way of national income determination

CO 4: understand and explain the concepts of multiplier and accelerator

CO 5: explain the working of business cycles

#### Semester 4<sup>th</sup>

#### (Paper-I): Intermediate Macro Economics (Code: 014ECO011)

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1: Comprehend and explain the classical theory of employment

CO2: Understand the Theories of Determination of National Income

CO3: Explain the working of multiplier and accelerator in national income determination

CO 4: Understand and explain the tradeoff between inflation and unemployment

CO 5: Workout numerical problems regarding consumption function, investment function and value of money

#### (Paper-II): Quantitative methods for Economics –II (Code: 014ECO012)

Course Outcomes (COs): After the successful completion of the course, the student will be able to

CO1:Understand the nature of Data and their presentation

CO2 :Calculate Descriptive statistics like measures of central tendency and dispersion

CO3 : Apply statistical techniques like correlation and regression in Economic analysis

## **Open Elective Course (OEC 4) : Indian Economic Development and Policy (Code:** 004ECO051)

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1: understand and explain the sectoral composition in Indian economy

CO2: comprehend the agriculture system in Indian and identify the problems and measures to overcome

CO 3: appreciate the industrial structure, major policies, problems and financing relating to industrial development in India

CO 4: understand and explain the banking landscape of India and analyse the monetary policy of RBI

CO 5: explain the fiscal tools and analyse the Union Budget

#### **Department of Sociology**

#### **DSC 1: Understanding Sociology**

After completion of course students will be able to:

1) understand the nature and role of sociology in changing world.

2) Comprehend the uniqueness of Sociological imagination in the study of real world.

3) Recognize different perspectives of perceiving the working of Social Groups.

4) Differentiate between Sociology's two purposes Science and Social Reform.

5) Express one understands of current Social Issues in oral and written form.

#### **DSC 2: Changing Social Institutions**

Identify the new forms taken by the Institutions of Family and Marriage.

2) Understand the role played by Religion in modern world.

3) Sensitize the students to the conflicting norms of secularism and living with one's religious beliefs.

4) Appreciate the role of Education and challenges in making education accessible to all.

5) Recognize the social nature of Economy and work.

6) Grasp the opportunities offered by Democracy and the threats it faces.

7) Undertake micro research work and communicate effectively.

#### **OEC 1: Sociology of Mass Media**

1) Learners will be familiar with key concepts of Mass Media & its types.

2) Learners will be able to develop analytical capacity about the interrelationship between Society, Media and Abuse of Media.

3) The course seeks to improve the employability of the students who are willing to make career as Journalist, Reporters, Editors and Freelance Writer.

#### **DSC 3: Foundations of Sociological Theory**

1) Contextualize the social and intellectual background of classical Sociologists.

2) Appreciate the contemporary classical Sociological thought.

3) Appreciate the need for thinking in theoretical terms and concepts.

4) Demonstrate Basic Understanding of Theory and Research

## DSC 4: Sociology of Rural Life in India

- 1. Understand the myths and realities of Village India constructed by Western scholars.
- 2) Understand the changes in Land tenure systems and consequences.

3) Appreciate the role of traditional social Institutions and how they have responded to forces of change.

4) Make an informed analysis of various development programmes and challenges encountered.

## **OEC 2:** Society, Health and Social Care

Learners will be able to work for/in Hospitals/Crèches/Old age homes/State homes/NGO for women.

2) This course helps the learners gain knowledge about basic Concepts of health care and social well being.

3) Learners will be able to identify the main stakeholders of health care and guide them properly.

4) Learners will develop knowledge to understand the significance of both formal and informal social care.

5) It equips the learners in taking care of aged, sick and children in family.

6) Learners will be equipped with the counselling skills in health care and social care

### **DSC 5: Social Stratification and Mobility**

After the completion of the course, students should be able to:

1) understand the nature and role of in society.

2) Recognise different types of Stratification and Mobility.

3) Describe different types of statuses, roles and Changes in stratification.

4) Critically understand and analyse different Theories of social stratification.

## DSC 6: Sociology of Urban Life in India

1) Define the basic concepts of Urban Sociology.

2) Identify and describe the different types of City.

3) Analytically understand theoretical issues related to urban society.

4) Critically evaluate urban policies.

## **OEC 3: Sociology of Tourism and Management**

1) Explain the relationship between tourism; culture and cultural heritage

2) Explain the social, cultural and economic impacts of tourism on local communities.

3) Understand the relation between tourism and consumption.

4) Understand the principles of tourism management.

## **DSC 7: Sociology of Marginalised Groups**

1) Obtain knowledge of marginalisation and marginalised groups in India.

2) Understand the impact of powerlessness in social life.

3) Ability to participate and critically view efforts undertaken to address inequalities.

## **DSC 8: Population and Society**

1) Define the basic concepts of population studies.

- 2) Understand the dynamics of population from sociological perspectives.
- 3) Understand problems around India's population.

4) Critically analyse population policies of India.

## **OEC 4: Sociology of Food Culture**

1) Appreciate the complex relations between food, individual and society.

2) Understand the evolution of food production and consumption from household to industry.

3) Critically understand the relationship between food and risk society

### **Department of Mathematics**

#### Name of Course (Subject): Mathematics Programme Specific Outcome (PSO):

- On completion of the 03/04 years Degree in Mathematics students will be able to:
- PSO 1 : Culminate in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of mathematics and also in other allied subjects.
- PSO 2 : To communicate various mathematical concepts effectively using examples and their geometrical visualization which can be used for modelling and solving of real life problems.
- PSO 3 : Acquire ability of critical thinking and logical reasoning and capability of recognizing and distinguishing the various aspects of real life problems.
- PSO 4 : Develop an ability to analyse the problems, identify and define appropriate computing requirements for its solutions.
- PSO 5 : Develop the capability of inquiring about appropriate questions relating to the Mathematical concepts in different areas of Mathematics.
- PSO 6 : Use appropriate software to solve system of algebraic equation and differential equations.
- PSO 7 : Develop an ability of working independently and to make an in-depth study of various notions of Mathematics.
- PSO 8 : Develop an ability to identify unethical behaviour such as fabrication, falsification or misinterpretation of data and adopting objectives, unbiased and truthful actions in all aspects of life in general and Mathematical studies in particular.
- PSO 9 : Think independently and develop algorithms and computational skills for solving real word problems.
- PSO 10 : Peruse advanced studies and research in Mathematical sciences.

## Course Outcome (CO):

After completion of course (Theory), students will be able to:

- CO 1: Learn to solve the system of homogeneous and non homogeneous linear equations in variables by using concept of rank of matrix, finding eigenvalues and eigenvectors.
- CO 2: Sketch curves in Cartesian, polar and pedal equations.

- CO 3: Learn geometrical representation and problem solving on MVT and Rolls theorems.
- CO 4: Get familiar with the techniques of integration and differentiation of function with real
- variables.
- CO 5: Identify and apply the intermediate value theorems and L'Hospital rule and Trace the
- curves.

Cour	Course No.1 (Theory): Title of the Course (Theory): Algebra - I and Calculus - I		
After completion of course (Theory), students will be able to			
CO	Learn to solve the system of homogeneous and non homogeneous linear equations in		
1	m variables by using concept of rank of matrix, finding eigen values and eigenvectors.		
CO	Sketch curves in Cartesian, polar and pedal equations.		
2			
CO	Learn geometrical representation and problem solving on MVT and Rolls theorems.		
3			
CO	Get familiar with the techniques of integration and differentiation of function with real		
4	variables.		
CO	Identify and apply the intermediate value theorems and L'Hospital rule and Trace the		
5	curves.		
Cour	se No.1 (Practical): Title of the Course (Practical):Practicals on Algebra - I		
andC	alculus – I		
After	completion of course (Practical), students will be able to		
CO	Learn Free and Open Source Software (FOSS) tools for computer programming		
1			
CO	Solve problem on algebra and calculus using FOSS softwares		
2			
CO	Acquire knowledge of applications of algebra and calculus through FOSS.		
3			
OEC	-1: Title of the Course: Business Mathematics-I		
After completion of course, students will be able to			
CO	Apply sets, relations, functions in business.		
1			
CO	Use permutations and combinations.		
2			
CO	Use matrices in commercial field. Apply trigonometric function in real world.		
3			
CO	Apply trigonometric function in real world.		
4			
	B.Sc. Semester - I Subject: Mathematics		
SKIL	L ENHANCEMENT COURSE (SEC)-I		
After	completion of Skill Enhancement course, students will be able to		
CO	Understand the Scilab and apply commands in Scilab		
1			
CO	Use looping in Scilab		
2			
CO	Build Scilab functions		
3			

CO	Plot graphs CO 5: Develop skills to write programme in Scilab		
4			
Course No.2 (Theory): Title of the Course (Theory): Algebra - II and Calculus - II			
After	completion of course (Theory), students will be able to		
CO 1	Recognize the countable set and groups.		
CO 2	Link the fundamental concepts of groups and symmetries of geometrical objects		
CO 3	Explain the significance of the notions of Cosets, normal subgroups and factor groups.		
CO 4	Finding the extreme values of functions.		
CO 5	Evaluate multiple integration.		
Course No.2 (Practical): Title of the Course (Practical): Practicals on Algebra -II and Calculus - II			
After	completion of course (Practical), students will be able to		
CO 1	Learn Free and Open Source Software (FOSS) tools for computer programming		
CO 2	Solve problem on algebra and calculus using FOSS softwares.		
CO 3	Acquire knowledge of applications of algebra and calculus through FOSS.		
OEC-	2: Title of the Course: Business Mathematics-II Course Outcome (CO)		
After	completion of course, students will be able to:		
CO 1	Integrate concept in business concept with functioning of global trade.		
CO 2	Understand the commercial arithmetic.		
CO 3	Apply decision-support tools to business decision making.		
CO 4	Apply knowledge of business concepts and functions in an integrated manner.		
BSc S	emester III, Course No: 5 Title of the Course (Theory)		
DSCO	C-5 :Ordinary Differential Equations and Real Analysis–I		
After	completion of the course(Theory), students will be able to:		
CO1	Solve first-ordernon-lineardifferentialequationsandlineardifferentialequations.		
CO2	To model problems in nature using Ordinary Differential Equations.		
CO3	Formulate differential equations for various mathematical models		
CO 4	Apply these techniques to solve and analyze various mathematical models.		
CO	Understand the fundamental properties of the real numbers that lead to define		
5	sequence and series in the formal development of real analysis.		
CO 6	Learn the concept of Convergence and Divergence of a sequence.		
CO	Able to handle and understand limits and their use in sequences, series,		
7	differentiation, and integration.		
CO	Apply the ratio, root, alternating series, and limit comparison tests for convergence		
8	and absolute convergence of an infinite series.		

B.Sc.Semester–III		
Title of the Course(Practical):DSCC-6: Practicals on Ordinary Differential Equations		
and Real Analysis-I		
	This course will enable the students to gain hands-on experience of	
CO 1	Free and Open Source software (FOSS)tools or computer programming.	
CO 2	Solving exact differential equations	
CO 3	Plotting orthogonal trajectories	
CO	Finding complementary functions and particular integral of linear and homogeneous differential equations	
CO 5	Acquireknowledgeofapplicationsofrealanalysisanddifferentialequations.	
CO	Verification of convergence/divergence of different types of series	
Title of the Course:Quantitative Mathematics		
CO1	Completion of the course, students will be able to:	
C01	Understand the concept of linear quadratic and simultaneous equations and their	
02	applications inreal-life problems.	
CO3	Understand and solve the problems based on Age.	
CO4	Solve Speed and Distance related problems	
Cour	se No.: 7 DSCC-7:Partial Differential Equations and Integral Transforms	
After	completion of the course(Theory), students will be able to.	
CO1	Solve the Partial Differential Equations of the first order and second order	
CO2	Formulate, classify and transform partial differential equations into canonical form.	
CO3	Solve linear and non-linear partial differential equations using various methods; and	
<u> </u>	apply these methods to solving some physical problems.	
<u>CO4</u>	Able to take more courses on wave equation, heat equation, and Laplace equation	
<u>CO5</u>	Solve PDE by Laplace Transforms and Fourier Transforms.	
Course No: 8 Title of the Course(Practical) DSCC-8:Practicals on Partial Differential Equations and Integral Transforms		
After	completion of the course(Practical).students will be able to:	
CO1	Learn Free and Open Source software(FOSS) tools or computer programming.	
CO2	Solve problems on Partial Differential Equations and Integral Forms.	
CO3	To find Laplace transform of various functions.	
CO 4	To find the Fourier Transform of periodic functions	
CO 5	To solve partial differential equations by using Integral transforms.	
OEC-4(for otherstudents): 004MAT051. Title of the Course. Mathematical Finance		
CO1	Understand how to compute profit and loss, discount and Banker's discount.::	
CO2	Understand the concept of Linear equations and inequalities and their use in the Solving the Linear Programming Problems	
$CO^{2}$	Formulation of Transportation Problem and its application in the routing problem	
CUS	Integrate the concept in husiness concept with the functioning of global trade	
CO4	Understand commercial arithmetic	
C04	Apply decision-support to business decision-making	
COJ	rappy decision-support to business decision-making.	

CO6 Applyknowledgeofbusinessconceptsandfunctionsinanintegratedmanner.

#### **Department of Physics**

#### Name of Course (Subject): PHYSICS Programme Specific Outcome (PSO):

On completion of the 03/04 years Degree in PHYSICS students will be able to:

- PSO 1: culminate in depth knowledge of almost all basic branches of physics such as mechanics properties of matter, relativity, electricity and magnetism, wave motion, optics, thermal physics, electronics, classical mechanics, quantum mechanics, spectroscopy, nuclear physics, condensed matter physics and also advanced areas like Nanoscience, energy science, astrophysics, instrumentation.
- PSO 2: communicate effectively physics concepts with examples related to day-to-day life. Acquire ability of recognizing and distinguishing various aspects of physics found in real life.
- PSO 3 : learn, perform and design experiments in the laboratory to demonstrate the concepts principles, laws of physics, theories learnt in the class rooms.
- PSO 4: acquire ability of critical thinking and logical reasoning in physics problems and their solutions. Develop ability to analyze physics problem including simple to thought provoking problems and apply the acquired knowledge to solve.
- PSO 5: appreciate the importance of physics subjects and its application for pursuing interdisciplinary and multidisciplinary higher education and research in these areas.
- PSO 6: understand the vast scope of physics as theoretical and experimental science with Application in finding solution of problems in nature spanning from smallest dimension 10-15 m to highest dimension 1026 m in space, covering energy ranges from 10-10 eV to 1025 eV.
- PSO 7: think independently and develop algorithm and program using programming techniques for solving real world physics problems.
- PSO 8: develop ability of working independently and to make in-depth study of various notions of physics.
- PSO 9 develop ability to apply the knowledge and skill acquired through experiments of physics in laboratories to solve real life problems.
- PSO 10: Pursue advanced studies and research in varied areas of physical science.

#### PHYSICS Discipline Specific Course (DSC) Course No.1 (Theory): Title of the Course (Theory): Mechanics and Properties of Matter

#### **Course Outcome (CO):**

- CO 1 : Analyze data, (graphical and analytical), through estimation of errors and their sources in experimental determination of physical quantities. Also able to fit experimental data to straight line graph and calculate standard deviation, standard error and probable error.
- CO 2 : Distinguish inertial, non-inertial and rotational frames of reference. Also able understand and

distinguish real, fictitious and Coriolis force and its importance in real life.

CO 3 : Distinguish Galilean, Lorentz transformation and their applications .Understand special

theory of relativity by studying variation of length, mass and time with relativistic velocity

- CO 4 : Analyze collision problems through laboratory and center of mass frame of reference, also able to relate these two frames.
- CO 5 : Understand concept of moment of inertia of regular/irregular bodies and its variation with axes through distribution of mass
- CO 6 : Find Young's modulus, rigidity modulus and their importance in understanding materials and applications.
- CO 7 : Understand concept of surface tension and viscosity of liquids and their experimental determination. CO 8 Understand importance of surface tension and viscosity of liquids/fluids in real life situation (everyday life).

#### **Physics Course Outcome**

Course No.1 (Theory): Title of the Course (Theory): Mechanics and Properties of Matter Course Outcome (CO):

CO 1 : Analyze data, (graphical and analytical), through estimation of errors and their sources in experimental determination of physical quantities. Also able to fit experimental data to straight line graph and calculate standard deviation, standard error and probable error.

CO 2 : Distinguish inertial, non-inertial and rotational frames of reference. Also able understand and distinguish real, fictitious and Coriolis force and its importance in real life.

CO 3 : Distinguish Galilean, Lorentz transformation and their applications .Understand special theory of relativity by studying variation of length, mass and time with relativistic velocity

CO 4 : Analyze collision problems through laboratory and center of mass frame of reference, also able to relate these two frames.

CO 5 : Understand concept of moment of inertia of regular/irregular bodies and its variation with axes through distribution of mass

CO 6 : Find Young's modulus, rigidity modulus and their importance in understanding materials and applications.

CO 7 : Understand concept of surface tension and viscosity of liquids and their experimental determination.

CO 8 Understand importance of surface tension and viscosity of liquids/fluids in real life situation (everyday life)

#### Course No.2 (Theory): Title of the Course (Theory): ELECTRICITY and MAGNETISM

#### **Course Outcome (CO):**

CO1: understand and distinguish application of Gauss law in vacuum and dielectric medium.

CO2: determine dielectric constant of solid/liquid materials by experiments in laboratory.

CO3: apply the resonant circuits in the field of communication and signal oscillator building

CO4: apply concepts of AC and DC bridges to determine values of resistance, capacitance of capacitor and self- inductance of coil.

CO5:.understand how to produce magnetic field from electric current. Understand magnetic field produced by current in toroid and solenoid.

CO6: distinguish Seeback and Peltier effect and their applications to real life. Also able to distinguish different type of thermocouples as temperature sensors.

CO7: explain Maxwell's equations to articulate the relationship between varying electric and magnetic field. Also able to explain electromagnetic waves and their characteristics

#### Course No.5 (Theory): Title of the Course (Theory): Wave Motion and Optics

Course Outcomes At the end of the course Students will be able to:

CO1 understand types of waves by their characteristics.

CO2 formulate a wave equation and obtain the expression for different parameters associated with waves. Explain and give an analytical treatment of the superposition of waves under different conditions, such as, equal or different frequencies.

CO3 analyse the formation of standing waves in the case of stretched string.

CO4 calculate velocity of sound at different conditions. Describe resonance in general and Helmholtz resonators in particular.

CO5 explain basics of laws of reflection and refraction.

CO6 describe different types of aberrations, cardinal points of optical instruments.

CO7 demonstrate interference of light due to division of wavefront and amplitude by Fresnel's biprism and Newton's rings experimental setup. Measurement of wavelength of light using experiments like Michelson interferometer.

CO8 explain diffraction due to different objects like single slit, two slits, diffraction of grating, oblique incidence, circular aperture and give the theory and experimental setup for the same.

CO9 explain the polarization of light and obtain how the polarization occurs due to quarter wave plates, half wave plates, and through the optical activity of a medium.

#### **Practical: Wave Motion and Optics**

Course Outcomes At the end of the course Students will be able to:

CO1 determine velocity of sound in different medium ( solid/fluid).

CO2 observe different Lissajous figures when two SHM are acting Perpendicular to each other with different frequencies and able to calculate unknown frequency of a component.

CO3 set up a spectrometer experiment for the measurement of wavelength, dispersive power of a prism etc.

CO4 explain the calculation of specific rotation of a sugar solution by using half shade polarimeter. CO5 calculate cardinal points of optical systems using goniometer and turn table experimental setup. CO6 demonstrate interference of light due to division of wave front and

amplitude in case of Fresnel's biprism/Lloyd mirror and Newton's rings experimental arrangements.

CO7 explain diffraction grating and hence calculation of resolving power.

CO8 measure wavelength of monochromatic light using Michelson interferometer. diffraction due to single slit and double slit experiments. CO9 measure the wavelength of laser light using single/double slit experiment.

#### OEC- 3: Sports Science (Code: 003PHY051)

Course Outcomes At the end of the course Students will be able to:

CO1 use different types of units in day today life.

CO2 explain various fundamental terms like mass, weight, velocity, speed, force, etc.

CO3 apply the knowledge of projectile motion in the field of sports like Javelin, Disc and Hammer throw.

CO4 describe and apply conservation laws, centre of mass of a system, angular momentum, Archimedes principle, Buoyancy and freefall under gravity in various events of sports.

CO5 realise and aware about importance of nutritious food. CO6 incorporate good life style by practicing walking, jogging, running and exercise.

#### Title of the Course (Theory): Thermal Physics and Electronics

Course Learning Outcomes At the end of the course, the students will be able to:

CO1. apply the laws of thermodynamics and analyze the thermal system and compare the efficiency and working of steam, Otto and Diesel engine.

CO2. analyze the temperature entropy-diagram with physical significance.

CO3. study the Maxwell's thermodynamical relations with different applications.

CO4. analyze the significance of thermodynamic potentials and develop the relation between thermodynamical potential with their variables.

CO5. distinguish the current and voltage source and construct the power supply with different filter circuits and its importance in real life.

CO6. use the concept of semiconductor to describe BJT, FET etc and explain their functions and applications.

CO7. describe the construction of IC-555 and its use in the astable multivibrator to generate rectangular waveform. CO8. explain the functioning of op-Amp and use them as the building blocks of applications. use of logic gates with different theorems of Boolean algebra followed by logics circuits.

#### **Title of the Course (Practical): Thermal Physics and Electronics**

Course Outcomes At the end of the course Students will be able to:

CO1 determine the thermal conductivity of bad conductor by Lee's and Charlton method. Compare the result with theoretical value.

CO2 determine of thermal conductivity of conductor like copper using different methods such as Searle's, Angstrom methods.

CO3 verification of Clausius- Clapeyron equation experimentally Determine the specific heat ratio for air using Clement and Desormes apparatus.

CO4 learn how to apply Thevenin's and Norton's theorem to given network. Also they will learn basics of voltage/current power supply.

CO5 study in depth about transistor/JFET by performing many experiments using them

CO6 learn about very popular versatile device such as Operational amplifier and its applications

CO7 learn how to implement logic function using IC-7400/any other IC'

## OEC- 4: Medical Physics (Code: 004PHY051)

Course Outcomes At the end of the course Students will be able to:

CO1 understand human body anatomy and its physiological properties of the circulatory system, digestive system, respiratory system endocrine system and nervous system.

CO2 understand physics behind. medical equipment's such as X-rays, CT and MRI and sonography. CO3 apply the principle of radiation physics, learn more about nuclear radiation detectors and how these radiation principles are used in radiation therapy.

CO4 know real time applications of this course by visiting diagnostic canters. Etc.

## **Department of Chemistry**

#### **Programme Specific Outcome (PSO):**

On completion of the 03/04 years Degree in Chemistry students will be able to:

- PO 1 Demonstrate, solve and an understanding of major concepts in all the disciplines of chemistry.
- PO 2 Provide students with broad and balanced knowledge and understanding of key chemical concepts.
- PO 3 Understand practical skills so that they can understand and assess risks and work safely and competently in the laboratory.
- PO 4 To apply standard methodology to the solutions of problems in chemistry.
- PO 5 Provide students with knowledge and skill towards employment or higher education in chemistry or multi-disciplinary areas involving chemistry.
- PO 6 Provide students with the ability to plan and carry out experiments independently and assess the significance of outcomes.
- PO 7 Develop in students the ability to adapt and apply methodology to the solution of unfamiliar types of problems.
- PO 8 Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions.

- PO 9 To prepare students effectively for professional employment or research degrees in chemical sciences.
- PO 10 To cater to the demands of chemical industries of well-trained graduates.
- PO 11 To build confidence in the candidate to be able to work on his own in industry and institution of higher education.
- PO 12 To develop an independent and responsible work ethics.

#### B.Sc. Semester – I DSCC-1 : Chemistry (Theory) I ( Code: 031CHE011) Course Outcome (CO):

After completion of course (Theory), students will be able to:

- CO1 : Describe the dual nature of radiation and matter; dual behavior of matter and radiation, de Broglie's equations, Heisenberg uncertainty principle and their related problems. Quantum mechanics. Derivation of Schrodinger's wave equation. Orbital sh ap es of s, p, d and f atomic orbitals, nodal planes. Electronic configurations of the atoms.
- CO2: Define periodicity, explain the cause of periodicity in properties, classify the elements into four categories according to their electronic configuration. Define atomic radii, ionisation energy, electron affinity and electronegativity, discuss the factors affecting atomic radii, describe the relationship of atomic radii with ionization energy and electron affinity, describe the periodicity in atomic radii, ionization energy, electron affinity and electronegativity.
- CO3: Explain bond properties, electron displacement effects (inductive effect, electrometric effect, resonance effect and Hyper conjugation effect). steric effect and their applications in explaining acidic strength of carboxylic acids, basicity of amines. Understand basic concept of organic reaction mechanism, types of organic reactions, structure, stability and reactivity of reactive intermediates.
- CO4: Describe important characteristics of configurational and conformational isomers. Practice and write conformational isomers of ethane, butane and cyclohexane. Understand the various concepts of geometrical isomerism and optical isomerism. Describe CIP rules to assign E,Z notations and R& S notations. Explain D and L configuration and threo and erythro nomenclature. Explain racemic mixture and racemisation, resolution of racemic mixture through mechanical separation, formation of diastereomers, and biochemical methods, biological significance of chirality.
- CO5: Explain the existence of different states of matter in terms of balance between intermolecular forces and thermal energy of the particles. Explain the laws governing behavior of ideal gases and real gases. Understand cooling effect of gas on adiabatic expansion. Describe the conditions required for liquefaction of gases. Realize that there is continuity in gaseous and liquid state. Explain properties of liquids in terms of intermolecular attractions.
- CO6: Understand principles of titrimetric analysis. Understand principles of different type's titrations. Titration curves for all types of acids base titrations. Gain knowledge about balancing redox equations, titration curves, theory of redox indicators and applications.

• CO7: Understand titration curves, indicators for precipitation titrations involving silver nitrate- Volhard's and Mohr's methods and their differences. Indicators for EDTA titrations - theory of metal ion indicators. Determination of hardness of water.

## CHEMISTRY DEPARTMENT

## B.Sc. Semester – III DSCC-5 : Chemistry (Theory) V (Code: 033CHE011) Course Outcomes (CO): After completion of course, Chemistry (Theory) - V students will be able to:

CO1: Explain free electron theory, physical properties of metals, distinguish between conductors, insulators, extrinsic and intrinsic semi conductors, Appreciate the importance of Hydrogen bond, applications of hydrogen bonding, van der Waals forces and factors affecting the strength and magnitude of van der Waals forces.

CO2 : Explain anomalous properties of lithium, diagonal relationship among elements preparation, uses, structure and bonding in diborane, borazine, boron nitride, carboranes, classification of silicates and their structures, oxides and oxyacids of nitrogen, oxoacids of phosphorus, sulphur and chlorine, inter halogen compounds and xenon compounds.

CO3: Understand preparation, general mechanism and named reactions of benzene and alkyl benzenes. CO4: Describe theory of orientation, explanation on the basis of stability of sigma complex using electron withdrawing and electron donating groups.

CO5: Understand relative synthesis, mechanisms and reactivities of halogen in alkyl halides, vinyl halides, allyl halides, aryl halides and aryl-alkyl halides.

CO6: Know different methods of synthesis of primary, secondary and tertiary their reactions and mechanisms.

CO7:. Understand different thermodynamic processes, first law of thermodynamics, work done, significance of enthalpy, Joule-Thomson effect and applications Kirchhoff's equation CO8: Derive Nernst distribution law and under different molecular states.

CO9: Acquaint with the industrial applications of Nernst distribution law.

CO10: Learn the law of chemical equilibrium, Le-Chatelier's principle, relations between Kp, Kc and Kx, ionic equilibria, hydrolysis, pH, common ion effect, solubility and solubility product.

CO11: Understand the principles and processes of metallurgy, extraction of d and f block elements and powder metallurgy.

CO12: Aware of alloys, purpose of making, composition and significance of alloys.

## B.Sc. Semester – III DSCC-6: Chemistry (Practical) - VI (Code: 033CHE012) Course Outcomes (CO): After completion of Chemistry (Practical) – VI, students will be able to Understand:

CO1: solubility, solubility product, common ion effect, their applications. Physico-chemical principles of separation of cations into groups in qualitative analysis of inorganic salts.

CO2: Develop the skill to perform Semi-micro qualitative analysis of mixtures of two simple inorganic salts containing two anions and two cations.

CO3: Able to write the chemical reactions involved in the analysis. CO6: Study the preparation and mechanism of reactions, recrystallization, determination of melting point and calculation of quantitative yields.

CO7: Prepare the organic compound with bromination, nitration, acetylaton, hydrolysis oxidation and reduction

## B.Sc. Semester – III OEC- 3: Industrial & Environmental Chemistry (Code: 003CHE051) Course Outcome (CO): After completion of course, Industrial Chemistry, students will be able to Understand:

CO1: minerals, ores, steps in metallurgy, extraction of metals of d & f block elements and powder metallurgy-preparation,

CO2: Appreciate purpose of making, preparation, composition and applications of alloys.

CO3: Explain manufacture of glass, ceramics, Portland cement, chemical composition of cement, setting and hardening of Portland cement, Electroplating of nickel and chromium, Primary and secondary batteries, battery components and their role.

CO4: Explain sources of energy, nuclear fusion/fission, solar energy, hydrogen and geothermal energy.

CO5: Know air pollutants, control measures of air pollution, photochemical smog, green house effect, global warming and ozone depletion.

CO6: Aware of water pollutants and their sources, industrial effluents and their treatment, sludge disposal, water quality parameters for waste water, industrial water and domestic water, disposal of nuclear waste, nuclear disaster and its management.

## B.Sc. Semester – IV DSCC- 7: Chemistry (Theory) - VII (Code: 034CHE011) Course Outcome (CO): After completion of course (Theory), students will be able to Understand:

CO1: the general characteristics of d and f- block elements with reference to electronic configuration, colors, variable oxidation states, magnetic properties etc., separation of lanthanoids by ionexchange method and preparation of trans-uranic elements (up to Z=103).

CO2: Acquaint with general properties and types of inorganic polymers, silicones and phosphazines.

CO3: Learn Bronsted-Lowry concept, Lux-flood concept, Lewis concept and Usanvichsandvich concept and their limitations. HSAB concept and its applications.

CO4: Gain knowledge of acidic character, comparative acid strengths of alcohols and phenols and mechanism of named reactions.

CO5: Familiar with Williamson's ether synthesis, epoxides and Crown Ethers formation and properties

CO6: Understand the synthesis of aldehydes and ketones, their properties, named reactions mechanism.

CO7: Appreciate the significance of entropy, second law of thermodynamics, change in entropy and other thermodynamic parameters with respect temperature.

CO8: Know types of adsorption isotherms, types of catalysis and their theories with examples and autocatalysis.

CO9: Know the manufacture, properties and applications of glass and cement.

CO10: Understand types, composition and manufacture of fertilizers.

CO11: Appreciate the paints and pigments formulations, composition and related properties.

CO12: Learn the types, manufacture of soaps, detergents and their cleansing actions.

#### B.Sc. Semester – IV DSCC-8: Chemistry (Practical) - VIII (Code) 034CHE012) Course Outcomes (CO) After completion of course (Practical), students will be able to Understand :

CO1: Explain regarding errors, types of errors, accuracy, precision, significant figures, standard deviation, and Use of log table

CO2: Determine the percentage of chlorine in bleaching powder, free acidity in ammonium sulphate fertilizer, phosphoric acid in super phosphate fertilizer, calcium in CAN fertilizer/dolomite ore by complexometric method, copper in brass by iodometric method/ calcium in cement by oxalate method.

CO3: Understand the effect of acid strength on hydrolysis of methyl acetate using HCl and H2SO4 , for the pseudo first order reaction.

CO4: Determine the change in enthalpy of solution and ionization.

CO5: Learn the concepts of degree of dissociation, adsorption and distribution law.

# B.Sc. Semester – IV OEC – 4 : Analytical Chemistry (004CHE051). Course Outcomes (CO) After completion of course, Analytical Chemistry students will be able to Understand:

CO1: Understand the principle, classification of volumetric analysis, different methods of expression of concentration term, titration curves of all type of acid-base titrations.

CO2: Understand the theory, titration curves, indicators of precipitation and complexometric titration.

CO3: Acquaint with steps involved in gravimetric analysis and advantages of organic reagents over inorganic reagents.

CO4: Learn the Composition of soil and the determination of pH of soil samples. Estimation of Calcium a n d Magnesium in the soil.

CO3: Identify pure and contaminated water, water sampling & water purification methods and water quality measurements.

CO4: Understand the principle, techniques and applications of chromatography, paper chromatography, Gas chromatography and High Performance Liquid Chromatography.

CO5 : Learn the ion-exchange chromatography. Resins, types with examples, mechanism of cation and anion exchange processes and applications of ion-exchange chromatography in softening of hard water, separation of lanthanides and industrial applications.

CO6: Know the solvent extraction method, its types and factors affecting the solvent extraction.

CO7: Make out the nutritional value of food, food processing, food preservation and adulteration.

#### **Department of Botany**

On completion of the 03/04 years Degree in BOTANY students will be able to:

- **PSO 1:** Skill development for the proper description using botanical terms, identification, naming, and classification of life forms especially plants and microbes.
- **PSO 2:** Acquisition of knowledge on the structure, life cycle, and life processes that exist among plant and microbial diversity through certain model organism studies.
- **PSO 3**: Understanding of various interactions that exist among plants and microbes; to develop the curiosity on the dynamicity of nature.
- **PSO 4**: Ability to explain the diversity and evolution based on the empirical evidence in morphology, anatomy, embryology, physiology, biochemistry, molecular biology, and life history.
- **PSO 5:** Skill development for the collection, preservation, and recording of information after observation and analysis- from simple illustration to molecular database development.
- **PSO 6:** Making aware of the scientific and technological advancements- Information and Communication, Biotechnology, and Molecular Biology for further learning and research in all branches of Botany.
- **PSO 7:** To enable the graduates to prepare for national as well as international level competitive examinations like UGC-CSIR, UPSC, KPSC, and others.
- **PSO 8**: To enable the students for practicing the best teaching pedagogy as a biology teacher including the latest digital modules.
- **PSO 9:** The graduates should be knowledgeable and competent enough to appropriately deliver on aspects of global importance like climate change, SDGs, green technologies, etc at the right opportunity.
- **PSO 10:** The graduate should be able to demonstrate sufficient proficiency in the hands-on experimental techniques for their area of specialization within biology during research and their professional career.

Course No.1 (Theory): Title of the Course (Theory): Fungi, Microbiology and Plant Pathology Course Outcome (CO):

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After completion of the course (Theory), students will be able to:

- **CO 1:** Develop an understanding of the concept of microbial nutrition, Classify viruses based on their characteristics and structures.
- **CO 2**: Develop a critical understanding of plant diseases and their remediation. Examine the general characteristics of bacteria and their cell reproduction/recombination.
- **CO 3**: Increase the awareness and appreciation of human-friendly viruses, bacteria, algae, and their economic importance. Identify true fungi and demonstrate the principles and application of plant pathology in the control of plant disease.

**CO 4**: Demonstrate skills in laboratory, field, and glasshouse work related to mycology and plant pathology.

**CO 5**: Develop an understanding of microbes, fungi, and lichens and appreciate their adaptive strategies Identify the common plant diseases according to geographical locations and device control measures.

Conduct experiments using skills appropriate to subdivisions

#### **Course No.1 (Practical): Title of the Course (Practical): Fungi, Microbiology and Plant Pathology**

#### Course Outcome (CO):

After completion of the course

(Practical), students will be able to:

**CO 1:** Develop an understanding of the concept of microbial nutrition, Classify viruses based on their characteristics and structures.

**CO 2**: Develop a critical understanding of plant diseases and their remediation. Examine the general characteristics of bacteria and their cell reproduction/recombination.

**CO 3**: Increase the awareness and appreciation of human-friendly viruses, bacteria, algae, and their economic importance. Identify true fungi and demonstrate the principles and application of plant pathology in the control of plant disease.

**CO 4**: Demonstrate skills in laboratory, field, and glasshouse work related to mycology and plant pathology. **CO 5**: Develop an understanding of microbes, fungi, and lichens and appreciate their adaptive strategies Identify the common plant diseases according to geographical locations and device control measures. Conduct experiments using skills appropriate to subdivisions

#### OEC-1: Title of the Course: Mushroom Cultivation Course Outcome (CO):

After completion, of course, students will be able to:

**CO 1**: Identification of various types and categories of mushrooms

CO 2 : Demonstrate various types of mushroom cultivating technologies

**CO 3 :** Examine various types of food technologies associated with the mushroom industry

**CO 4 :** Value the economic factors associated with mushroom cultivation

**CO 5** : Device new methods and strategies to contribute to mushroom production

## Subject: Gardening and landscaping SKILL ENHANCEMENT COURSE (SEC)-I

**Course Outcome (CO):** 

After completion of the Skill Enhancement course, students will be able to: **CO 1:** Apply the basic principles and components of gardening

CO 2: Conceptualize flower arrangement and bio-aesthetic planning

CO 3: Design various types of gardens according to the culture and art of bonsai

CO 4: Establish and maintain special types of gardens for outdoor and indoor landscaping

## Course No.2 (Theory): Title of the Course (Theory): Algae, Bryophytes, Pteridophytes, and Gymnosperms

#### Course Outcome (CO):

After completion of the course (Theory), students will be able to:

**CO 1:** Demonstrate an understanding of Algae, Bryophytes, Pteridophytes, and Gymnosperms.

**CO 2**: Develop a critical understanding of morphology, anatomy, and reproduction of Algae, Bryophytes, Pteridophytes, and Gymnosperms.

CO 3: Understanding of plant evolution and their transition to land habitat.

**CO 4:** Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of Alage, Bryophytes, Pteridophytes, Gymnosperms **CO 5**: Economic importance of Alage, Bryophytes, Pteridophytes, Gymnosperms

#### Subject: Algae, Bryophytes, Pteridophytes and Gymnosperms

#### **Discipline-Specific Course (DSC)**

#### Course Outcome (CO):

After completion of the course (Practical), students will be able to: **CO 1:** Demonstrate an understanding of Algae, Bryophytes, Pteridophytes, and Gymnosperms.

**CO 2**: Develop a critical understanding of morphology, anatomy, and reproduction of Algae, Bryophytes, Pteridophytes, and Gymnosperms.

CO 3: Understanding of plant evolution and their transition to land habitat.

**CO 4:** Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of Alage, Bryophytes, Pteridophytes, Gymnosperms

**CO 5**: Economic importance of Alage, Bryophytes, Pteridophytes, Gymnosperms **Subject: Biofertilizers Open Elective Course** (OEC-2(OEC for other students)

#### Course Outcome (CO):

After completion, of course, students will be able to:

CO 1: Develop their understanding of

the concept of bio-fertilizer CO 2:

Identify the different forms of

biofertilizers and their uses CO 3:

Compose the Green manuring and

organic fertilizers

**CO 4:** Develop the integrated management for better crop production by using

both nitrogenous and phosphate biofertilizers and vesicular-arbuscular mycorrhizal (VAM).

**CO 5**: Interpret and explain the components, patterns, and processes of bacteria for growth in crop production

#### **Course Outcomes:**

On completion of this course, the students will be able to: 1. Observation of variations that exist in internal structure of various parts of a plant and as well as among different plant groups in support for the evolutionary concept. 2. Skill development for the proper description of internal structure using botanical terms, their identification and further classification. 3. Induction of the enthusiasm on internal structure of locally available plants. 4. Understanding various levels of organization in a plant body with an outlook in the relationship between the structure and function through comparative studies. 5. Observation and classification of the floral variations from the premises of college and house. 6. Understanding the various reproductive methods sub-stages in the life cycle of plants 7. Observation and classification of the embryological variations in angiosperms. 8. Enthusiasm to understand evolution based on the variations in reproduction among plants.

#### OEC-3 (OEC for other students): 003 BOT 051

#### **Title of the Paper: BOTANICAL GARDEN AND LANDSCAPING**

**Learning outcomes**: After the completion of this course the learner will be able to:  $\Box$  Apply the basic principles and components of gardening  $\Box$  Conceptualize flower arrangement and bio-aesthetic planning  $\Box$  Design various types of gardens according to the culture and art of bonsai  $\Box$  Distinguish between formal, informal and free style gardens  $\Box$  Establish and maintain special types of gardens for outdoor and indoor land scaping

#### Title of the course (theory)

#### DSSC ECOLOGY AND CONSERVATION BIOLOGY

#### Course Code: 034 BOT 011

#### **Course outcome**

Students will be able to  $\Box$  Know the principles and concept of ecosystems- Components, productions, Energy and limiting factors.  $\Box$  Know the concepts of productivity, measurements of productivity, food chain, food webs and trophic levels  $\Box$  Understand the diversity and characters of major ecosystems – Aquatic (Marine and Freshwater), Terrestrial and Agricultural ecosystems  $\Box$  Know the Concept of biotic community with their Size and structure of biotic community- Physiognomy, Life-forms, stratification, ecotones and concept of edge-effect.  $\Box$  Understand the causes and patterns of ecological succession, concept of climax.  $\Box$  Know the Concept of ecological niches, species coexistence, overlapping and niche segregation.  $\Box$  Know the concept of Eutrophication, Heavy metal pollution, Ozone depletion, greenhouse effect, Global warming and its effect, Acid rains. Pesticide, particulate and nuclear radiation.  $\Box$  Understand the Solid wastes. Noise Pollution. Pest population and its biological control, invasive species and their effects on native species in aquatic and terrestrial ecosystems.  $\Box$ 

Know the Patterns of diversity in a community, Diversity measurement and indices.  $\Box$  Understand the Global distribution of organisms, concept of islands, biodiversity hotspots. Methods of conservation of biodiversity.Centers for origin of cultivator plants.  $\Box$  Know the population density, Natality and mortality. Life table, population growth curves, carrying capacity.  $\Box$  Know the positive and negative interactions among the organisms.

#### **B.Sc. BOTANY – IV Semester**

#### **Open Elective Course (OEC - 4) (OEC for other students)**

#### Paper: MEDICINAL PLANTS IN HEALTH CARE Code:OEC-004 BOT 051

#### Learning outcomes:

On completion of this course, the students will be able to:  $\Box$  Recognize the basic medicinal plants  $\Box$  Apply techniques of conservation and propagation of medicinal plants.  $\Box$  Setup process of harvesting, drying and storage of medicinal herbs  $\Box$  Propose new strategies to enhance growth of medicinal herbs considering the practical issues pertinent to India

#### **Department of ZOOLOGY**

#### **Programme Specific Outcome (PSO):**

On completion of the 03/04 years Degree in Zoology students will be able to: **PS0 1:** 

- The structure and functions of animal cell, cell organelles, cell- cell interactions, process of reproduction leading to new organisms.
- The principles of inheritance, Mendel's laws and the deviations. Inheritance of chromosomal aberrations inhumans by pedigree analysis in families.
- Acquaint the knowledge about basic procedure and methodology of integrated animal rearing. Students can start their own business i.e. self employments.
- To get employment in different sectors of Applied Zoology.

#### PSO 2: .

- In depth understanding of structure of biomolecules like proteins, lipids and carbohydrates.
- The thermodynamics of enzyme catalyzed reactions.
- To know various physiological processes of animals.

## Course No.1 (Theory): Title of the Course (Theory): Cytology, Genetics and Infectious Diseases

#### Course Outcome (CO):

After completion of course (Theory), students will be able to:

CO 1 :The structure and function of the cell organelles

CO 2 : The chromatin structure and its location.

CO 3 :The basic principle of life, how a cell divides leading to the growth of an Organism and also reproduces to form a new organisms.

- CO 4: How a cell communicates with its neighboring cells.
- CO 5: The principles of inheritance, Mendel's laws and the deviations.
- CO 6: How environment plays an important role by interacting with genetic factors. CO 7: Detect chromosomal aberrations in humans and study of

pedigree analysis.

#### Course No.1 (Practical): Title of the Course (Practical): Cytology, Genetics and **Infectious Diseases**

#### **Course Outcome (CO):**

After completion of course (Practical),

students will be able to:

- CO 1:To use simple and compound microscopes.
- CO 2:To prepare stained slides to observe the cell organelles.
- CO 3:To be familiar with the basic principle of life, how a cell divides leading to the growth of an organism and also reproduces to form new organisms.
- CO 4:The chromosomal aberrations by preparing karyotypes.
- CO 5;How chromosomal aberrations are inherited in humans by pedigree analysis in families. The antigenantibody reaction.

#### **Course Outcome (CO):**

After completion of course, students will be able to:

- CO 1: Gain knowledge about silkworms rearing and their products.
- CO 2 :Gain knowledge in Bee keeping equipment and apiary management.
- CO 3: Acquaint knowledge on dairy animal management, the breeds and diseases of cattle and learn the testing of egg and milk quality.

CO 4: Acquaint knowledge about the culture techniques of fish and poultry.

CO 5: Acquaint the knowledge about basic procedure and

methodology of vermiculture. CO 6:Learn various concepts of lac cultivation.

CO 7:Students can start their own

business i.e. self-employments. CO

8:Get employment in different applied

sectors

#### **Course Outcome (CO):**

After completion of Skill Enhancement course, students will be able to:

CO 1 :Understands the importance of earthworms in maintaining soil quality.

- CO 2:Learns that the vermicomposting is an effective
  - organic solid waste management method.

CO 3:Gets acquainted with the importance of earthworms in agro-based economic activity.

CO 4:Vermicomposting leads to organic farming and healthy food production.

CO 5: Vermicomposting may be taken up as a small scale industry by the farmers and unemployed youth.

CO 6:Get jobs in teaching institutions or vermiculture units as technicians.

CO 7:Learn the concept of vermicomposting as bio fertilizers thus student can become an entrepreneur after completion of the course.

CO 8:Best opportunity for self-employment and lifelong learning with farmers.

#### Course No.2 (Theory): Title of the Course (Theory) : Biochemistry and Physiology Course Outcome (CO):

After completion of course (Theory), students will be able to:

CO 1:To develop a deep understanding of structure of

biomolecules like proteins, lipids and carbohydrates.

CO 2:How simple molecules together form

complex macromolecules. CO 3:To

understand the thermodynamics of enzyme

catalyzed reactions. CO 4:Mechanisms of

energy production at cellular and molecular

levels. CO 5:To understand various

functional components of an organism.

CO 6:To explore the complex network of these functional components.

CO 7:To comprehend the regulatory mechanisms for maintenance of function in the body.

#### Course No.2 (Practical): Title of the Course (Practical) : Biochemistry and Physiology Course Outcome (CO):

After completion of course (Practical), students will be able to:

- CO 1:At the end of the course the student should be able to understand Basic structure of biomolecules through model making.
- CO 2:Develop the skills to identify different types of blood cells.
- CO 3:Enhance basic laboratory skill like keen observation, analysis and discussion. Learn the functional attributes of biomolecules in animal body.

CO 4:Know uniqueness of enzymes in animal body and their importance through enzyme kinetics.

#### **Department of Commerce B. Com**

#### The Salient Features of the Four-Year B.COM Programme:

- It is a Choice Based Credit System under Semester Scheme.
- The programme comprises of about 50% Discipline Specific Core Courses as Major subjects, 20% Discipline Specific Elective Courses and remaining 30% Ability
- Enhancement Compulsory Courses, Skill Enhancement Courses along with Open Elective Courses.
- There lative importance of CourseNotes study is measured innermost credits.
- The programme permits horizontal mobility in course selections and vertical growth in the core courses.
- The students shall take part in value-based activities.
- The declaration of result is based on Aggregate Percentage of marks obtained and Cumulative Grade Point Average (CGPA) earned.

- The candidate has an option to exit after TWO, FOUR and SIX semesters of the
- programme and shall be awarded Certificate, Diploma, and General Degree, respectively with a provision to re-enter and complete the degree.
- There is a provision to transfer the credits earned by the candidate during outward
- mobility from one institution of this University to Institutions of other Universities.
- The programme permits the consideration of credits earned from SWAYAM and other platforms recognized by the University.
- The Programme has special provisions for independent learners to earn additional credits from inter / intra disciplinary subjects apart from mandatory credits.

### **DSC 1.1: Financial Accounting**

Course Outcomes: On successful completion of the course, the Students will be able to:

- Self-balance independent ledgers of financial accounting system
- Demonstrate the disadvantages of incomplete system and convert it into complete system
- Prepare accounts used in consignment, mining, extraction, collieries, etc
- Finalise the accounts of joint ventures either in the books of individual ventures or in the entity itself.

### **DSC - 1.2: Principles of Marketing**

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

- Articulate the steps involved in new product launch
- Explain the factors influencing the pricing decisions of old and new products
- Assist firms in developing a profitable product-line or product mix
- Understand the basic concepts of marketing and asses the marketing environment.
- Segment markets considering multiple factors
- Judge the impact of promotional techniques on the customers & importance of
- channels of distribution.
- Outline the recent developments in the field of marketing.

## **DSC-1.3: Stock Market Operations**

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

- Explain the art of investing in stock markets and compute the gain or losses
- Develop the efficient stock portfolios
- Demonstrate the process of opening demat accounts and the process of margin and short
- selling activities
- Explain the various stocks included in the Sensex and other indices and explain the
- interpretation
- Articulate the actions taken by the SEBI in protecting the interests of small investors. To provide conceptual understanding of the concept of stock exchange in India

## **SEC 1.4: Computerized Accounting**

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

• Demonstrate the process of accounting in computerized method

- Explain the distinction between manual and computerized accounting
- Design accounting package for small enterprises
- Prepare management information reports through computerized accounting

### **OEC - 1.5: Accounting for Everyone**

Course Objectives & Course Outcomes: On successful completion of the course, the Students will be able to:

- Understand accounting terms and the process of preparing financial statements
- Explain why accounting statements are prepared and various users of the same
- Distinguish various financial statements prepared and their purposes
- Articulate the challenges of accounting system and the use of accounting standards in overcoming them
- State the methods of interpretation and the advantage of ratio analysis in financial Analysis

## **OEC - 1.5: Financial Literacy**

Course Outcomes: On successful completion of the course, the Students will be able to:

- Articulate the necessity of financial literacy to common man and the process of learning
- Understand various concepts of budgets and appreciate the process of budget development
- Understand various types of banks operating in the economy and the controls used by the RBI
- Prepare financial plan and budget and manage personal finances;
- Open, avail, and manage/operate services offered by banks;
- Open, avail, and manage/operate services offered by post offices;
- Plan for life insurance and property insurance & select instrument for investment in shares

## Fundamentals of Accounting and Commerce – I

**Learning Objectives and Outcomes**: The course has the objective of providing the basic concepts of accounting and commerce among non-commerce pupils. This would enable them to understand higher aspects of business organization. Computational and analytical accounting skills are included in the curriculum

## DSC – 2.1: Financial Accounting-II

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

- Finalize the accounts of insolvent individuals and compute the final payments
- Explain the amount to be claimed by the policyholders in insurance related losses
- Demonstrate the art of finalizing accounts of departmental and branch accounts
- Explain the necessity and significance of accounting standards
- Articulate the differences between Ind Accounting standards and IFRS

## DSC - 2.2: Entrepreneurship

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

- Articulate the process of enterprise planning and execution
- Describe various schemes and government and institutions and facilities offered by them
- Demonstrate the qualities of successful entrepreneurs
- Understand the various financing techniques for start-ups
- Develop the mock enterprises and the process of registration

#### DSC - 2.3: Human Resource Management

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

- Understand the basic concepts of human resource management
- Articulate various methods of human resource recruitment and selection
- Analyse the merits and demerits of various induction and training programmes
- Compare and contrast the HR practices in government and private sectors
- Explain the pitfalls of neglecting HR policies in an organization

#### **OEC – 2.5: Financial Environment**

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

- Understand the fundamental factors constituting part of financial structure
- Learn about various financial institutions operating in an economy
- Articulate the services offered by development financial institutions
- Examine the influence monetary, trade, fiscal and tax policies on stock price

#### **OEC - 2.5: Investing in Stock Markets**

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

- Explain the basics of investing in the stock market, the investment environment as well as risk & return;
- Analyse Indian securities market;
- Articulate the distinction between the fundamental and technical analysis
- Explain the steps involved in opening demat accounts
- Identify the best stocks for investment by small investors
- State the risks involved in stock investment

## B.Com 3<sup>rd</sup> and 4<sup>th</sup> Semester

#### **International Business**

The course is designed to update the basic understanding of multinational and transnational companies, their features and advantages; to enable students to know the different modes of doing international business and changes in product, marketing and pricing strategies to be made to adopt to the international conditions. This course equips students with basic knowledge of international business and is useful in running international businesses. They can be useful in carrying out analysis of international marketing research, in product and pricing adaptation, etc

#### **Company Law and Secretarial Practice**

The course aims to acquaint students relating to provisions of new company law influencing company secretary and this would enable them to discharge effectively secretarial

assignments of the law. The Conceptual, communicational and analytical skills are included in the curriculum

### **Company Account I**

The course aims to provide the understanding of basic accounting framework of corporate entities and would enable them to be more effective in performance of accounting tasks. The course includes computational, analytical and interpretational skills in the curriculum.

#### **Company Account II**

The Students will be able to The course is designed to impart higher knowledge relating to accounting of complex transactions of companies. This would enable the pupils to perform accounting tasks effectively. The course includes computational, analytical and interpretational skills in the curriculum

### **Financial Management**

The course is designed to provide conceptual, theoretical and practical understanding of various financial management techniques. This would enable the students as financial executives, in optimizing the use of financial resources. Conceptual, computational and analytical skills are learnt in the course

### **Business Regulatory Framework**

a) Recognise the laws relating to Contracts and its application in business activities.

b) Acquire knowledge on bailment and indemnification of goods in a contractual relationship and role of agents.

c) Comprehend the rules for Sale of Goods and rights and duties of a buyer and a seller.

d) Distinguish the partnership laws, its applicability and relevance.

e) Rephrase the cyber law in the present context

## B.Com 5<sup>th</sup> and <sup>6th</sup> Semester

statements of observable student actions that serve as evidence of knowledge, skills and values acquired in this course

## Cost Accounting –I

1.Understand the concepts of cost accounting and compare with the financial accounting

- 2. Explain the applicability of cost accounting methods in various industries
- 3. Prepare the cost-sheet of a given manufacturing unit or service enterprise
- 4. Identify the various cost elements that go in making up a unit of product or service.

5. Explain the various kinds of direct and indirect materials needed to produce a tangible product

6. Identify the cost elements of employees in manufacturing a product or rendering a service.

7. Distinguish between various elements of overhead cost and their allocation, apportionment

## Cost Accounting-II

1. understand the concept of reconciliation and reasons for the reconciliation

- 2. explain the application of ob costing method
- 3. identify the process costing adoption and steps involved
- 4. understand the concept of operating cost and various cost elements
- 5. understand the concept of marginal cost and its application in decision making process
- 6. distinguish between joint and by products and costing methods

## Income tax law and practice-II

1. Understand the concept of set-offs and carry forward of losses as per tax laws

2. Distinguish between short-term and long-term capital gains and tax liability on both the incomes

3. Classify the investment avenues provided to minimize the capital gain taxes

4. Identify the tax deductions available to individual assesses and others

5. Understand the structure of administration of tax laws in India

### 6. Compute the total tax liabilities of individuals of with different levels of incomes

### Income tax law and practice

1. Explain the various concepts of Income tax law

2. Understand the classification of heads of income used for tax

- 3. Explain the distinction between tax free and taxable income
- 4. Describe the distinction between allowances, rebates and deductions allowed

5. Compute the income of individuals as per the provisions of law

6. Compute the income from house property and other heads

7. Understand the treatment of business incomes and expenses under the law

## **Principles and Practice of Auditing**

1. Understand the concept of auditing and its comparison with accounting

- 2. Explain the value of auditing in detecting accounting frauds and errors
- 3. Examine the process of auditing a business enterprise
- 4. Explain the value and relevance of internal auditing
- 5. Verify the books of registers with vouchers created for recording
- 6. Perform of internal audit of assets, incomes, expense, etc vouchers

## **Retail Marketing Management**

- 1. Understand the relevance of retail marketing in India
- 2. Compare the features of retail Marketing with urban marketing methods
- 3. Explain the unique features of retail marketing
- 4. Identify challenges involved in designing products for retail marketing
- 5. List out special pricing mechanism to be used for retail marketing
- 6. Identify the differences between urban packing and rural packing systems

## **Human Resources Development**

- 1. Explain the concept of HRD and its objectives
- 2. Distinguish between HRM and HRD
- 3. Understand the relevance of HRD practices in organizational development
- 4. Identify the activities involved in HRD Programme
- 5. Identify linkages between Technology and HRD practices.

## **GST-Law & Practice**

1. Explain the concept of GST and its applications in various industries.

- 2. Understand GST tax structure for various products.
- 3. Analyse the GST registration process and steps involved in it.
- 4. Explain the process of claiming input tax credit by businessman.
- 5. Understand the steps involved in GST E- filling
- 6. Explain various valuation methods used in the GST Law

## **Employability Skills in Commerce**

- 1. Explain the process of preparing for employment in commercial establishment
- 2. Understand the basic elements of competitive examinations in institutions of business

3. Explain method of identifying characteristics of suitable candidates by the commercial enterprises

## **Principles of Management Accounting**

- 1. Understand the concept of management accounting and distinction with financial accounting
- 2. Explain the techniques available for data analysis and interpretation
- 3. Understand the trend percentages and comparative financial statements
- 4. Explain the classification and significance of ratio analysis
- 5. Compute funds and cash from operational activities
- 6. Understand the concept of depreciation as a non-cash item of funds

## **Services Marketing**

- 1. Understand the concept of service marketing
- 2. Explain the process of designing a service by a service sector
- 3. Explain the promotional strategies used by service centers
- 4. Understand the concept and methods of service cost and pricing
- 5. Explain the distribution channels employed in service sector

## **Cultural Diversity at Work Place**

- 1. Explain the concept of cultural diversity and its relevance
- 2. Understand cross cultural management
- 3. Explain the necessity of cultural diversity at work place
- 4. Understand the needs and significance of multicultural teams in organization
- 5. Explain the impact of global cultural diversity on business functioning

## INTERNSHIP

- 1. Understand the real business conditions in decision making
- 2. Explain the difference between class room learning and business reality
- 3. Learn the art of communicating with real workers.

## Assessment of Non –Individuals and filling of ITR

1. Understand concept of business r profession income

2. Explain salient features of various provisions of tax laws as applicable to business or profession

3. Identify the unique features of partnership firms from tax point of view

4. Identify the steps involved in filing IT returns under the law

5. Specify the significance provisions of IT law as applicable to businesses

## **Financial Analysis Report**

1. Explain the art of analyzing the financial statements

- 2. Understand the process of interpretation of financial reports
- 3. Explain various tools of financial analysis

## **Department Of BBA and BCA**

## Programme Outcomes and Course Outcomes.

## **BBA Programme:**

Programme Outcomes (PO)

On successfully completing the program the student will be able to:

PO1. Understand concepts and principles of management/business; identify the opportunities in the corporate environment and manage the challenges.

PO2. Demonstrate the knowledge of management science to solve complex corporate problems using limited resources. Display enhanced personality and soft skills.

PO3. Function effectively as a Manager, and as an individual member in diverse teams, and in multidisciplinary settings in the areas of marketing, finance, HR, etc.

PO4. Demonstrate entrepreneurial competencies by identifying business opportunities, design and implement innovations in the workspace.

PO5. Exhibit managerial skills in the areas of.

PO6. Possess a sturdy foundation for higher education

#### **BBA Course Outcomes:**

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

CO 1: Understand ever growing importance of Production and Operations Management in uncertain business environment.

CO 2: Gain an in-depth understanding of Plant Location and Layout.

CO 3: Appreciate the unique challenges faced by firms in Inventory Management.

CO 4: Understand the subject as to Production Planning and Control.

CO 5: Develop skills to operate competitively in the current business scenario.

CO 6: Understand the legal aspects of banker and customer relationship.

CO 7: Open the different types of accounts.

CO 8: Describe the various operations of banks.

CO 9: Understand the different types of crossing of cheques and endorsement.

CO 10: Understanding of different types of E-payments.

**BCA Programme:** 

#### Name of Course (Subject): Computer Applications:

#### **Programme Specific Outcome (PSO):**

On completion of the 03/04 years Degree in BCA students will be able to:

PSO 1: To provide young men and women with required knowledge and necessary skills to get rewarding careers into the changing world of information technology.

PSO 2: To provide a foundation of computing principles and business practices for effectively using/managing information systems and enterprise software.

PSO 3: To specialize in legacy applications, system software or mobile application.

PSO 4: Think of new approaches for solving problem in different domains.

PSO 5: To caters the needs of managing the business application.

PSO 6 Be in a position to develop industrial applications.

#### **Course Outcome (CO):**

After completion of course (Theory), students will be able to: CO 1: Familiarize with fundamental concepts and computer programming.

CO 2: Learn fundamental concepts of programming by developing and executing programs in

CO 3: Focuses on the structured program.

CO 4: Various constructs and their syntax etc.

#### **Specific outcomes of M.A Economics**

Under the PG course all subjects are classified into theoretical and applied. The core subjects are Viz; Micro Economic Analysis, Macro Economic Analysis, Economics Growth and Development, Econometrics, Public Finance, International Trade, Research Methodology, Indian Economy and so on....

- 1. In the above subjects some deal with the basic concepts of consumers' behaviour to solve the production and business strategies.
- 2. Some subjects help in money and banking system, production and budgetary policy, betterment in international trade relation and enhance the country's economy.
- 3. Apart from these, some are purely applied subjects viz; Econometrics, Research Methodology, which assist to get the knowledge of the basic idea of research.

#### Specific outcomes of MA English

- 1. Students develop communication skills.
- 2. Equipping them with confidence to face the interview boards and various competitive exams.
- 3. Training them to stand in adverse conditions and reach out to be constructively useful to the firm and the institution whey they work in.
- 4. The vast knowledge imparted to them helps them to improve their creative skills of reading and writing.

#### Specific outcomes of M. Com

- 1. Advanced knowledge in the field of business and management.
- 2. Development of analytical and critical thinking.

3. Skills required preparing business projects and carrying research activities.

4. Assessment of stock and derivative market temperament.

5. Advanced knowledge on Domestic and International Financial System.

6. Ability to address the bottleneck in the business.

7. Preparation of project report and effective presentation.

8. Advanced communicative skills.

9. Knowledge of contemporary issues.

10. Inculcate leadership qualities.

11. Ability to boost the morale of the peers.

IQAS Co-Ordinator Nehru Arts Science and Commerce College HUBLI-20

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