

HINDU COLLEGE :: GUNTUR



SYLLABUS HAND BOOK 2015-16 to 2019-20

HINDU COLLEGE :: GUNTUR



**LANGUAGES
SYLLABUS**



HINDU COLLEGE, GUNTUR

(Re-accredited by NAAC as Grade 'A' with CGPA 3.07)

Main Road, Opp. Sri Venkateswara Vignan Mandir, Guntur

DEPARTMENT OF ENGLISH UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016

GENERAL ENGLISH

I SEMESTER

By the end of the semester

CO1. The student will be able to use grammar effectively in writing and speaking skills.

CO2. He learns good vocabulary.

CO3. He understands writing skills and he is able to acquire soft skills in professional and daily life.

CO4. The learner confidently use the tools of communication skills.

II SEMESTER

A Reader is able to learn at the end of this semester:

CO1. How to write a paragraph, and learns the comprehension writing.

CO2. At the end of this semester, a student is able to learn vocabulary with very good spelling.

CO3. He learns vocabulary with sounds and symbols. He learns stress and Intonation of words and sentences.

CO4. He learns Antonyms and Synonyms.

III SEMESTER

At the end of this semester a reader is able

CO1. To learn language activities like JAM, Note Making, Report Writing, Expansion of Ideas and he learns Grammar, Not making, Report writing, Writing for Media.

IV SEMESTER

Through Semester,

CO1. One may learn Soft skills about positive thinking, Body language and Social Media.

CO2. He learns paragraph writing, summarizing, letter writing, E-correspondence and Curriculum vitae.



HINDU COLLEGE, GUNTUR

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UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016

PROGRAMME: THREE-YEAR B.A. /B.Sc./B. Com. SANSKRIT

Program Outcomes

Program Outcome of Sanskrit Course in Under Graduation

Student seeking admission for UG Program is expected to imbue with following quality which helps them in their future life to achieve the expected Goals.

- ✓ Realization of Human values.
- ✓ Sense of Social service.
- ✓ Responsible and dutiful citizen.
- ✓ Critical Temper
- ✓ Creative Ability.

Program Specific Outcomes of UG (Sanskrit)

- ❖ Importance of ethics which needs noble life
- ❖ Importance of subject Sanskrit & its Branches.
- ❖ Various aspects of Sanskrit literature with a process to reach methods & giving new mode and direction.
- ❖ To make an attempt in different area and theory such as vocabulary and vice versa
- ❖ Literature more in a border areas then confined to subject.
- ❖ To know about Sanskrit literature its roots cause perspectives and methods.
- ❖ Elaborating and understanding its philosophical methods.
- ❖ Evaluating the concept of Sanskrit from past to present and making the society more closely through literature.

Course Outcomes

First Year – Semester I

Optional Sanskrit (Paper I)

CO1 To implant the love for languages especially for Sanskrit in students

CO2 To study culture and tradition through mythology

CO3 To make them understand the beauty of Sanskrit Language and Literature through modern poetry Vunnathi by Dr. D.Narasimha Deeskhit (Bharathi Bushanam)

CO4 To enhance the knowledge of sentence formation and learn concepts of grammar and language

First Year – Semester – II Optional Sanskrit (Paper II)

CO1 To learn about Kavyas of ancient literature

CO2 To Enhance their Communicative Skills and make them learn moral values from Neethi Kavyam

CO3 To make them understand the modern agriculture system and motivate students to learn the importance of agriculture as profession

CO4 To enhance the knowledge of sentence formation and learn concepts of grammar and language

Second Year Semester – III

Optional Sanskrit (Paper III)

CO1 To make them feel the relevance of Sanskrit in the contemporary world.

CO2 To learn roots of ancient language

CO3 To make them learn about the history of poets of ancient Sanskrit literature

CO4 To learn Sanskrit Alankaram that is a figure of speech which means ornaments or embellishments which are used to enhance the beauty of the poems.



HINDU COLLEGE, GUNTUR

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DEPARTMENT OF TELUGU

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016

PROGRAMME: THREE-YEAR B.A. /B.Sc./B. Com. TELUGU

Program Outcomes

Program Outcome of Telugu Course in Under Graduation

Student seeking admission for UG Program is expected to imbue with following quality which helps them in their future life to achieve the expected Goals.

- ✓ Realization of Human values.
- ✓ Sense of Social service.
- ✓ Responsible and dutiful citizen.
- ✓ Critical Temper
- ✓ Creative Ability.

Program Specific Outcomes of UG (Telugu)

- ❖ Importance of ethics which needs noble life
- ❖ Importance of subject Telugu & its Branches.
- ❖ Various aspects of Telugu literature with a process to reach methods & giving new mode and direction.
- ❖ To make an attempt in different area and theory such as vocabulary and vice versa
- ❖ Literature more in a border areas then confined to subject.
- ❖ To know about Telugu literature its roots cause perspectives and methods.
- ❖ Elaborating and understanding its philosophical methods.
- ❖ Evaluating the concept of Telugu from past to present and making the society more closely through literature.

Course Outcomes

First Year – Semester I

Optional Telugu (Paper I)

Prachina Telugu Kavita

Learning Telugu in B.A., B.Com., and B.Sc., will make the students to learn about the archaic uses in ancient literature.

ప్రాచీన తెలుగు కవిత్వం

ప్రాచీన తెలుగు సాహిత్యం, వ్యాకరణం, నేర్చుకోవటం వలన, సాహిత్య ప్రయోజనం, ప్రాముఖ్యత గురించి విద్యార్థులకు మంచి అవగాహన కలుగుతుంది.

First Year – Semester II
Optional Telugu (Paper II)
Adhunika Telugu Kavitwam

Learning Telugu poetry, novels and stories in B.A., B.Com., and B.Sc., will make the students to improve their writing skills.

ఆధునిక తెలుగు కవితవ్యం

కవిత, కథానిక, నవల వంటి ఆధునిక సాహిత్యం అధ్యయనం చేయటం ద్వారా విద్యార్థులలో రచనా నైపుణ్యం అభివృద్ధి చెందుతుంది.

Second Year – Semester III
Optional Telugu (Paper III)
Srujanatmaka rachana

Learning media and broadcasting and journalism will make students to develop creativity in literature and social responsibility.

సృజనాత్మక రచన

ప్రసార మాధ్యమాలు, జర్నలిజం వంటివి అభ్యసించడం వలన విద్యార్థులకు సృజనాత్మక శక్తి పెరిగి వారిలో ఆసక్తిని రేకెత్తించవచ్చును

Second Year – Semester IV
Optional Telugu (Paper IIV)
Leadership

Studying this course will make students to improve leadership qualities and skills in them which are useful for development of nation.

లీడర్షిప్

విద్యార్థులలో ఈ కోర్సు ద్వారా నాయకత్వ లక్షణాలు పెంపొందుతాయి. భవిష్యత్తులో మంచి నాయకత్వ లక్షణాలతో దేశ పురోభివృద్ధి సాధించవచ్చును.



HINDU COLLEGE, GUNTUR

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DEPARTMENT OF HINDI UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015–2016

Program Specific Outcomes B.A. B.SC. B.COM. (HINDI)

1. To Understand the basic concepts and subject of Hindi & its origin
2. To make a attempt in different area and theory such as vocabulary and vice versa
3. Elaborating and understanding its philosophical methods of Hindi Literature.
4. Evaluating the concept of Hindi from past to present and making the society more closely through literature.

Course Outcomes

Class: B.A., B.SC., B.COM. (Semester 1)- Paper1

On completion of the course students are able to

1. To able to understand 'Sahithya Ki Mahatha' by Mahaveer Prasad Dwivedi, 'Mithratha' by Acharya Ram Chandra Shukl, 'Wahi ki Wahi Baath' by Ramesh Bakshi.
2. To able to understand short stories 'Mukthi Dhan' by Mushi Prem Chand, 'Usne Kaha Tha' by Chandra Sekhar Guleri, 'Puraskar' by Jaya Shankar Prasad.
3. To able to understand the introduction concepts of Hindi Grammar, translation, Letter writing.

Class: B.A., B.SC., B.COM. (Semester 2)- Paper 2

On completion of the course students are able to

1. To able to understand ' Bharath Ek Hai' by Ramadhari Singh Dinakar, 'Beymani ki Parath' by Harshankar Parsai, HIV/AIDS by Dr. Prakash Baathal Bande.
2. To able to understand short stories 'Bukh Hadthal' by Balashowry Reddy, 'Parmathma ka Kutha' by Mohan rakesh 'Vaapasi' by Usha Priyam Vadha.
3. To able to understand the introduction concepts of Hindi Grammar, translation, Letter writing.

Class: B.A., B.SC., B.COM. (Semester 3)- Paper 3

On completion of the course students are able to

1. To able to understand 'Saakhi' by Kabirdas, 'Rahim Ke Dohe' by Rahim
2. To able to understand 'Mathru Bhoomi' by Mythili Saran Gupt 'Thodthi Pathar' by Suryakanth Tripathi Nirala, 'Oh Deepak! Bhujne ke pehle' by Adeswara Rao
3. To able to understand the basis of classification of Hindi Literature, Names given to each period, Features of 1. Adikal 2. Bhaktikal 3. Reetikal 4. Adunikal in of context
4. To able to understand General Essays.
5. To able to understand the importance of translation
6. To able to understand various forms of Functional Hindi language.

Class: B.A., B.SC., B.COM. (Semester 4)

On completion of the course students are able to

Leadership Education

Students will come to know about the Leadership qualities in B.A., B.Com., B.Sc.

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SCIENCE SYLLBUS



HINDU COLLEGE, GUNTUR

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DEPARTMENT OF BOTANY

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 and 2020-2021

PROGRAMME: THREE-YEAR B.Sc. BOTANY

Programme outcomes

PO1. Understanding of Plant Diversity and its importance in the maintenance of ecological balance.

PO2. Students learn to carry out practical work, in the field and in the laboratory, interpreting plant morphology and anatomy, Plant identification, Vegetation analysis techniques.

PO3. Apply the knowledge of basic science, life sciences and fundamental process of plants.

PO4. Apply modern techniques and instruments for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological studies of plants with an understanding of the applications in human life.

PO5. Apply the knowledge gained from the studies for the upliftment of society via addressing health, environmental issues, food scarcity etc.

PO6. Acquiring the knowledge on ethanobotany, Medicinal plants and Pharmacology.

Programme Specific Outcomes (PSO's)

PSO1. Students will be able to know Microbial diversity and their use in human welfare

PSO2. Students will be able to compare and contrast the characteristics of the different groups of plants such as algae, fungi, bryophytes, pteridophytes, gymnosperms and angiosperms

PSO3. Identification and labelling plants, so as to recognize their position in the classification systems and at phylogenetic level.

PSO4. Understanding plant internal organization. Evaluating the physiological activities of plant.

PSO5. Students will be able to explain how Plants function at gene, genome, cellular and tissue level,

PSO6. Students will be able to relate the physical features of the environment to the structure of populations, communities, ecosystems, pollution and biodiversity.

PSO7. Students will be able to conceive the idea of plant breeding programme, transgenic plants and micropropagation.

Course Outcome (CO's)

I B.Sc - SEMESTER- I: BOTANY

Paper- I: **Microbial Diversity, Algae and Fungi**

Total hours of teaching 60hrs @ 4 hrs per week

- CO1.** Explain origin of life on the earth. Prokaryotic organisms and can categorize them
- CO2.** Illustrate diversity among the viruses life cycle, diseases and transmission.
- CO3.** Understanding Bacterial cell nutrition reproduction and economic importance
- CO4.** Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles.
- CO5.** Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.

I B. Sc - SEMESTER- II: BOTANY

Paper –II: **Diversity of Archaeonates & Plant Anatomy**

Total hours of teaching 60hrs @ 4 hrs per week

- CO1.** Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat.
- CO2.** To understand the first true land plants and the stellar evolution.
- CO3.** Evaluating the first seed plants.
- CO4.** Understanding internal organization of plants and distribution different activities among different tissues.
- CO5.** Study of local timbers of economic Importance.

II B. Sc - SEMESTER –III: BOTANY PAPER –III

Paper-III: **Plant Taxonomy and Embryology**

Total hours of teaching 60hrs @ 4 hrs per week

- CO1.** Critically understand various taxonomical aids for identification of Angiosperms.
- CO2.** Understanding different classifications and knowing phylogenetic system
- CO3.** Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families.

CO4.Evaluating the reproductive aspects of plants and knowing process of embryogeny.

II B.Sc. BOTANY, SEMESTER- IV, Paper-IV

PAPER –IV: Plant Physiology and Metabolism

Total hours of teaching 60hrs @ 4 hrs per week.

CO1.Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.

CO2. Evaluate the role of minerals in plant nutrition and their deficiency symptoms.

CO3. Interpret the role of enzymes in plant metabolism. Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.

CO4.Analyze the biochemical reactions in biological oxidation and lipid metabolisms.

CO5.Evaluate the physiological factors that regulate growth and development in plants. Examine the role of light on flowering.

III B. Sc - SEMESTER- V: BOTANY PAPER – V

Paper-V: Cell Biology, Genetics and Plant Breeding

Total hours of teaching 60 hrs @ 3 hrs per week

CO1. Distinguish prokaryotic and eukaryotic cells and design the model of a cell. Explain the organization of a eukaryotic chromosome

CO2.The structure of genetic material. Evaluate the structure, function and regulation of genetic material.

CO3. Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings.

CO4. Explain the procedures of selection and hybridization for improvement of crops

CO5. Understand the application of principles and modern techniques in plant breeding.

III B. Sc - SEMESTER- V: BOTANY

PAPER-VI: **PLANT ECOLOGY & PHYTOGEOGRAPHY**

Total hours of teaching 60 hrs @ 3 hrs per week.

CO1. Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.

CO2. Ecosystem, Concept and components, Productivity. Biogeochemical cycles

CO3. Appraise various qualitative and quantitative parameters to study the population and community ecology.

CO4. Locate different phytogeographical regions of the world and India and can analyze their floristic wealth.

CO5. Correlate the importance of biodiversity and consequences due to its loss. Enlist the endemic/endangered flora and fauna from biodiversity hot spots in India and assess strategies for their conservation.

III B. Sc – BOTANY, SEMESTER- VI

PAPER – VII – ELECTIVE

Paper VII-(C): **Plant tissue culture and its biotechnological applications**

Total hours of teaching 60hrs @ 3hrs per week.

CO1. Understanding Tissue culture research - basic principles organ culture. somatic embryogenesis.

CO2. Analyzing endosperm, Embryo -culture technique. Production of secondary metabolites. Cryopreservation; Germ plasm conservation.

CO3. Understanding recombinant DNA technology.

CO4. Studying methods of gene transfer.

CO5. Applications of Plant Genetic Engineering – crop improvement, transgenic improved agronomic traits, improved horticultural varieties.

CLUSTER ELECTIVES (Cluster–A)

III B.Sc.: BOTANY SEMESTER- VI

Paper VIII, CLUSTER ELECTIVE, Cluster-A,

Paper VIII-A-: **PLANT DIVERSITY AND HUMAN WELFARE**

Total hours of teaching 60hrs @ 3hrs per week.

- CO1.** Understanding Plant diversity at the ecosystem level and uses of biodiversity.
- CO2.** Discussing management of plant biodiversity: Organizations associated with biodiversity.
- CO3.** Studying Environmental Impact Assessment Solid and liquid waste management.
- CO4.** Social approaches to conservation, Biodiversity awareness programmes, Sustainable development.
- CO5.** Role of plants in relation to Human Welfare

III B. Sc – BOTANY, SEMESTER- VIII:

CLUSTER ELECTIVE -A

Paper VIII-A-2: **ETHNOBOTANY AND MEDICINAL BOTANY**

Total hours of teaching 60hrs @ 3hrs per week.

- CO1** The relevance of ethnobotany in the present context Major and minor ethnic groups of India, and their life styles.
- CO2** Significance of the medicinal plants in ethnobotanical practices.
- CO3.** Awareness over Biopiracy, Intellectual Property Rights and Traditional Knowledge.
- CO4.** Creating interest on Ayurveda Siddha Unani.
- CO5.** Biosphere reserves, sacred groves, National Parks, Botanical Gardens.

III B. Sc – BOTANY, SEMESTER- VIII

CLUSTER ELECTIVE, Paper VIII-A-3

Paper VIII-A-3: **Pharmacognosy and Phytochemistry**

Total hours of teaching 60hrs @ 3hrs per week.

CO1. Evaluating the importance of drugs – Pharmacology.

CO2. Organoleptic and microscopic studies with reference to nature of active principles and common adulterants of Drugs.

CO3 Understanding the primary and secondary metabolites and their differences.

CO4. Inculcating the interest on Phytochemistry, Biosynthesis and sources of drugs.

CO5. Developing knowledge on Vaccines, toxins and toxoids, antitoxins, immune globulins, antiserums, Vitamins, Antibiotics

Hindu College, Guntur

(Re-accredited by NAAC as Grade 'A')

Under CBSC : Framework with effect from 2015 - 2016 and 2020 - 2021

Programme : 3 year B.Sc. Zoology

Programme outcomes:

PO1- Students gain knowledge and skill in the fundamentals of animal Sciences, understands the complex interactions among various living organisms.

PO2- Apply the knowledge of cell structure, its function in control of various metabolic functions of organisms.

PO3- Analyse the complex interactions among the various animals of different phyla their distribution and their relationship with the environment.

PO4- Understands the complex evolutionary process and behaviour of animals.

PO5- Correlate the physiological process of animals and relationship of organ systems.

PO6- Understands about various concepts of genetics and its importance in human health.

PO7- Gain knowledge of diseases to improve personal and public health.

Programme specific outcomes: BSc Zoology

PSO1- Acquire knowledge on the various aspects of Life sciences, Cell biology, Genetics, Physiology, Developmental biology, Animal diversity and Applied Zoology.

PSO2- Understand the applications biological Sciences in Biotechnology, Aquaculture, Poultry, Dairy and Vermiculture.

PSO3- Understand good laboratory practices and safety, carry out environmental techniques and methods of physiology, cell biology, Genetics, biotechnology and aquaculture.

PSO4- The students gained the knowledge to use modern sophisticated equipments and tools.

PSO5- Recognize the scientific facts behind natural phenomena.

Course outcomes: BSc Zoology

Course: semester- 1- Animal diversity of invertebrates (Theory):

CO1- The student will be able to understand, classify and identity of the diversity of invertebrates.

CO2- The student will be able to understand the morphology, habitat and systematic position of various animals.

CO3- The student will be able to understand the anatomy of various organ systems of invertebrates.

CO4- The student will be able to know about the important Protozoan and helminth parasites.

CO5- The students will be able to know about some important beneficial non-chordates to mankind.

CO6- Came to know about the economic importance of insects and other invertebrates.

Semester- 1 (practicals)

Course outcome lab: Animal diversity of invertebrates

CO1- The student will be able to know about the different invertebrate specimens.

CO2- Understand identification of different invertebrate specimens.

CO3- The student come to know about the external morphology of different specimens.

CO4- The student will be able to understand the anatomy of invertebrate animals by dissections.

Semester- 2 :(Theory)

Course outcomes: Biology of Chordates

CO1-The student will be able to understand the diversity of chordates.

CO2-The student came to know about the different classes of chordates and their salient features.

CO3- The student will be able to understand the external morphology and internal anatomy of different chordates.

CO4-Came to know the classifications and systematic positions of different chordates.

CO5-Understand mammals with specific structural adaptations.

CO6- Understand the evolutionary relationship of different phyla from protochordates to mammals.

Semester - 2 (Practicals)

Course outcomes (lab):

CO1- Understand the different chordates and their external features.

CO2- Came to identify the different classes of chordates.

CO3- Understand the anatomy of chordates by dissections.

CO4- Understand the unique features of higher chordates.

Semester - 3: (Theory)

Course outcomes: Cell biology, Genetics and Evolution.

CO1- Understand the structural and functional aspects of basic unit of life i.e.,cell.

CO2- Came to know about the difference between prokaryotic and Eukaryotic cells.

CO3-Understand the Mendel laws, mendelian inheritance and non mendelian inheritance.

CO4- Understand the sex linked inheritance.

CO5- Gain knowledge about human Karyotyping.

CO6- Gain knowledge about linkage and crossing over.

CO7- Came to know about various theories of evolution.

CO8- Understand the speciation and isolation mechanisms.

Semester - 3: (practicals)

Course outcomes: lab

CO1- Came to know about cell division phases of mitosis and meiosis.

CO2- Gain knowledge about various genetic disorders in human beings by analysis of Karyotype.

CO3- Understand the homologous and analogous organs.

CO4- Came to know about the fossils.

Semester- 4:(Theory)

Course outcomes: Physiology, Embryology and Ecology.

CO1- Attained the knowledge of digestion, respiration, circulation, excretion, nerve impulse propagation and muscle contraction and mechanism of these organ systems.

CO2- Understand the hormonal control of reproduction in human beings.

CO3- Gain the knowledge about endocrine system.

CO4- Understand the various aspects of development in animals.

CO5- Came to know about gametogenesis, types of eggs and foetal membranes in animals.

CO6- Understand the cleavage patterns and physiology of placenta.

CO7- Came to know about the biogeochemical cycles, biotic factors of environment and intraspecific relationships of animals.

CO8- Acquired knowledge of Ecosystem, food chains and ecological pyramids.

CO9- Imparted knowledge of community ecology, Ecological successions and population ecology.

Semester - 4: (practicals)

Course outcomes: lab- Animal physiology, Embryology and Ecology.

CO1- Skill development for the observation of stages in the development of animals.

CO2- Gain knowledge of qualitative analysis of carbohydrates, proteins and fats.

CO3- Attained knowledge of qualitative analysis of Ammonia, Urea and Uric acid.

CO4- Analysed the physico-chemical nature of water through estimation of its chemical compounds.

Semester 5 (Theory):

Course outcomes- Biotechnology:

CO1- Gain the knowledge about the history and scope of biotechnology.

CO2- Understand the r-DNA technology.

CO3- Came to know about the vectors and enzymes used in r-DNA technology.

CO4- Attained the knowledge of different blotting techniques.

CO5- Understand the applications of stem cell and gene therapy.

CO6- Understood the different fermentation processes.

CO7- Gain the knowledge about cell culture practices.

CO8- Came to know about transgenic animals and their significance to mankind.

Semester 5 (Practicals):

Course outcomes- Lab (Biotechnology)

CO1- Gain knowledge of blotting techniques.

CO2- Came to know about the isolation of DNA from cells.

CO3- Understand the techniques of Electrophoresis and PCR.

CO4- Understand the working principles and applications of instruments in biotechnology lab.

Semester 5 (Theory):

Course outcomes: Animal husbandry

CO1- Understand the dairy and poultry industries.

CO2- Understand the various techniques and methods of dairy and poultry industries.

CO3- Came to know about various breeds of cattle and fowl.

CO4- Understand the dairy and poultry management methods.

CO5- Gain knowledge about various diseases of cattle and Fowls.

Semester 5 (Practicals):

Course outcomes - Lab: (Animal husbandry)

CO1- Students will be able to understand the identification of various breeds of cattle and fowl.

CO2- Understand the various diseases of fowl.

CO3- Came to understand the various dairy and Poultry Management practices by field visits.

CO4- Gain the knowledge about the maintenance of records in dairy and poultry Industries or farms.

Semester- 6 (Theory):

Course outcomes : Immunology

CO1- Understand the evolution of immunological perspective.

CO2- Came to know the fundamental concepts of innate and adaptive immunity.

CO3- Understand the structure and functions of antigens and antibodies.

CO4- Gain knowledge of MHC molecules, cytokines and vaccines.

CO5- Understand the various types of hypersensitivity reactions.

Course outcomes: lab- Immunology

CO1- Identify the sections of various lymphoid organs.

CO2- Came to know difference between primary and secondary lymphoid organs.

CO3- Gain knowledge about different test used in immunological studies.

Semester - 6

Course outcomes- Aquaculture cluster

CO1- Mention the various cultivable fishes, Prawns, lobsters and oysters.

CO2- Understand the various culture practices used for fish farming.

CO3- Came to know about various ponds used for fish culture.

CO4- Illustrate the preparation and management of fish culture ponds.

CO5- Understand the management of water, feed, soil and diseases in culture ponds.

CO6- Came to know about the fish genetics.

CO7- Understand the methods of packaging and transport of fish and brood fish.

CO8- Gain the knowledge about fish harvesting, preservation and processing.

CO9- Understand the fish marketing practices.

Course outcomes: lab - aquaculture

CO1- Identify the different cultivable fishes and other aquatic organisms.

CO2- Identify the different natural food organisms.

CO3- Estimate the different biotic factors of water bodies.

CO4- Gain knowledge about research methodology and skills of problem solving methods.



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UNDER CBCS SAME FRAME WORK WITH AFFICT FROM 2015-2016

AND 2020 – 2021

PROGRAMME : THREE – YEAR B.Sc. CHEMISTRY

B.Sc., First Year Chemistry

Semester-I

Paper-I (Inorganic & Organic Chemistry)

Course Outcomes

Upon completion of the course students can be able to:

By the completion of the course the students can be able to:

Easily identify the structure and properties of different elements.

Understand the applications of various inorganic substances in different industries.

Appreciate the general trends in the Chemistry of elements.

Describe the trends in the physical and chemical properties of group 13 to group 17 elements.

Know the Chemistry of some important compounds of Boron, Carbon, Silicone etc.

List the important uses of organo metallic compounds used in manufacturing of various products that are used in daily life.

Identify and judge the structure, type of reaction, mechanism and chemical behavior of an organic compound during its transformation from reactants to products.

Structural theory is the important topic in the organic chemistry which provides a strong basic knowledge for the students that helps in their further studies.

The study of benzene helps the students to identify the reason for the aromaticity of various organic compounds that are used in the manufacturing of many products.

The overall syllabus is very much useful and will be a knowledge bridge for a students for their higher studies.

Semester – II

Paper –II (Inorganic, Organic, Physical & General Chemistry)

Course Outcomes

Upon completion of the course students can be able to:

Learn about various elements in the periodic table that are present in the body, and particularly various metals that are used and manufactured in daily life.

Understand the formation of bonds and interactions between the atoms, molecules, ions crystals and other stable substances that are used in attaining the best knowledge about feature projects like quantum mechanics.

Rationalize the existence of compounds and properties, structures and uses of various molecules.

Stereochemistry is useful in understanding the spatial arrangement of atoms that determine the structure of a compound which is fundamental study all the concepts of organic chemistry.

Gain the knowledge about various synthetic techniques and synthesized products that helps a lot while working in manufacturing companies.

Learn about various techniques for the conversion of different states of a substance (Liquefaction of gases, condensation, distillation etc.,) that are used in daily life .

Identify a type of reaction involving in the formation of a product .

The practical knowledge is very essential for the identification of various ions and elements.

B.Sc., Second Year Chemistry

Semester III

Paper – III (ORGANIC CHEMISTRY & SPECTROSCOPY)

Course Outcomes

Upon completion of the course students can be able to:

Organic chemistry, a part in II B.Sc Semester III syllabus is very useful in Industry, research and Development work for students

In industry level mono, di and unsaturated carboxylic acids can be easily prepared by knowing about the active methylene compounds

Studying about oxidizing and reducing Reagents, reactions and their mechanisms are very useful for the establishment of small industries and also for their self employment

Study of d block elements is useful in determination of colored complex formation in Dye industry and formation alloys which are essential for the manufacture of utensils and vessels that are used in daily life

Various theories studied by the students involved in bonding in metals is very useful in gaining knowledge about thermal and electrical conductance of metals. This knowledge of conductors, insulators and semi conductors will help the students in building their career in battery industry

B.Sc., Second Year Chemistry
Semester IV

Paper –IV (INORGANIC, ORGANIC AND PHYSICAL CHEMISTRY)

Course Outcomes

Upon completion of the course students can be able to:

On learning Electro Chemistry the student is able to generate an Electric Current in an Electro Chemical Cell. This is the basis of all batteries and Fuel Cells.

The student has command on Dilute Solutions, Elevation of B.P. & depression of Freezing point, osmotic pressure, colligative properties Phase rule, components and degrees of freedom, eutectic point, Pb-Ag system, NaCl system and freezing mixtures.

Spectroscopy, electromagnetic spectrum, Electronic, IR spectroscopies, selection rules applications and NMR spectroscopy, chemical shift, spin-spin coupling.

B.Sc., Third Year Chemistry
Semester V

Paper: V (INORGANIC, PHYSICAL AND ORGANIC CHEMISTRY)

Course Outcomes

Upon completion of the course students can be able to:

Unit-I: Complex compounds:

Coordination Chemistry is a comprehensive and insightful discussion of one of the primary fields of study in Inorganic Chemistry for both undergraduate and non-specialist readers.

Coordination compounds are found in living systems and have many uses in the home, in industry, and medicine.

Coordination compounds play many roles in the animals and plants. They are essential in the storage and transport of oxygen, as electron transfer agent, as catalysts, and in photosynthesis.

Because of its central function as an oxygen carrier for metabolic processes, Hemoglobin is probably the most studied of all the proteins. The interaction of transition metal ions with biological molecules provides one of the most fascinating areas of coordination chemistry.

Coordination chemistry refers to a branch of chemistry, and its research results are widely used in industry and people's daily life.

Unit-II: Spectral properties of metal complexes: Outline the basic premise of crystal field theory (CFT).

Identify molecular geometries associated with various d-orbital splitting patterns, predict electron configurations of split d orbitals for selected transition metal atoms or ions.

Explain spectral and magnetic properties in terms of CFT concepts. This concept has more scope in research area.

Unit-III: Stability of metal complexes:

A stability constant (formation constant, binding constant) is an equilibrium constant for the formation of a complex in solution.

It is a measure of the strength of the interaction between the reagents that come together to form the complex.

Mixed metal complexes play vital role in various biological systems and in different fields of chemistry. Hence, the stability and reactivity of these complexes has been an active field of research.

Unit-IV: Inorganic reaction mechanism:

This topic provides a general background as a course module in the area of inorganic reaction mechanisms, suitable for advanced undergraduate and postgraduate study and/or research.

The topic has important research applications in the metallurgical industry and is of interest in the science of biochemistry, biology, organic, inorganic and bioinorganic chemistry.

In addition to coverage of substitution reactions in four-, five- and six-coordinate complexes, the topic contains further chapters devoted to isomerization and racemization reactions, to the general field of redox reactions, and to the reactions of coordinated ligands. It is relevant in other fields such as organic, bioinorganic and biological chemistry, providing a bridge to organic reaction mechanisms. The topic also contains a chapter on the kinetic background to the subject with many illustrative examples which should prove useful to those beginning research.

Unit-V: HSAB:

Hard and Soft Acids and Bases (HSAB) Theory is a qualitative concept introduced by Ralph Pearson to explain the stability of metal complexes and the mechanisms of their reactions.

HSAB principle is used to predict the outcome of few of the reactions. We can predict whether a reaction proceeds to the right or left based on soft or hard Acid/base interactions. Biochemical significance of the hard and soft acids and bases principle

Unit-VI: Bio inorganic chemistry:

Inorganic chemists study reactions of metals and main group elements. Their research involves synthesis of new compounds and materials. After characterizing the compounds, they apply them to problems such as human illness, pollution, catalysis, and new electronic and structural materials.

As they do research, they make discoveries in bioinorganic, organometallic, materials, and coordination chemistry.

The areas of inorganic chemistry, bioinorganic chemistry, and materials can be applied to separations, molecular sensors, catalysts, and nanomaterial's.

Organic chemistry:

Unit-I: Nitrogen compounds:

Amines play a vital role in medicinal chemistry. As our body is having a lot of amino acids, these amines help in the regulation of our body. It is also believed that, vitamins were named keeping vital-amines in mind.

Similarly to produce several synthetic dyes, pigments the amines are used.

Therefore, the amines are very important in our everyday life.

The study of this topic to know the synthesis of other organic compounds.

Unit-II: Hetero cyclic compounds:

Heterocyclic compounds are presumably the largest class of organic compounds, obtaining great diversity in chemical and physical properties. Thus, heterocyclic found wide applicability in pharmacy, agrochemicals, electronics, etc.

To know this topic there is more work in research area for the synthesis of more Heterocyclic compounds.

Semester: V

Paper: VI (INORGANIC, ORGANIC AND PHYSICAL CHEMISTRY)

Course Outcomes

Upon completion of the course students can be able to:

The physical chemistry has an important role in industrial preparation of various chemical products. So, students should learn important theories in physical chemistry.

Most of the laws of physical chemistry such as chemical equilibrium, law of thermochemistry, distribution law, etc. can be deduced from law of thermodynamics. Moreover, it can predict the feasibility of a process and extent of yield of the product obtain. Hence a graduate student must learn laws of thermodynamics to work in industries.

Also the topic chemical kinetics deals with the measurement of rates of reactions proceeding under given conditions, hence study of this topic help them to locate favorable conditions to speed up a reaction, there by getting the products in a short time.

Now a days solar energy is an important tool in our regular life. The topic photochemistry tells how the radiations of light absorbed by the substances and reemitted in various photo chemical process. By studying the laws of photochemistry a number of applications of photochemical process can be learnt

which are useful in daily life such as fluorescence, phosphorescence, photosensitization etc.

In organic chemistry carbohydrates constitute one of the most important group of natural products. By their study of classification, structural elucidation, properties, and their interconversions are useful to understand about important foodstuffs and other forms of carbohydrates.

Amino acids are another important natural products as they are building units of other natural products like enzymes, peptides, proteins etc. their study is necessary to understand structure of various substances present in living organisms.

The study of material science is very important to study about chemistry of Nano materials which have several applications in daily life.

III B.Sc. Chemistry

Semester- VI

Elective Paper – VII – (B) : (Environmental Chemistry)

Course Outcomes

Upon completion of the course students can be able to:

Upon successful completion of the course the student will be able to:

Demonstrate knowledge of chemical and biochemical principles of fundamental environmental Processes in air, water, and soil.

Recognize different types of toxic substances & responses and analyze toxicological information.

Apply basic chemical concepts to analyse chemical processes involved in different environmental problems (air, water & soil).

Describe water purification and waste treatment processes and the practical chemistry involved.

Describe causes and effects of environmental pollution by energy industry and discuss some mitigation strategies.

Explain energy crisis and different aspects of sustainability.

Discuss local and global environmental issues based on the knowledge gained throughout the course.

8. Develop an understanding about what biodiversity is and what it means locally, nationally, and globally.

9. Investigate local biodiversity, exploring the past and present as well as predicting the future biodiversity of your locale.

10. Conduct a biodiversity audit of the school grounds.

11. Create an action plan to address biodiversity on the school grounds and/or in the surrounding community.
12. Collect, analyze, interpret, and communicate information related to biodiversity.
13. Monitor and evaluate progress toward goals related to increasing biodiversity on school grounds and/or the surrounding community.
14. Communicate about the importance biodiversity plays in the health of our planet to a variety of audiences, including other students, parents, and the local community.

B.Sc., Third Year Chemistry

Cluster Elective – I

Analytical and Physical

Semester - VI

Paper –VIII A1 (Polymer Chemistry)

Course Outcomes

Upon completion of the course students can be able to:

Recognize different polymeric materials commonly seen in our environment and their applications.

Explain the general reaction course and reaction mechanism of free radical, ionic and Zeigler – Natta Polymerization.

Calculate the degree of polymerization and molecular weight of polymers by Viscometry, Osmometry, and light scattering methods.

Determine glass transition temperature and various factors effecting it. Also the free volume theory and WLF equation is learnt.

Describe the effect of addition of various polymer additives to enhance the properties of polymeric materials.

Thanking you

Department of Chemistry



HINDU COLLEGE, GUNTUR

(Re-accredited by NAAC as Grade 'A' with CGPA 3.07)

Main Road, Opp. Sri Venkateswara Vignam Mandir, Guntur

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016

PROGRAMME: THREE-YEAR B.A. /B.Sc. MATHEMATICS

Programme outcomes

PO1: Scientific temper will be developed in Students.

PO2: Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in the science stream.

PO3: Students will become employable; they will be eligible for career opportunities in Industry, or will be able to opt for entrepreneurship.

PO4: Students will possess basic subject knowledge required for higher studies, professional and

applied courses like Actuaries, Management Studies, Law etc.

PO5: Students will be aware of and able to develop solution oriented approach towards various

Social and Environmental issues.

Programme specific outcomes

PSO1: A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations , terminology.

PSO2: A student should get adequate exposure to global and local concerns that explore them many aspects of mathematical sciences.

PSO3 : Student is equipped with mathematical modeling ability, problem solving skills, creative talent and power of communication necessary for various kinds of employment.

PSO4: Student should be able to apply their skills and knowledge that is translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.

PSO5: Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

Course outcomes

Course : Semester I - Ordinary Differential Equations

CO1: To learn methods to solve linear differential equation with constant and variable coefficients.

CO2: To learn methods for solving non-homogenous differential equation.

CO3: To learn method of variation of parameter to solve linear differential equations.

CO4: To solve first order and higher degree differential equations.

CO5: To solve orthogonal trajectories

Course: Semester II – 3D Geometry

CO1: To learn methods of finding various equations of planes and properties and get the knowledge of planes.

CO2. To learn basic idea of lines, sphere and cones.

CO3. To understand the properties of planes, lines, spheres and cones.

CO4. To express the problems geometrically and then to get the solution.

Course : Semester III - Group Theory

CO1: To learn fundamental properties and mathematical tools such as closure, identity, inverse and generators.

CO2: To study algebraic structure ‘Groups’ in detail which is useful in study of Rings, Modules, Algebraic topology, Analysis

CO3: To enhance abstract thinking of students.

CO4: To learn to compare two different algebraic structures and study transfer of properties in- between these structures through homomorphism and isomorphism.

Course: Semester IV - Real Analysis

CO1: To learn basic techniques and examples in analysis to be well prepared for courses like Topology, Measure theory and Functional analysis.

CO2: To study various types of sets and relations, and concept of countable and uncountable.. CO3: To study notion of lub and glb which helps to learn integrations which helps to find area under any functions.

CO4: To apply notion of derivative in mean value theorem and also in higher order derivatives which arise in all applied sciences

CO5 To study concept of sequence and series and hence find sum of infinite terms with different Methods.

CO6 To study theory and applications of Rolle’s theorem, Cauchy mean value theorem and Lagrange’s mean value theorem and Taylor series.

CO7 To learn Riemann Integral and its properties in detail, leading to fundamental theorem of calculus and Mean value theorems.

CO8: To study different tests for solving improper integrals of first and second kind.

CO9: To study pointwise and uniform convergence of sequences and series of functions.

Course: Sem V - Linear Algebra

CO1: To learn the importance of vector spaces, basis and dimension and linear transformation in Physics, Engineering, Social sciences and various branches of Mathematics.

CO2: To learn to find Eigen values and Eigen vectors of a matrix which is used in the study of vibrations, chemical reactions and geometry.

CO3: To learn Inner Product spaces and Gram-Schmidt process of orthogonalization. CO4: To get well equipped with Mathematical Modelling abilities.

Course : Semester V - Ring Theory

CO1: To study the algebraic structure Ring in detail through various examples. CO2: To learn the construction of field of quotients of an integral domain. CO3: To study the Rings of polynomials and its factorization over a field.

CO4: To study the notion of ideals and factor rings with examples.

CO5: To study Unique Factorization domain, Euclidean Domain and related results

Course : Semester V - Vector Calculus

CO1: Learn conceptual variations while advancing from one variable to several variables in calculus.

CO2: Vector differentiation and problems.

CO3: Inter-relationship amongst the line integral, double and triple integral formulations.

CO4: Applications of multivariable calculus tools and importance of Green, Gauss and Stokes' theorems in other branches of mathematics.

Course: Semester VI - Numerical Analysis

CO1: To learn to apply the various numerical techniques for solving real life problems.

CO2: The problems which cannot be solved by usual formulae and methods can be solved approximately by using numerical techniques.

CO3: To fit curve to the data by using 5 different methods of interpolation as well as extrapolation.

CO4: To find approximate solutions to difficult differential equations occurring in engineering sciences.

Course: Semester – VI Project

CO1: Problem solving skills of students are enhanced.

CO2: Theoretical concepts are strengthened by solving maximum no. of problems

CO3: Due to one to one interaction with the teacher doubts of the students get cleared if any.

CO4 : Students learn how to apply mathematical concepts to practical and real life problems.

CO5: Interdisciplinary approach is developed.

Course: Semester VI – Laplace Transforms

CO1: To learn the evaluation of Laplace transform of different types of functions, their derivatives and integrations.

CO2: To learn the evaluation of Inverse Laplace transform of functions, their derivatives and integrations, and to learn application of Convolution theorem.

CO3: To learn to apply Laplace Transform to solve Ordinary Differential equations with constant coefficients.

CO4: To learn to evaluate the Fourier series of various even and odd functions

Course: Semester VI – Integral Transforms

CO1: Know about piecewise continuous functions, Dirac delta function, Laplace transforms and its properties. CO2: Solve ordinary differential equations using Laplace transforms.

CO3: Familiarise with Fourier transforms of functions, relation between Laplace and Fourier transforms.

CO4: Explain Parseval's identity and applications of Fourier transforms to boundary value problems.

CO5: Learn Fourier series, Bessel's inequality, term by term differentiation and integration of Fourier series.

Course: Semester VI – Advanced Numerical Analysis

CO1: To learn Least Square procedures of fitting to straight line, power function, parabola and exponential function.

CO2: To study concepts of numerical differentiation and working knowledge of problems with difference operators.

CO3: To learn notions of numerical integration and various methods of numerical integration

CO4: To solve system of linear equations by adopting numerical methods Gauss elimination, Gauss Jordan and LU decomposition methods.

CO5: To solve differential equations which can't be solved analytically by Picards, Modified Euler's, R K method.

Department of Mathematics

Programme Name BSc. Mathematics

Programme outcomes

PO1: Scientific temper will be developed in Students.

PO2: Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in the science stream.

PO3: Students will become employable; they will be eligible for career opportunities in Industry, or will be able to opt for entrepreneurship.

PO4: Students will possess basic subject knowledge required for higher studies, professional and applied courses like Management Studies, Law etc.

PO5: Students will be aware of and able to develop solution oriented approach towards various Social and Environmental issues.

Programme specific outcomes

PSO1: A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations , terminology.

PSO2: A student should get adequate exposure to global and local concerns that explore them many aspects of mathematical sciences.

PSO3 : Student is equipped with mathematical modeling ability, problem solving skills, creative talent and power of communication necessary for various kinds of employment.

PSO4: Student should be able to apply their skills and knowledge that is translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.

PSO5: Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

Course outcomes

F.Y.B.Sc.

Course: MT101:Algebra and Geometry

CO1: To learn divisibility of integers and congruence relations.

CO2: To learn operations on polynomials, finding GCD of two polynomials and roots of polynomials.

CO3: To learn basic matrix algebra and method to find solutions to system of linear equations. Also to learn eigenvalues and eigenvectors of matrix.

CO4: To learn analytical geometry of 2 and 3 dimensions which include study of conics, planes, lines, sphere, cone and cylinder.

Course: MT102: Calculus and Differential Equations

CO1: To learn basic properties of real numbers and its subsets which is backbone of Real Analysis.

CO2: To study functions in detail which is a fundamental structure in all sciences, and to be able to check continuity of a function.

CO3: To apply notion of derivative in mean value theorem and also in higher order derivatives which arise in all applied sciences

CO4: To be able to solve first order and first degree differential equations.

Course: MT103: Mathematics Practical

CO1: Problem solving skills of students are enhanced.

CO2: Theoretical concepts are strengthened by solving maximum no. of problems

CO3: Due to one to one interaction with the teacher doubts of the students get cleared if any.

CO4: Students learn how to apply mathematical concepts to practical and real life problems.

CO5: Interdisciplinary approach is developed.

S.Y.B.Sc.

Course: MT211 Multivariable Calculus I

CO1: To study functions and several variables.

CO2: To study the notion of Continuity and Differentiability of multivariate functions.

CO3: To find extreme values of multivariable functions using derivatives.

CO4: To learn evaluation of double and triple integration and its application to area and volume.

Course: MT212(B) Laplace Transform and Fourier series

CO1: To learn the evaluation of Laplace transform of different types of functions, their derivatives and integrations.

CO2: To learn the evaluation of Inverse Laplace transform of functions, their derivatives and integrations, and to learn application of Convolution theorem.

CO3: To learn to apply Laplace Transform to solve Ordinary Differential equations with constant coefficients.

CO4: To learn to evaluate the Fourier series of various even and odd functions.

Course: MT221 Linear Algebra

CO1: To learn the importance of linear transformation in Physics, Engineering, Social sciences and various branches of Mathematics.

CO2: To learn to find Eigen values and Eigen vectors of a matrix which is used in the study of vibrations, chemical reactions and geometry.

CO3: To learn Inner Product spaces and Gram-Schmidt process of orthogonalization.

CO4: To get well equipped with Mathematical Modelling abilities.

Course: MT222(B) Numerical Analysis

CO1: To learn to apply the various numerical techniques for solving real life problems.

CO2: The problems which cannot be solved by usual formulae and methods can be solved approximately by using numerical techniques.

CO3: To fit curve to the data by using 5 different methods of interpolation as well as extrapolation.

CO4: To find approximate solutions to difficult differential equations occurring in engineering sciences.

Course: MT223 Mathematics Practical

CO1: Problem solving skills of students are enhanced.

CO2: Theoretical concepts are strengthened by solving maximum no. of problems

CO3: Due to one to one interaction with the teacher doubts of the students get cleared if any.

CO4: Students learn how to apply mathematical concepts to practical and real life problems.

CO5: Interdisciplinary approach is developed.

T.Y.B.Sc.

Course: MT331 Metric Spaces

CO1: To equip students with basic mathematical tools such as open & close sets, continuity, connectedness, compactness which can be used to study general topology and real & complex analysis.

CO2: To enhance abstract thinking and visualization of students.

CO3: To generalize the notion of distance, convergent sequence and continuity of functions.

CO4: To increase problem solving ability by solving examples and counter-examples of various concepts involved.

Course: MT332 Real Analysis I

CO1: To learn basic techniques and examples in analysis to be well prepared for courses like Topology, Measure theory and Functional analysis.

CO2: To study various types of sets and relations, and concept of countable and uncountable..

CO3: To study concept of sequence and series and hence find sum of infinite terms with different methods.

CO4 To study notion of lub and glb which helps to learn integrations which helps to find area under any functions.:

Course : MT334 Group Theory

CO1: To learn fundamental properties and mathematical tools such as closure, identity, inverse and generators.

CO2: To study algebraic structure 'Groups' in detail which is useful in study of Rings, Modules, Algebraic topology, Analysis

CO3: To enhance abstract thinking of students.

CO4: To learn to compare two different algebraic structures and study transfer of properties in-between these structures through homomorphism and isomorphism

Course : MT335 Ordinary Differential Equations

CO1: To learn methods to solve linear differential equation with constant coefficients.

CO2: To learn methods for solving non-homogenous differential equation.

CO3: To learn power series solution method using ordinary and singular points.

CO4: To solve system of first order differential equations.

Course : MT337F Number Theory

CO1: In this course, students learn the properties of the set of integers in detail.

CO2: Students can find integer solutions to the system of equations which arises in real life problems.

CO3: Students study various theorems on primes and also learn congruence which are used in cryptography.

Course : MT337A Operations Research

CO1: Students learn conversion of real life problems into mathematical models which enhance their problem solving and decision making abilities.

CO2: Students learn to calculate optimal solution of models through graphical and iterative methods.

CO3: Students study transportation and assignment models and methods to solve them.

CO4: This helps them to get optimum solutions within the given constraints to problems arising in industry.

Course : MT341 Complex Analysis

CO1: To learn basic algebraic properties of complex numbers and limit and continuity of Complex functions.

CO2: To learn analytic functions and the C-R equations as its necessary and sufficient conditions.

CO3: To learn tools which are useful in finding integration of Complex valued functions.

CO4: To learn sequences and series of Complex valued functions.

CO5: To learn applications of residues and poles in integrals of complex functions.

Course : MT342 Real Analysis II

CO1: To learn Riemann Integral and its properties in detail, leading to fundamental theorem of calculus and Mean value theorems.

CO2: To study different tests for solving improper integrals of first and second kind.

CO3: To study pointwise and uniform convergence of sequences and series of functions.

Course : MT344 Ring Theory

CO1: To study the algebraic structure Ring in detail through various examples.

CO2: To learn the construction of field of quotients of an integral domain.

CO3: To study the Rings of polynomials and its factorization over a field.

CO4: To study the notion of ideals and factor rings with examples.

CO5: To study Unique Factorization domain, Euclidean Domain and related results

Course : MT345 Partial Differential Equations

CO1: To understand the concept of Ordinary differential Equations in more than two variables.

CO2: To learn the application of Ordinary differential Equations through method to find Orthogonal Trajectories.

CO3: Introduction of first order Partial Differential Equations.

CO4: Learn methods to solve first order Partial Differential Equations

Course : MT347D Graph theory

CO1: To introduce the concept of Graphs, which is an important tool for Mathematical Modelling

CO2: To study different types of graphs and operations on graphs

CO3: To study the concept of trees in detail and algorithms to find special spanning trees

CO4: To study Directed Graphs and its applications

Course : MT347F Computational Geometry

CO1: Students learn the representation of objects in 2D and 3D in the form of matrices

CO2: To study the transformations like reflection, rotation, scaling, shearing, translation of objects in 2D and 3D and their geometrical significance.

CO3: Students learn to generate plane curves by using parametric equation

CO4: All the concepts help students to learn graphic display of objects on computer.



HINDU COLLEGE, GUNTUR

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Main Road, Opp. Sri Venkateswara Vignan Mandir, Guntur

DEPARTMENT OF PHYSICS

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 and 2020-2021

PROGRAMME: THREE-YEAR B.Sc. PHYSICS

First Semester

Course I: Mechanics

Practical Course I (Lab-1)

Second Semester

Course II: , Waves and, Oscillations

Practical Course II (Lab-2)

Third Semester

Course III: Wave Optics

Practical Course III (Lab-3)

Fourth Semester

Course IV: Heat and Thermodynamics

Practical Course IV (Lab- 4)

Fifth Semester

Course V: Electricity, Magnetism and Electronics

Course VI: Modern Physics

Practical Course Electricity, Magnetism and Electronics -V

Modern Physics - VI

Sixth Semester

Course VII C: Elective Renewable Energy

Cluster VII C-1 – Solar and Thermal Aspects

VII C-2 – Wind, Hydro & Ocean Energies

VII C-3 – Storage Devices

Practical Course VII C, VII C-1, VII C-2 & VII C-3

B.Sc. PHYSICS SYLLABUS UNDER CBCS

I Year B.Sc.-Physics: I Semester

Paper I: MECHANICS

Course outcomes:

On successful completion of this course, the students will be able to understand

- *Understand Newton's laws of motion and motion of variable mass system and its application to rocket motion and the concepts of impact parameter, scattering cross section.*
- *Apply the rotational kinematic relations, the principle and working of gyroscope and its applications and the precessional motion of a freely rotating symmetric top.*
- *Comprehend the general characteristics of central forces and the application of Kepler's laws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation.*
- *Understand postulates of Special theory of relativity and its consequences such as length contraction, time dilation, relativistic mass and mass-energy equivalence.*

Practical Paper 1: Mechanics

Course outcomes (Practicals):

On successful completion of this practical course, the student will be able to;

- *Perform experiments on Properties of matter such as the determination of moduli of elasticity viz., Young's modulus, Rigidity modulus of certain materials; Surface tension of water , Coefficient of viscosity of a liquid , Moment of inertia of some regular bodies by different methods and compare the experimental values with the standard values.*

B.Sc. PHYSICS SYLLABUS UNDER CBCS

I Year B.Sc.-Physics: II

Semester Paper-II: Waves and Oscillations

Course outcomes:

On successful completion of this course, the student will be able to understand

- *Examine phenomena of simple harmonic motion and the distinction between undamped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator.*
- *Appreciate the formulation of the problem of coupled oscillations and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems.*
- *Figure out the formation of harmonics and overtones in a stretched string and acquire the knowledge on Ultrasonic waves, their production and detection and their applications in different fields.*

Practical Course Paper-II:

Waves and Oscillations

Course outcomes (Practicals):

On successful completion of this practical course the student will be able to understand

- Know how to determine the acceleration due to gravity at a place using Compound pendulum and Simple pendulum.
- Notice the difference between flat resonance and sharp resonance in case of volume resonator and sonometer experiments respectively.
- Verify the laws of transverse vibrations in a stretched string using sonometer and comment on the relation between frequency, length and tension of a stretched string under vibration.
- Demonstrate the formation of stationary waves on a string in Melde's string experiment.
- Observe the motion of coupled oscillators and normal modes.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

II Year B.Sc.-Physics:

III Semester Paper-III: WAVE

OPTICS

Course outcomes:

On successful completion of this course, the students will be able to understand

- ❖ *Understand the phenomenon of interference of light and its formation in (i) Lloyd's single mirror due to division of wave front and (ii) Thin films, Newton's rings and Michelson interferometer due to division of amplitude.*
- ❖ *Distinguish between Fresnel's diffraction and Fraunhofer diffraction and observe the diffraction patterns in the case of single slit and the diffraction grating.*
- ❖ *Describe the construction and working of zone plate and make the comparison of zone plate with convex lens.*
- ❖ *Explain the various methods of production of plane, circularly and polarized light and their detection and the concept of optical activity.*
- ❖ *Comprehend the basic principle of laser, the working of He-Ne laser and Ruby lasers and their applications in different fields.*
- ❖ *Explain about the different aberrations in lenses and discuss the methods of minimizing them.*
- ❖ *Understand the basic principles of fiberoptic communication and explore the field of Holography and Nonlinear optics and their applications.*

Practical Paper III: Wave Optics

Course outcomes (Practicals):

On successful completion of this practical course the student will be able to understand

1. *Gain hands-on experience of using various optical instruments like spectrometer, polarimeter and making finer measurements of wavelength of light using Newton Ring experiment, diffraction grating etc.*
2. *Understand the principle of working of polarimeter and the measurement of specific rotatory power of sugar solution*
3. *Know the techniques involved in measuring the resolving power of telescope and dispersive power of the material of the prism.*
4. *Be familiar with the determination of refractive index of liquid by Boy's method and the determination of thickness of a thin wire by wedge method.*

B.Sc. PHYSICS SYLLABUS UNDER CBCS
II Year B.Sc.-Physics: IV Semester
Paper-IV: HEAT AND THERMODYNAMICS

Course outcomes:

On successful completion of this course, the student will be able to understand

- ❖ *Basic aspects of kinetic theory of gases, Maxwell-Boltzmann distribution law, equipartition of energies, mean free path of molecular collisions and the transport phenomenon in ideal gases*
- ❖ *Gain knowledge on the basic concepts of thermodynamics, the first and the second law of thermodynamics, the basic principles of refrigeration, the concept of entropy, the thermodynamic potentials and their physical interpretations.*
- ❖ *Understand the working of Carnot's ideal heat engine, Carnot cycle and its efficiency*
- ❖ *Develop critical understanding of concept of Thermodynamic potentials, the formulation of Maxwell's equations and its applications.*
- ❖ *Differentiate between principles and methods to produce low temperature and liquefy air and also understand the practical applications of substances at low temperatures.*
- ❖ *Examine the nature of black body radiations and the basic theories.*

Practical Paper-IV: Heat and Thermodynamics

On successful completion of this practical course, the student will be able to understand

- *Perform some basic experiments in thermal Physics, viz., determinations of Stefan's constant, coefficient of thermal conductivity, variation of thermo-emf of a thermocouple with temperature difference at its two junctions, calibration of a thermocouple and Specific heat of a liquid.*

B.Sc. PHYSICS SYLLABUS UNDER CBCS

III Year B.Sc.-Physics: V Semester

Paper-V: ELECTRICITY, MAGNETISM AND ELECTRONICS

Course outcomes:

On successful completion of this course, the students will be able to understand

- ❖ Understand the Gauss law and its application to obtain electric field in different cases and formulate the relationship between electric displacement vector, electric polarization, Susceptibility, Permittivity and Dielectric constant.
- ❖ Distinguish between the magnetic effect of electric current and electromagnetic induction and apply the related laws in appropriate circumstances.
- ❖ Understand Biot and Savart's law and Ampere's circuital law to describe and explain the generation of magnetic fields by electrical currents.
- ❖ Develop an understanding on the unification of electric and magnetic fields and Maxwell's equations governing electromagnetic waves.
- ❖ Phenomenon of resonance in LCR AC-circuits, sharpness of resonance, Q-factor, Power factor and the comparative study of series and parallel resonant circuits.
- ❖ Describe the operation of p-n junction diodes, zener diodes, light emitting diodes and transistors
- ❖ Understand the operation of basic logic gates and universal gates and their truth tables.

Practical Paper V: Electricity, Magnetism and Electronics

Course outcomes (Practicals):

On successful completion of this practical course the student will be able to understand

- Measure the current sensitivity and figure of merit of a moving coil galvanometer.
- Observe the resonance condition in LCR series and parallel circuit
- Learn how a sonometer can be used to determine the frequency of AC-supply.
- Observe the variation of magnetic field along the axis of a circular coil carrying current using Stewart and Gee's apparatus.
- Understand the operation of PN junction diode, Zener diode and a transistor and their V-I characteristics.
- Construct the basic logic gates, half adder and full adder and verify their truth tables. Further, the student will understand how NAND and NOR gates can be used as universal building blocks.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

III Year B.Sc.-Physics: V Semester

Paper VI: MODERN PHYSICS

Course outcomes:

On successful completion of this course, the students will be able to understand

- ❖ Develop an understanding on the concepts of Atomic and Modern Physics, basic elementary quantum mechanics and nuclear physics.
- ❖ Develop critical understanding of concept of Matter waves and Uncertainty principle.
- ❖ Get familiarized with the principles of quantum mechanics and the formulation of Schrodinger wave equation and its applications.
- ❖ Examine the basic properties of nuclei, characteristics of Nuclear forces, salient features of Nuclear models and different nuclear radiation detectors.
- ❖ Classify Elementary particles based on their mass, charge, spin, half life and interaction.
- ❖ Get familiarized with the nano materials, their unique properties and applications.
- ❖ Increase the awareness and appreciation of superconductors and their practical applications.

Practical Paper VI: Modern Physics

On successful completion of this practical course, the student will be able to understand

- Measure charge of an electron and e/m value of an electron by Thomson method.
- Understand how the Planck's constant can be determined using Photocell and LEDs.
- Study the absorption of α -rays and β -rays, Range of β -particles and the characteristics of GM counter
- Determine the Energy gap of a semiconductor using thermistor and junction diode.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

III Year B.Sc.-Physics: VI Semester

Elective Paper VII C: Renewable Energy

Course Outcome

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

- ❖ Student can understand different forms of energy other than conventional energy.
- ❖ Environmental effects – Water pollution, Depletion of Ozone layer, Global warming etc.,
- ❖ Global Energy Scenario – Energy consumption in various sections, Power generation techniques
- ❖ Indian Energy Scenario – Energy resources available in India and Urban & Rural energy consumption
- ❖ Solar Energy – Applications like Solar Cooker, Solar Cell and advantages.
- ❖ Wind Energy – Conservation energy principles and advantages.
- ❖ Ocean Energy – Tidal Power generation and advantages.
- ❖ Hydrogen Energy – History of Hydrogen Energy and advantages.
- ❖ Bio Energy – Energy from Biomass and conversion of Biomass into fuels and advantages.

Practical Paper VII C: Renewable Energy

On successful completion of this practical course, the student will be able to;

- ❖ *Performance testing of Solar Cooker*
- ❖ *Measurement of v-i characteristics of solar cell.*
- ❖ *Characteristics of Wind*

B.Sc. PHYSICS SYLLABUS UNDER CBCS

III Year B.Sc.-Physics: VI Semester

Elective Paper VII C-1: Solar and Thermal & Photovoltaic Aspects

Cluster C-1 – Solar and Thermal & Photovoltaic Aspects

On successful completion of this practical course, the student will be able to;

- ❖ Basics of solar radiation - Structure of Sun and Solar Radiation
- ❖ Photovoltaic cell – Construction, Working
- ❖ Solar PV systems – Solar cell module assembly
- ❖ Solar Thermal application – Solar water heat system
- ❖ Solar PV applications - System Installation and PV market analysis and economics of SPV system

Practical Paper VII C-1: Solar and Thermal & Photovoltaic Aspects

On successful completion of this practical course, the student will be able to;

- ❖ Study on Solar photovoltaic panel in series and parallel combination

III Year B.Sc.-Physics: VI Semester

Elective Paper VII C-2: Wind, Hydro & Ocean Energies

Cluster C-2 – Wind, Hydro & Ocean Energies

On successful completion of this practical course, the student will be able to understand

- ❖ Wind energy conversion principle, design of wing turbine.
- ❖ Wind energy applications
- ❖ Over view of micro, mini and small hydro system
- ❖ Tidal and wave energy system
- ❖ Origin and nature of tidal energy

Practical Paper VII C-2: Wind, Hydro & Ocean Energies

On successful completion of this practical course, the student will be able to understand

- ❖ Estimation of wind speed using anemometer
- ❖ Study the effect of density of water on the output power of hydroelectric generator

III Year B.Sc.-Physics: VI Semester

Elective Paper VII C-3: Energy Storage Devices

Cluster C-3 – Energy Storage Devices

On successful completion of this practical course, the student will be able to understand

- ❖ Need of energy storage , different modes of energy storage, primary and secondary lithium solid state and molten solvent batteries, lead acidic batteries etc.,
- ❖ Magnetics and Electrical energy storage systems
- ❖ Electro chemical Double Layer Capacitors (EDLC) – working, structure and applications
- ❖ Fuel cells – difference between batteries and fuel cells, working and applications and types of fuel cells

Practical Paper VII C-3: Energy Storage Devices

On successful completion of this practical course, the student will be able to understand

- ❖ Charge and discharge characteristics of storage battery, charging and discharging of capacitor, working of DC-AC inverter and DC-DC convertor, Ni-Cd battery charging characteristics and effect of temperature on the performance of fuel cell.



HINDU COLLEGE, GUNTUR

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UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016

PROGRAMME: THREE-YEAR B.Sc. GEOLOGY.

Programme outcomes

- Student acquire a solid base of knowledge in the science of geology as a whole as well as
 - earth materials,
 - earth history,
 - sedimentation and stratigraphy,
 - deformational processes and structural features, and
 - Geomorphic processes and land forms.
- Student should able to Know the geologic time scale and place important geologic events in a temporal framework
- Student must able to understand the geologic time scale and place important geologic events in a temporal framework
- Student Learn about the use of compasses, survey instruments, and images in geological investigations.
- Student Understand the influence of water and at Earth's surface and in the subsurface.
- Interpret geophysical measurements of subsurface properties
- Students should be improved their knowledge in understanding the various structural features of the rocks.
- Student improved their knowledge in understanding the types of surficial deposits and landforms.
- Student Apply principles of mathematics, chemistry, and physics to

geologic problems

- Develop proficiency in conveying complex geologic concepts in clear, technically correct writing.
- Student will develop proficiency in oral communication of complex geologic concepts.
- Student should be Develop the aptitudes and dispositions necessary to help democratize society by obtaining and maintaining employment as a professional geologist.

Course outcomes:

Course : Semester I - Physical Geology and Crystallography

- To describe scope of Geology and relation with other subjects and Importance of geology.
- To describe Weathering and Erosion agents. Formation of Different land forms due to erosion agents - how the landscape changes.
- To learn Volcanoes, Plate tectonics, Earthquakes.
- Study of Origin and Age of the Earth.
- To learn Crystal definition, morphology, Amorphous and Crystalline states.
- To explain the 48 Special Crystal Forms and Crystallographic axes. Symmetry, classification of crystals.
- To study the Parameters, Hermann-Mauguin Symbol Detailed study normal class of each System.

Course: Semester II – Mineralogy and Optical Mineralogy

- To learn the Definition and scope of mineralogy. Physical, chemical properties and Occurrence of Minerals.
- To describe the silicate structures and classification of minerals.
- To study Uniaxial and Biaxial Minerals. Nicol Prism and its construction.
- To explain Petrological (Polarising) Microscope - its mechanical and optical parts.

Course: Semester III –Petrology (Igneous, sedimentary and Metamorphic Rock)

- To learn major rock types, forms, textures ,structure and origin .
- To understand the process for the formation of rocks.
- To study the classification of rocks.
- To describe agents ,zones,grades,and facies of metamorphic rocks.

Course: Semester IV – Structural geology and palaeontology

- To study rock behaviour primary and secondary, structures and their classifications.
- To explain processes of fossilization, fossil preservation and its uses.
- To describe evolution of life through time, and Time scale.
- To learn the morphology of fossils.

Course: Semester V – Stratigraphy & Indian Geology

- To learn principles of stratigraphy. Geological timescale, types of stratigraphy.
- To study principles of correlations.

- To describe successions of different geological periods(Dharwar,Gondwana,Purana,Triassic,Jurassic,cretaceous,Deccan traps and Siwalik).
- Able to understand age of tectonic events, age of mineral deposits.
- To study about paleo environments.

Course : Semester V – Economic Geology

- To learn syngenic and Epigenetic and Exogenetic ,Endogenetic deposits and classification of mineral deposits.
- To explain Properties, Mode of Occurrence, distribution in India and uses of the metals.
- To understand the mineral resources of India.

Course: Semester VI – Ground water Geology & Exploration

- To learn Hydrological cycle, origin and classification of groundwater.
- To understand occurrence and distribution of groundwater.
- To study hydrological properties of rocks.
- To explain the exploration of groundwater.
- To study quality of groundwater.

Course: Semester – VI Project Mineral Exploration

- To understand different methods in prospecting and Exploration of Minerals
- To learn ore estimation, and ore reserves and their calculation.
- To study about ore sampling Methods, open cast and underground mining.
- To learn drilling methods.
- To explain techniques in mineral exploration.
- To describe Fundamentals of Mineral Beneficiation.

Course: Semester VI – Environmental Geology

- To study about concepts of environmental Geology and role of geologist in environmental protection.
- To Study about soil properties, classification, soil profile.
- To explain Floods and its types, Causes & Mitigation.
- To understand Mining impact on the environment - Health Hazards.
- To learn Environmental considerations in location and construction. Waste disposal hazardous.
- To describe Earthquakes, Volcanic & Landslides- Prediction and Protection and Causes for Tsunamis.

Course: Semester VI – Remote sensing & Engineering Geology

- To study Types of Aerial Photographs, Remote sensing and Photo Geological Studies – Interpretation
- To study EMR Interaction with Atmosphere and Earth Surface, Space, Sensor and Ground segments.
- To learn about Remote Sensing platforms and Indian Remote Sensing Satellites, Remote Sensing applications (mineral exploration geomorphology, soil mapping etc).
- To describe GIS and its applications Remote Sensing for GIS. Data models, Main Segments of GIS, Components of GIS,
- To explain Role of geologist in Engineering planning, design and construction.
- To understand Engineering properties of rocks and Site investigation methods
- To describe Geological, Geotechnical and Environmental considerations for Dams and Reservoirs Tunnels, bridges and highways



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DEPARTMENT OF STATISTICS

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015–2016

OBJECTIVES OF DEPARTMENT OF STATISTICS:

- ❖ To inspire knowledge across different areas in Statistics & Actuarial Science.
- ❖ To impart knowledge on statistical concepts like data collection, measures of central tendency & Dispersion, Probability & distributions, Statistical Inference, Statistical methods, Experiment design, Vital Statistics, SQC, Reliability & OR.
- ❖ To equip our students with good quality to appear for competitive examinations.
- ❖ To include research atmosphere among students by Assigning Projects.

COURSE OUTCOMES OF STATISTICS:

Semester-I : Paper-I: (Descriptive Statistics & Probability)

After completion of this course the students is able to

- C01: Understand the have the basic knowledge on data collection & measures of central tendency & dispersion and moments.
- C02: Probability is used to real life problems.
- C03: Basic knowledge on Random variables.

Semester-II : Paper-II (Mathematical Expectations & Probability Distribution)

After completion of this course the student is able to:

- C01: Mode bridge between elementary statistical tools & probability theory.
- C02: Applied the theoretical discrete probability distributions like Binomial, Poisson etc. In the relevant application areas.
- C03: Apply the theoretical continuous probability distributions like normal, exponential etc in the relevant application areas.

Semester-III : Paper-III (Statistical Methods):

After completion of this course the student is able to:

- C01: Find the interrelationship between two (or) more variables with the help of curve fitting, correction & Regression analysis.
- C02: Understand the basic components of sampling distribution.
- C03: Understand the basic knowledge of theory of attributes in constancy of data.

Semester-IV : Paper-IV (Statistical Inference)

After completion of this course the student is able to:

- C01: Find a best estimator with reference the different criteria in case of real life applications.
- C02: Understand the critical problems that are faced in testing of hypothesis with reference to the cross in decision making.
- C03: Apply the different testing tools like t-test, f-test, χ^2 -test, sign test, run test, median test etc to analyze the relevant real life problem.

Semester-V : Paper-V (Sampling Techniques & Design of Experiments):

After completion of this course the student is able to:

- C01: Know the various sampling methodologies and their efficiencies in theoretical & practical aspects.
- C02: Analyse the different mathematical models with the help of statistical designs & appropriate data and made valuable conclusions by proper evaluation.

Semester-V : Paper-VI (Quality & Reliability):

After completion of this course the student is able to:

- C01: Understanding of quality control in industry with reference to \bar{x} , R, σ , NP, P, C charts.
- C02: Understanding the knowledge of sampling plans like single & double sampling plans.
- C03: Understanding the knowledge of Reliability

Semester-VI : Paper-VII (Applied Statistics):

After completion of this course the student is able to:

- C01: Understanding the knowledge of time series.
- C02: Understanding the knowledge of criteria & construction of Index numbers.
- C03: How to estimate Birth & Death rates with reference to some vital statistics methods.

Semester-VI : Paper-VIII (Optimization Techniques) (Cluster):

After completion of this course the student is able to:

- C01: Basic knowledge of operation Research & Linear Programming problem.
- C02: Understanding the procedures for construct the linear programming problems.
- C03: Understanding the knowledge of basic feasible solutions.

HINDU COLLEGE :: GUNTUR

Bsc computers(MECS)

3 YEAR ELECTRONICS PROGRAMM & COURSE OUTCOME

PROGRAM OUTCOME

PSO1: A student should acquire basic knowledge & facts about Electronics devices and circuits as well as electronic components there by he should be able to display knowledge on latest ongoing technology.

PSO2: A student should get adequate exposure to global and local concerns that explore them many aspects of Present Electronics.

PSO3 : A student will able to generate new electronic projects.

PSO4 : Due to our electronics program, Student is equipped with practical knowledge, problem solving skills, creative talent and also communication skills.

PSO5: Student should be able to get different government sector jobs regarding Electronics core side. And also various kinds of employment.

PSO6: As, day by day the technology is going on. Practical knowledge of ELECTRONICS Enables student to develop a positive attitude towards present digital world.

COURSE OUTCOME

SEMISTER-I BASIC CIRCUIT THOERY

- Student learn the basic definations of current , voltage , resistor and sine waves .
- Student study the AC and DC components
- Student observe the frequency responses of R,L,C circuits.
- Student learn the construction of RC , RL & RLC circuits for both series and parallel.
- Student study the node analysis start to delta and delta to star.

- To study the basic theorems super position , nortans , thevenins etc.,

SEMISTER-2 ELECTRONIC DEVICES AND CIRCUITS

- To study the basic electronic devices like transistor, diodes, capacitors, inductors & IC etc.,
- Student learn the construction of BJT,FET and silicon controlled rectifiers
- To observe the static and transfer characteristics of transistors
- Student learn the basics of rectifiers , LEDs , photo diode, LDR
- To study the 3 terminal fixed voltage regulators

SEMISTER-3 DIGITAL ELECTRONICS

- To study the decimal,binary & hexagonal calculations,.
- Student learn the construction of digital logic gates along with truth tables
- Student study the multiplexers and de multiplexers construction
- To observe the adders and subtractors for both half and full
- To learn the construction of K-map , flip flops etc.,
- Student study the general memory operations like ROM , RAM etc.,

SEMISTER-4 ANALOG AND DIGITAL IC APPLICATIONS

- To study the basic op-Amp circuits like integrator, differentiator,summing amplifiers.
- Student learn the construction of basic Op-Amp
- Student observe the frequency responses of integrator circuit and differentiator circuit.

- Student study the data converters like sigma to delta and D/A converter.
- To study the interfacing of digital clocks , parallel to serial and serial to parallel
- Student learn the calculations of BCD to gray code and gray to binary
- To study the multivibrators like astable , bistable and monostable

SEMISTER-5 ANALOG AND DIGITA COMMUNICATIONS & MICROPROCESSORS

- To study the amplitude modulation and frequency modulation
- To learn the TDM and FDM techniques
- To study the PAM , PCM and super heterodyne receiver
- To prove the sampling theorem
- To learn the construction and operation of Amplitude shift keying
- To study the introduction of 8085 and 8086 microprocessor architecture , pin diagram .
- To learn the interrupts , data types and registers of microprocessor
- Student able to learn the addressing modes instruction sets of microprocessor
- To execute the assemble language program like addition, subtraction , multiplication and division operations in microprocessor
- Student able to learn the DMA controller, and various instructions like shift and rotate instructions.

SEMISTER-6 MICROCONTROLLERS AND INTERFACING

- To study the introduction of 8051 microcontroller architecture , pin diagram .
- To learn the interrupts , data types and registers
- Student able to learn the addressing modes instruction sets
- To execute the assemble language program like addition, subtraction , multiplication and division operations
- Student able to learn the seven segment display information on LCD and also control of stepper motor.



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UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 and 2020-2021 PROGRAMME: THREE-YEAR B.Sc. COMPUTER SCIENCE

S.No	YEAR	SEMISTER	COURSE CODE	COURSE	COURSE OUTCOMES
1	I B.Sc(CS)	Sem-I	1313-1B	Computer fundamentals and Photoshop	After the successful completion of course the student should have thorough knowledge about on computers and Photoshop's from the practical to the painterly artistic and to understand how Photoshop will help you create your own successful images.
2	I B.Sc(CS)	Sem-II	1313-2	Programming In C	After this course student will be able to 1. Appreciate and understand the working of a digital computer. 2. Analyze a given problem and develop an algorithm to solve the problem. 3. Improve upon a solution to a problem. 4. Use the 'C' language constructs in the right way. 5. Design, develop and test programs written in 'C'.
3	II B.Sc(CS)	Sem-III	2313-3	Object oriented programming using java	After completion of this course, student can be able to understand: 1. Understand the concept and underlying principles of Object-Oriented Programming 2. Understand how object-oriented concepts are incorporated into the Java programming language 3. Develop problem-solving and programming skills using OOP concept 4. Develop the ability to solve real-world problems through software development in high-level programming language like Java 5. Develop efficient Java applets and applications

					using OOP concept
4	II B.Sc(CS)	Sem-IV	2313-4	Data structures	<p>After completing this course satisfactorily, a student will be able to:</p> <ol style="list-style-type: none"> 1. Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms. 2. Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs. 3. Demonstrate different methods for traversing trees. 4. Compare alternative implementations of data structures with respect to performance. 5. Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack. 6. Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.
5	III B.Sc(CS)	Sem-V	3313-5A	Data base management system	<p>On completing the subject, students will be able to:</p> <ol style="list-style-type: none"> 1. Design and model of data in database. 2. Store, Retrieve data in database.
6	III B.Sc(CS)	Sem-V	3313-5B	Software engineering	<p>On completing the subject, students will be able to:</p> <ol style="list-style-type: none"> 1. Ability to gather and specify requirements of the software projects. 2. Ability to analyze software requirements with existing tools. 3. Able to differentiate different testing methodologies. 4. Able to understand and apply the basic project management practices in real life projects. 5. Ability to work in a team as well as independently on software projects.
7	III B.Sc(CS)	Sem-VI	3313-6C	Elective-C	On completing the subject,

				Web Technologies	students will be able to: 1. To understand the web architecture and web services. 2. To design interactive web pages using HTML and Style sheets. 3. To study the framework and building blocks of .NET Integrated Development Environment. 4. To provide solutions by identifying and formulating IT related problems.
8	III B.Sc(CS)	Sem-VI	3313-6C1	Elective –C-1 PHP & MySql, Word press	After completing this course satisfactorily, a student will be able to: 1. Introduction to web Development with PHP. 2. How to code a PHP application. 3. How to use PHP with a MySQL database. 4. How to use the MVC pattern to organize your code. 5. How to test and debug a PHP application. 6. How to work with form data. 7. How to work with dates. 8. How to work with cookies and sessions.
9	III B.Sc(CS)	Sem-VI	3313-6C2	Elective –C-2 Advanced Java Script JQUERY/AJAX / JSON / Angular JS	On completing the subject, students will be able to: Create a dynamic website using advanced features of JavaScript and create a website with good and attractive design.
10	I B.Sc/B.A/B.COM	Sem-II	1108-2B	ICT-I common to all	After the successful completion of course the student would have thorough knowledge about concept and principles of computer fundamentals. Student would be in a position to work with MS office word, Ms excel and power point presentations
11	II B.Sc/B.A/B.COM	Sem-III	2108-3	ICT-II common to all	After the successful completion of course the student should have thorough knowledge about concept and principles of internet

					fundamentals and Web Tools and Web Applications.
12	I B.Sc(CS) (2020 – 21)	Sem-I		Problem solving in C	<p>After completing this course, Students will be able to:</p> <ol style="list-style-type: none"> 1. Write efficient algorithms to solve various problems 2. Understand and use various constructs of the programming language such as conditionals, iteration, and recursion 3. Implement your algorithms to build programs in the C programming language 4. Use data structures like arrays, linked lists, and stacks to solve various problems <p>Understand and use file handling in the C programming language</p>
13	I B.Sc(CS) (2020 – 21)	Sem-II		Data Structures using C	<p>Analyze run-time execution of previous learned sorting Methods, including selection, merge sort, heap sort and Quick sort. To implement the Stack ADT using both array based and linked-list based data structures. Able to implement binary search trees.</p>



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UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 ~~and 2020-2021~~
PROGRAMME: THREE-YEAR B.Sc. AGRICULTURE

Programme Outcomes

PO1: To provide the sound knowledge in the Agriculture and allied science subjects required to solve common problems in management of crop cultivation, improvement and their marketing.

PO2: Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in Agriculture stream.

PO3: To produce highly skilled professionals in field of various branches of agriculture to meet the need of various scientific agriculture institutions as well as farmers demand for agriculture professionals.

PO4: To develop a good teaching-learning environment for higher studies and help in selection of professional careers in government and private organization, agro-based industries, educational/ research/extension, institutes etc.

PO5: To provide adequate information about natural and other resources through a course curriculum for the betterment of life.

Programme specific outcomes

After completing the course the students will be able to:

PSO1: Develop the knowledge based resources and technologies for the enhancement of decision-making ability in students for selection of higher studies in Agriculture.

PSO2: Demonstrate the thoughts of the legal and ethical issues of the environment impacting agriculture and food security of the local and global population.

PSO3: Establish a self-motivated system of agriculture education to attain the local and global demands of agriculture professionals in agriculture and allied sectors.

PSO4: Develop operational resources for the efficient and cost effective implementation of agriculture education.

PSO5: Enabling students to develop a positive attitude towards Agriculture as an interesting and valuable subject of study.

Course outcomes

Course: Semester I – Agronomy I

- CO1: To learn about the agronomy, Meteorology and agro-climatic zones of India.
- CO2: To understand about the dry land farming and irrigation methods.
- CO3: To Acquaint with concepts of cultivation of pulses and cereals.
- CO4: To identify the different weeds present in the agricultural fields and there management methods.

Course: Semester II – Agronomy II

- CO1: To discuss about the agronomy, fertilizers and organic manures used in agriculture.
- CO2: To differentiate the fertilizers, manures & bio-fertilizers.
- CO3. Acquaint with concepts, scope, and importance of breeding in the field of agriculture.
- CO4. To acquire knowledge in the production of millets, oil seeds and commercial crops.

Course: Semester III - Fundamentals of Entomology

- CO1: Educate the basic concept of entomology, insect collection, preservation and morphology of insects.
- CO2: To demonstrate the principles of Pest surveillance, Pest forecasting, recent and traditional methods of pest management including IPM
- CO3: To learn the basic concepts related to pest management methods.
- CO4: To enhance the knowledge in identifying the nature of pest and its damage on crops.

Course: Semester IV - Fundamentals of Plant Pathology

- CO1: To learn disease identification, nature of pathogens and different strategies for management of plant diseases.
- CO2: To study various types of plant disease management methods.
- CO3: To learn the concept of plant disease epidemiology.
- CO4: To understand the types and principles of plant pathology.

Course: Sem V–Fundamentals Of Horticulture And Production Technology Of Fruit Crops

CO1: To educate concepts of vegetable and fruit production, Importance in human nutrition and national economy, etc.

CO2: To analyze harvesting time and techniques of various vegetable and fruit crops, storage conditions and requirements as per the cultivated crops, etc.

CO3: To execute various cultivation practices such as time of sowing, sowing or transplanting techniques, planting distance, fertilizer requirements, irrigation, weed management, etc..

CO4: To describe about origin, area, production, improved varieties, soil and climate requirement for different season vegetable and spice crops, etc.

Course : Semester V – Dryland Farming and Watershed Management

CO1: Acquaint rainfed agriculture, rainfall distribution and collection of rainwater.

CO2: To Develop ability to classify the crops and their growing regions according to the rainfall.

CO3: To execute the production techniques of crops and rainwater harvesting in rainfed areas.

CO4: To study the seasonal rainfall and different types of watersheds and its components.

Course: Semester VI- Manures, Fertilizers and Soil Fertility Management

CO1: To improve soil fertility and productivity by application of soil test based judicious use of fertilizers and application of macro & micronutrients.

CO2: To develop basic knowledge about organic manures & fertilizers and preparation of manures.

CO3: Students learn about the chemical fertilizers, their composition and classification.

CO4: To develop the skills for making recommended fertilizer doses in the crop field and method of their application to the crops.

Course: Semester VI – Genetics and Plant Breeding

CO1: To list out various contributions, the significance of plant breeding and its milestone in the field of agriculture.

CO2: Sketch the breeding objectives and implementation of different selection methods and hybridization techniques for various field crops.

CO3: To distinguish the breeding method for self, cross and asexually propagated crops.

CO4: Develop the understanding of Mendelian principles and their significance in heredity and inheritance of Qualitative & Quantitative traits.

Course: Semester VI - Organic Farming and Sustainable Agriculture

CO1: Students develop knowledge of principles of organic farming in context of improving human health and amelioration of the environment.

CO2: Develops knowledge of certification methods of organic produce.

CO3: Acquaint the knowledge on farming systems and sustainable agriculture, its importance and its scope.

CO4: Differentiate between modern and sustainable agriculture and different farming systems.

Course: Semester VI – Social and Farm Forestry

CO1: To educate about the importance of trees in agriculture, forest regeneration, forest mensuration, agro-forest; factors affecting standing trees in forest and plantations; salient features of Indian Forest Policies, forest management, forest resources and produce, forest cover in India and in different states, social life and environmental issues, etc..

CO2: Develop the understanding of methods used in forest regeneration, land recreation, nursery and forest management, silvicultural practices, collecting of non-timber forest products, etc.

CO3: Develop the skills in nursery preparation of forest trees, tending operations, forest mensuration, selection of trees in agro-forestry, etc.

CO4: To acquire knowledge in the development of wasteland for planting.



HINDU COLLEGE, GUNTUR

(Re-accredited by NAAC as Grade 'A' with CGPA 3.07)

Main Road, Opp. Sri Venkateswara Vignan Mandir, Guntur

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 and 2020-2021

PROGRAMME: FIRST-YEAR B.Sc. HORTICULTURE

Programme specific outcomes

PSO1: To provide the sound knowledge in the horticulture and allied science subjects required to solve common problems in management of crop cultivation, improvement and their marketing.

PSO2: Understand the basic concepts of Horticulture in relation to its allied core courses and to distinguish the importance of various horticultural plants for the welfare of humans.

PSO3: To demonstrate simple experiments related to plant sciences, analyze data, and interpret them with the theoretical knowledge..

PSO4: To develop a how to work in teams with enhanced inter-personal skills and hence develop the critical thinking with scientific temper and to effectively communicate scientific ideas both orally and in writing.

PSO5: To Realize the potential of the horticulture to become an entrepreneur-self employment.

Programme outcomes

PO1- The student will understand scientific basis of plant propagation, crop improvement, crop physiology and production technologies in horticulture crops.

PO2-Can demonstrate advanced propagation methods of horticultural crops and become eligible to manage nursery unit.

PO3-The student will be able to practice advanced production technologies of fruits, vegetable crops, flower crops, medicinal and plantation crops.

PO4-The student will become eligible to get employment in managing vegetable seed production units, organic farms, estate operations, precision horticulture units, orchards, banking sector and post harvest industries.

PO5-Will become skill full in planning, designing and execution of garden projects and will become capable of managing landscape projects.

Course outcomes

Course: Semester I –Fundamentals of Horticulture and Soil Science

CO1: Understand the scope and potential of horticulture products in India and Andhra Pradesh and Classifying the horticulture plants based on soil and climate.

CO2: To Illustrate different systems of planting in an orchard and To predict the number of plants in a given land.

CO3: To demonstrate the methods and types of training and pruning.

CO4: To explain the basics of soil science and justify the role of soil as a medium for plant growth

CO5: To Explain about integrated nutrient management and demonstrate the skills of soil testing

Course: Semester II -Plant Propagation and Nursery Management

Co1: To Explain sexual and asexual propagation methods of plants.

CO2:To Demonstrate skills on vegetative propagation of plants and to Demonstrate the techniques on raising of different types of nursery bed

CO3: To Justify the role of various propagation structures used to raise horticulture plants an to Understand the regulation to establish a plant nursery and quality parameters to be maintained.

CO4:To Implement different routine/regular activities in a nursery

CO5:To Understand the economics of a plant nursery and can maintain necessary records.

Course: Semester III - Basics of Vegetable Science (Olericulture)

CO1: To Distinguish the growing of vegetables according to season and climate

CO2: To Get detailed knowledge on cultivation aspects of different vegetables and to Understand and explain the special intercultural operations done in vegetable crops

CO3: To Study of morphology and taxonomy of different vegetable crops

CO4: To Study of different varieties of vegetable crops

CO5: To Identify the diseases and pests of vegetable crops and their management

Course: Semester III - Basics of Fruit Science (Pomology)

CO1: To Realize the value of fruits in terms of human nutrition and economy of nation. To Explain the potential fruit zones in various states of our country

CO2: To Classify the fruiting plants based on temperature requirements. To Acquire knowledge related to various cultivation practices for different fruit crops

CO3: To Demonstrate the special intercultural operations done in fruit crops and to Comprehend the knowledge on varieties of different fruit crops.

CO4: To Examine the pests and diseases of fruit crops and develop skills to manage the same.

CO5: To Explain about Integrated Orchard Management and to develop knowledge on various entrepreneurial skills related to fruit science.

Course: Semester IV - Pests and Diseases of Horticulture Plants and their Management

CO1: To Develop a critical understanding of insect pests and plant disease symptoms.

CO2: To Examine and identify the pests and diseases of vegetable crop, ornamental crops, fruit crops and their management.

CO3: To Identify and classify various insect pests on horticulture

CO4: To Justify the significance of Integrated Plant Disease Management for horticultural crops.

CO5: To Classify the pesticides based on use, chemical nature, formulation, toxicity and action



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UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 and 2020-2021

PROGRAMME: THREE-YEAR B.Sc. FOOD TECHNOLOGY AND MANAGEMENT

Programme Outcomes

PO1: To develop graduates with sound knowledge in the field of food technology by integrating basic engineering and sciences.

PO2: Apply knowledge gained in food chemistry, microbiology, engineering, and sensory evaluation to the development, processing, and preservation of safe, nutritious, and high-quality food products.

PO3: Design food products that meet the various food regulations and laws.

PO4: Critically access and analyze food science information available in the public domain in an innovative and ethical way.

PO5: To utilize advanced instruments and technologies to process and analyze food products and to solve food safety problems.

Programme specific outcomes

After completing the course the students will be able to:

PSO1: Graduates will apply economically feasible equipments for the modernization of traditional food processing methods.

PSO2: Students will apply the knowledge of food chemistry, food preservation, food processing and food packaging for the effective utilization of agricultural commodities to develop healthy and nutritious foods.

PSO3: Establish a self-motivated system of food processing education to attain the local and global demands of food technology professionals in technology and allied sectors.

PSO4: Graduates will apply the knowledge of food engineering and technology principles from the various aspects of food technology and related disciplines to solve practical and real-world problems.

PSO5: Enabling students to understand the basic concepts of various unit operations and unit processes in Food Technology.

Course outcomes

Course: Semester I – Fundamentals of Food Technology

CO1: To understand the history and evolution of food processing.

CO2: To study the structure, composition, nutritional quality and post harvest changes of various

CO3: To Acquaint with novel methods of food preservation.

CO4: To get aware on various constituents of foods.

Course: Semester I – Fundamentals of Food Chemistry-I

CO1: Understanding and ability to control the major chemical and biochemical (enzymatic) reactions that influence food quality with emphasis on food industry applications.

CO2: To understand the functional aspects of food components and to study their role in food processing.

CO3: To understand the chemistry of foods - composition of food, role of each component and their interaction.

CO4: To Understand problem solving capabilities in practicals working in teams in laboratory-based virtual experiments to gather and evaluate data using a range of current food analysis techniques.

Course: Semester I – Fundamentals of Food Microbiology

CO1: To understand the relevant genera and species of microorganisms determining the microbiological quality and safety of food and environmental factors affecting microbiological stability / spoilage

CO2: To understand the techniques by which the important pathogens and spoilage microorganisms are commonly inactivated, killed or made harmless in foods.

CO3: To understand the microbiology of different types of food commodities

CO4: Understand problem solving capabilities in practicals working in teams in laboratory-based virtual experiments to gather and evaluate microbial data using a range of current food analysis techniques.

Course: Semester II – Human Nutrition

CO1: To understand basic sciences relevant to nutrition, research and application of nutrition and an awareness of social and economic factors in food.

CO2: To understand various foods based dietary guidelines.

CO3: To identify different types of eating disorders and its regulation.

CO4: Appreciate the relationship between food, nutrition and health.

Course: Semester II – Fundamentals of Food Chemistry-II

CO1: To understand the basic structure of lipid and reaction involved during processing.

CO2: To predict how changes in overall composition are likely to change the reactivity of individual food

CO3: To know about the role of enzymes and various processing treatments in food industry.

CO4: To Understand problem solving capabilities in practicals working in teams in laboratory-based virtual experiments to gather and evaluate data using a range of current food analysis techniques.

Course: Semester II – Industrial Microbiology

CO1: To understand the necessity of microbiological quality control programs in food production.

CO2: To understand the relevant genera and species of microorganisms determining the microbiological quality and safety of food and environmental factors affecting microbiological stability / spoilage

CO3: Understand the effects of fermentation in food production and its influence on the microbiological quality and status of the food product.

CO4: To Understand problem solving capabilities in practicals working in teams in laboratory-based virtual experiments to gather and evaluate data using a range of current food analysis techniques.

Course: Semester III - Technology of Fruits & Vegetables

CO1: To impart knowledge of different methods of fruits and vegetable processing.

CO2: To Deals with technologies related to handling and storage of fruits and vegetables.

CO3: Impart skill and knowledge required to apply the principles and concepts behind fruit and vegetable processing including post-harvest handling.

CO4: To enhance the knowledge in preservation foods by using various methods.

Course: Semester III - Food Safety and Microbial Standards

CO1: To learn Food safety and hygiene practices followed in food industries.

CO2: To understand the types of hazards associated with foods.

CO3: To acquire knowledge on Food regulations (national as well as international)

CO4: To understand Design and implementation of food safety management systems such as ISO, HACCP and its prerequisites such as GMP, GHP etc.

Course: Semester III - Mathematics And Statistics

CO1: Student understands the concepts of correlation and regression and its applications.

CO2: Study about the testing of hypothesis of small and large samples.

CO3: Student is able to know the methods of finding averages and deviations.

CO4: Able to fit the curve of first and second degree equations by least square method and know the method of analyses of variance.

Course: Semester IV – Cereal Technology

CO1: Student understands the concepts composition, structure and storage of food grains.

CO2: Understand the traditional and modern milling operations of cereals.

CO3: Student is able to know the mechanization in processing equipments.

CO4: Able to identify the cereals and knowledge on cereal processing.

Course: Semester IV – Unit Operations in Food Processing

CO1: To understand the principles of Unit operation.

CO2: To acquaint with fundamentals of unit operations carried in food industries.

CO3: Student is able to understand the machineries used for various processing.

CO4: Able to identify the machineries and the field of its application.

Course: Semester IV – Food Quality and Sensory Evaluation

CO1: To understand and apply importance of taste.

CO2: To understand and analyze the odor perception.

CO3: Student is able to learn about texture and rheological properties.

CO4: Learn the method of panel screening and instrumental analysis.

HINDU COLLEGE :: GUNTUR



**COMMERCE
SYLLBUS**



HINDU COLLEGE, GUNTUR

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UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016

PROGRAMME: THREE-YEAR B.Com GENERAL

Programme Outcomes

Completion of programme the student will

- Acquire strong fundamentals of updated commerce knowledge special in the areas of accounting, marketing, finance, taxation
- Improve the student capability to words invention creativity in problem solving skills in business gain knowledge with different issues of business
- Improve the student's technical skills managerial qualities leadership qualities etc....
- Gain skill on management ,leadership, team work, with social responsibility for making themselves as professional and entrepreneur

S. No	Semester	Course Code	Course	Course Outcome
1	I	BCO1 -SB	Financial accounting	After the completion of the course, Students will be able to CO1 - To record the basic journal entries. CO2 – maintain the accounting records of any organization CO3 -Maintain the financial statements of a business entity. Can compute profitability and financial status of business. CO4 -Rectify errors in accounts.
2.	I	BCO1S - 2	Business Organization and Management	After the completion of the course, Students will be able to CO1 - To understand the basic concepts in commerce, trade and industry and acquire the knowledge of business organization CO2 - Obtained the knowledge and structure of industry. CO3 - To get the knowledge of managerial traits and talents essential to face emerging challenge of managing business CO4 - Understand the stages in planning and organizing CO 5 - Able to evaluate tools and techniques of recruitment, directing and controlling process.

3.	I	BCO1S -3	Business economics	<p>After completion of study the students will be able to:</p> <p>CO1 -Describe the Nature of economics – at micro and macro level</p> <p>CO2 -Analyze the supply and demand and its impact on consumer behavior</p> <p>CO3 –Able to measure the elasticity of demand in different methods.</p> <p>CO4 -analyze the cost and revenue</p>
4.	II	BCO2S-1	Financial accounting-II	<p>After completion of study the students will be able to:</p> <p>CO1 -Gains the knowledge of special transactions regarding accounting for consignment</p> <p>CO2 -Acquire the knowledge of techniques of bills of exchange</p> <p>CO3 -Ascertain the knowledge profitability and financial position of an enterprise from incomplete records</p> <p>CO4 -Able to understand different types provisions and reserves and their accounting treatment in final accounts</p> <p>CO5 -Get the knowledge various methods of depreciation of assets</p>
5	II	BCO2S-2	Business environment	<p>After completion of study the students will be able to</p> <p>CO1 -Define various elements internal as well as External affecting business environment.</p> <p>CO2 -Explain the techniques like SWOT analysis.</p> <p>CO3 -Define the terms like inflation, GDP, etc.</p> <p>CO4 -Define the consequences with regard to BOP.</p> <p>CO5 -Explain the economic trends and effect of Gov policies as LPG</p>
6	II	BCO2S-3	Business Economics	<p>After completion of study the students will be able to</p> <p>CO1 - Able to estimate minimization of cost Maximization of profits.</p> <p>CO2 - Can able to estimate the cost of production Able to analyze the various market structures.</p> <p>CO3 - Able to understand the national income, GDP And different economic systems.</p> <p>CO4 - Understand the liberalization, privatiz globalization.</p> <p>CO5 - Understand the concept of international trade.</p>

7	III	BCO3S-1	Corporate accounting	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Learn about the journal entries of issue of shares and issue of debentures.</p> <p>CO2-To know about the meaning of companies and working style of companies.</p> <p>CO3 -Know about the final accounts of the companies.</p> <p>CO4 -Learn about the valuation method of shares and goodwill and measurement of performance of companies.</p> <p>CO5 -Work with profit prior to incorporation and post incorporation profits in companies' accounts.</p> <p>CO6 -Learn about the concept of sources of redemption of debentures and redemption of preference shares</p>
8	III	BCO3S-2	Business statistics	<p>After completion of study the students will be able to:</p> <p>CO1 -Student will able to apply knowledge to solve simple tasks using computer (MS Excel)</p> <p>CO2 -Student will able to independently calculate basic statistical parameters (mean, measures of dispersion, correlation coefficient, indexes)</p> <p>CO3 -Student will able to interpret the meaning of the calculated statistical indicators</p> <p>CO4 -Student will able to choose a statistical method for solving practical problems</p> <p>CO5 -Student will able to explain probability theory and probability distributions in relation to general statistical analysis.</p> <p>CO6 -Student will able to Understand and appreciate the need to solve a variety of business-related problems using a systematic approach involving accepted statistical techniques</p>
9	III	BCO3S-3	Banking theory and practice	<p>After completion of study the students will be able to:</p> <p>CO1 -Understanding the banking operations.</p> <p>CO2 -Understanding the concepts of banking.</p> <p>CO3 -Understanding how to business practices with banking.</p> <p>CO4 -Understanding the new concepts of banking.</p> <p>CO5 -Understanding the organization working of commercial banks, reserve bank of India</p> <p>CO6 -Understand the relation of bank and its customers</p>

10	IV	BCO4S-1	Accounting for service organizations	<p>After the completion of the course, Students will be able to</p> <p>CO1 -About service organizations, sec 8 and other provisions of companies act 2013.</p> <p>CO2 -Able to get the knowledge accounting procedure of electricity companies, life insurance companies, and general insurance companies.</p> <p>CO3 -Gain the knowledge of accounting procedure of banking procedures.</p> <p>CO4 -Gain the knowledge of banking regulation act 1969 and the legal provisions related to preparation of final accounts</p> <p>CO5 -Thus able to prepare accounts of service organizations</p>
11	IV	BCO4S-2	Business law	<p>After completion of study the students will be able to:</p> <p>CO1 -Students acquired knowledge about Contract laws.</p> <p>CO2 -Students acquired knowledge about definition of valid offer.</p> <p>CO3 -Students learned rules relating to minor contracts and contingent contracts.</p> <p>CO4 -Students learned about digital signature and safety mechanisms about cyber law.</p>
12	IV	BCO4S-3	Income tax	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Define the procedure of direct tax assessment.</p> <p>CO2 -Able to file IT return on individual basis.</p> <p>CO3 -Able to compute total income and define tax complicacies and structure.</p> <p>CO4 -Able to understand amendments made from time to time in Finance Act.</p> <p>CO5 -Differentiate between direct and indirect tax assessment.</p>
13	IV	FOUNDATION COURSE -9	Entrepreneurship	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Understanding the role of entrepreneurship in economic development.</p> <p>CO2-Understanding the techniques for generating ideas.</p> <p>CO3 -Understanding the project appraisal techniques, financial analysis.</p> <p>CO4 -Understanding central level institutions such as NABARD; SIDBI etc.</p> <p>CO5-Students acquired knowledge about govt. Policies, tax allowances etc.</p>

14	V	BCO5S-1	Cost accounting	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Define the various components of total cost of a product i.e. direct & indirect cost and fixed & flexible cost.</p> <p>CO2 -Determine various levels of material i.e. reorder level, minimum level, maximum level & EOQ for managing working capital.</p> <p>CO3 -Use methods of time-keeping & time-booking and manage idle & overtime.</p> <p>CO4 -Define the features of overhead or indirect cost of production and basis of allocation and apportionment.</p> <p>CO5 -Use cost-sheet to compute unit cost of product.</p> <p>CO6-Determine basis for computing tender price of a product.</p>
15	V	BCO5S-2	Goods and service tax	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Students acquired knowledge about GST Act.</p> <p>CO2 -Students has acquired information about implementations, amendments and eligibility criteria of the GST Act.</p> <p>CO3 -Students has learned eligibility or not eligible under the input tax credit system.</p> <p>CO4 -Students has learned knowledge about the GS</p>
16	V	BCO5S-3	Commercial geography	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Understanding the latitude, longitude and evolution of Earth.</p> <p>CO2 -Understanding the soils, major crops in India.</p> <p>CO3-Understanding the status of forests in AP and need for protection of Forestry.</p> <p>CO4 -Understanding the use of minerals, mines and water resources – rivers.</p>
17	V	BCO5S-4A	Central banking	<p>After the completion of the course, Students will be able to;</p> <p>CO1 -Understanding development of banks in developed and developing countries.</p> <p>CO2 -Understanding the RBI, constitution and recent developments, RBI Act.</p> <p>CO3-Understanding monetary policy statements of RBI-CRR-SLR and credit control measures.</p> <p>CO4 -Students acquired knowledge intervention mechanism and controlling measures.</p> <p>CO5 -Understanding basic norms and checking of money laundering and frauds.</p>

18	V	BCO5S-4B	Rural and farm credit	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Understanding the classification of rural credit.</p> <p>CO2 - Understanding the financing for rural industries.</p> <p>CO3 -Understanding role of commercial and rural banks and problems of recovery and dues.</p> <p>CO4 -Understanding farm credit analysis and rural credit survey reports.</p>
19	V	BCO5S-PRJ	Rural and farm credit project	<p>After the completion of the course, Students will be able to</p> <p>CO1 - Project work is learning experience which provides the opportunity to relate the knowledge from various areas of learning the subject and apply critically and creatively to the real situations.</p> <p>CO2 - enhances the knowledge and their are able to acquire skills</p> <p>CO3 - It helps them for lifelong learning and there are able to face challenges.</p> <p>CO4 - The project work on rural farm credit helps to students to get the knowledge of credit facility and solution for other problems of farmers.</p>
20	VI	BCO6S-1	Marketing	<p>After the completion of the course, Students will be able to</p> <p>CO1 –Able to understand how a product possessed from different stages.</p> <p>CO2 –Able to understand the difference between trademark and branding.</p> <p>CO3–Able to describe the customer segmentation, target marketing and positioning.</p> <p>CO –Understand different methods of sale promotion</p>
21	VI	BCO6S-2	Auditing	<p>After the completion of the course, Students will be able to</p> <p>CO1 –Student will understand the audit process from the engagement planning stage through completion of the audit, as well as the rendering of an audit opinion via the various report options.</p> <p>CO12–Student will understand auditors’ legal liabilities, and be able to apply case law in making a judgment whether auditors might be liable to certain parties;</p> <p>CO3 –Student will understand to describe the various levels of persuasiveness of different types of audit evidence and explain the broad principles of audit sampling techniques;</p>

				<p>CO4 –Student will understand to discuss the need for an independent or external audit and describe briefly the development of the role of the assurance provider in modern business society;</p> <p>CO5 –Student will able describe the quality control procedures necessary to ensure that a competent assurance engagement is performed, and apply professional ethics including Code of Conduct to specific scenarios</p> <p>CO6 –Student will explain the internal audit process including the professional standards applicable to the internal audit profession.</p>
22	VI	BCO6S-3	Management accounting	<p>After the completion of the course, Students will be able to</p> <p>CO1 - Can use different tools in financial and management accounting in business operations</p> <p>CO2 - Can analyze the changes in working capital for any organization</p> <p>CO3 - Can assess the cash flow and funds flow and impact on business operations</p> <p>CO4 - Able o assess the profitability and solvency of any organization</p> <p>CO5 - Able to take profit making decisions in complex situations of any business organizations</p>
23	VI	BCO6S-5A	Banking and financial services	<p>After the completion of the course, Students will be able to</p> <p>CO1 –Students has understood the financial institutions and its functions.</p> <p>CO2 –Students acquired information about different segmentations of financial institutions in the society.</p> <p>CO3–Students can observe and research functions of different financial institutions like mutual funds, merchant banks, L&T, Housing Finances etc.</p>
24	VI	BCO6S-5B	Marketing of financial services	<p>After the completion of the course, Students will be able to</p> <p>CO1 – Able to manage the service counters</p> <p>CO2 – Able to apply the pricing strategies and promotion strategies and business promotions.</p> <p>CO3 – Able to manage B2B marketing</p> <p>CO4 – Able to design and manage the service processes.</p> <p>CO5 – Able to implement various retail financial services</p>

25	VI	BCO6S-PRJ	Financial services project	<p>After the completion of the course, Students will be able to</p> <p>CO1 – Project work is learning experience which provides the opportunity to relate the knowledge from various areas of learning the subject and apply critically and creatively to the real situations.</p> <p>CO2 – It enhances the knowledge and there are able to acquire skills</p> <p>CO3 – It helps them for lifelong learning and there are able to face challenges.</p> <p>CO4 – This project work on financial services helps the students to get the knowledge of various financial services such as banking finance. Mutual financial services, venture capital, demat services etc...</p>
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HINDU COLLEGE, GUNTUR

(Re-accredited by NAAC as Grade 'A' with CGPA 3.07)

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 PROGRAMME: THREE-YEAR B.Com COMPUTER APPLICATION

Programme Outcomes

Completion of programme the student will

- Acquire strong fundamentals of updated commerce knowledge special in the areas of accounting, marketing, finance, taxation
- Improve the student capability to words invention creativity in problem solving skills in business gain knowledge with different issues of business
- Improve the student's technical skills managerial qualities leadership qualities etc....
- Gain skill on management ,leadership, team work, with social responsibility for making themselves as professional and entrepreneur

S. No	Semester	Course Code	Course	Course Outcome
1	I	BCO1 -SB	Financial accounting	After the completion of the course, Students will be able to CO1 - To record the basic journal entries. CO2 – maintain the accounting records of any organization CO3 -Maintain the financial statements of a business entity. Can compute profitability and financial status of business. CO4 -Rectify errors in accounts.
2.	I	BCO1S - 2	Business Organization and Management	After the completion of the course, Students will be able to CO1 - To understand the basic concepts in commerce, trade and industry and acquire the knowledge of business organization CO2 - Obtained the knowledge and structure of industry. CO3 - To get the knowledge of managerial traits and talents essential to face emerging challenge of managing business CO4 - Understand the stages in planning and organizing CO 5 - Able to evaluate tools and techniques of recruitment, directing and controlling process.

3.	I	BCO1S -3	Business economics	<p>After completion of study the students will be able to:</p> <p>CO1 -Describe the Nature of economics – at micro and macro level</p> <p>CO2 -Analyze the supply and demand and its impact on consumer behavior</p> <p>CO3 –Able to measure the elasticity of demand in different methods.</p> <p>CO4 -analyze the cost and revenue</p>
4.	II	BCO2S-1	Financial accounting-II	<p>After completion of study the students will be able to:</p> <p>CO1 -Gains the knowledge of special transactions regarding accounting for consignment</p> <p>CO2 -Acquire the knowledge of techniques of bills of exchange</p> <p>CO3 -Ascertain the knowledge profitability and financial position of an enterprise from incomplete records</p> <p>CO4 -Able to understand different types provisions and reserves and their accounting treatment in final accounts</p> <p>CO5 -Get the knowledge various methods of depreciation of assets</p>
5	II	BCO2S-2	Business environment	<p>After completion of study the students will be able to</p> <p>CO1 -Define various elements internal as well as External affecting business environment.</p> <p>CO2 -Explain the techniques like SWOT analysis.</p> <p>CO3 -Define the terms like inflation, GDP, etc.</p> <p>CO4 -Define the consequences with regard to BOP.</p> <p>CO5 -Explain the economic trends and effect of Gov policies as LPG</p>
6	II	BCO2S-3	Business Economics	<p>After completion of study the students will be able to</p> <p>CO1 - Able to estimate minimization of cost Maximization of profits.</p> <p>CO2 - Can able to estimate the cost of production Able to analyze the various market structures.</p> <p>CO3 - Able to understand the national income, GDP And different economic systems.</p> <p>CO4 - Understand the liberalization, privatiz globalization.</p> <p>CO5 - Understand the concept of international trade.</p>

7	III	BCO3S-1	Corporate accounting	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Learn about the journal entries of issue of shares and issue of debentures.</p> <p>CO2-To know about the meaning of companies and working style of companies.</p> <p>CO3 -Know about the final accounts of the companies.</p> <p>CO4 -Learn about the valuation method of shares and goodwill and measurement of performance of companies.</p> <p>CO5 -Work with profit prior to incorporation and post incorporation profits in companies' accounts.</p> <p>CO6 -Learn about the concept of sources of redemption of debentures and redemption of preference shares</p>
8	III	BCO3S-2	Business statistics	<p>After completion of study the students will be able to:</p> <p>CO1 -Student will able to apply knowledge to solve simple tasks using computer (MS Excel)</p> <p>CO2 -Student will able to independently calculate basic statistical parameters (mean, measures of dispersion, correlation coefficient, indexes)</p> <p>CO3 -Student will able to interpret the meaning of the calculated statistical indicators</p> <p>CO4 -Student will able to choose a statistical method for solving practical problems</p> <p>CO5 -Student will able to explain probability theory and probability distributions in relation to general statistical analysis.</p> <p>CO6 -Student will able to Understand and appreciate the need to solve a variety of business-related problems using a systematic approach involving accepted statistical techniques</p>
9	III	BCO3S-3	Banking theory and practice	<p>After completion of study the students will be able to:</p> <p>CO1 -Understanding the banking operations.</p> <p>CO2 -Understanding the concepts of banking.</p> <p>CO3 -Understanding how to business practices with banking.</p> <p>CO4 -Understanding the new concepts of banking.</p> <p>CO5 -Understanding the organization working of commercial banks, reserve bank of India</p> <p>CO6 -Understand the relation of bank and its customers</p>

10	IV	BCO4S-1	Accounting for service organizations	<p>After the completion of the course, Students will be able to</p> <p>CO1 -About service organizations, sec 8 and other provisions of companies act 2013.</p> <p>CO2 -Able to get the knowledge accounting procedure of electricity companies, life insurance companies, and general insurance companies.</p> <p>CO3 -Gain the knowledge of accounting procedure of banking procedures.</p> <p>CO4 -Gain the knowledge of banking regulation act 1969 and the legal provisions related to preparation of final accounts</p> <p>CO5 -Thus able to prepare accounts of service organizations</p>
11	IV	BCO4S-2	Business law	<p>After completion of study the students will be able to:</p> <p>CO1 -Students acquired knowledge about Contract laws.</p> <p>CO2 -Students acquired knowledge about definition of valid offer.</p> <p>CO3 -Students learned rules relating to minor contracts and contingent contracts.</p> <p>CO4 -Students learned about digital signature and safety mechanisms about cyber law.</p>
12	IV	BCO4S-3	Income tax	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Define the procedure of direct tax assessment.</p> <p>CO2 -Able to file IT return on individual basis.</p> <p>CO3 -Able to compute total income and define tax complicacies and structure.</p> <p>CO4 -Able to understand amendments made from time to time in Finance Act.</p> <p>CO5 -Differentiate between direct and indirect tax assessment.</p>
13	IV	FOUNDATION COURSE -9	Entrepreneurship	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Understanding the role of entrepreneurship in economic development.</p> <p>CO2-Understanding the techniques for generating ideas.</p> <p>CO3 -Understanding the project appraisal techniques, financial analysis.</p> <p>CO4 -Understanding central level institutions such as NABARD; SIDBI etc.</p> <p>CO5-Students acquired knowledge about govt. Policies, tax allowances etc.</p>

14	V	BCO5S-1	Cost accounting	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Define the various components of total cost of a product i.e. direct & indirect cost and fixed & flexible cost.</p> <p>CO2 -Determine various levels of material i.e. reorder level, minimum level, maximum level & EOQ for managing working capital.</p> <p>CO3 -Use methods of time-keeping & time-booking and manage idle & overtime.</p> <p>CO4 -Define the features of overhead or indirect cost of production and basis of allocation and apportionment.</p> <p>CO5 -Use cost-sheet to compute unit cost of product.</p> <p>CO6-Determine basis for computing tender price of a product.</p>
15	V	BCO5S-2	Goods and service tax	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Students acquired knowledge about GST Act.</p> <p>CO2 -Students has acquired information about implementations, amendments and eligibility criteria of the GST Act.</p> <p>CO3 -Students has learned eligibility or not eligible under the input tax credit system.</p> <p>CO4 -Students has learned knowledge about the GS</p>
16	V	BCO5S-3	Commercial geography	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Understanding the latitude, longitude and evolution of Earth.</p> <p>CO2 -Understanding the soils, major crops in India.</p> <p>CO3-Understanding the status of forests in AP and need for protection of Forestry.</p> <p>CO4 -Understanding the use of minerals, mines and water resources – rivers.</p>
17	V	BCO5S-4A	Central banking	<p>After the completion of the course, Students will be able to;</p> <p>CO1 -Understanding development of banks in developed and developing countries.</p> <p>CO2 -Understanding the RBI, constitution and recent developments, RBI Act.</p> <p>CO3-Understanding monetary policy statements of RBI-CRR-SLR and credit control measures.</p> <p>CO4 -Students acquired knowledge intervention mechanism and controlling measures.</p> <p>CO5 -Understanding basic norms and checking of money laundering and frauds.</p>

18	V	BCO5S-4B	Rural and farm credit	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Understanding the classification of rural credit.</p> <p>CO2 - Understanding the financing for rural industries.</p> <p>CO3 -Understanding role of commercial and rural banks and problems of recovery and dues.</p> <p>CO4 -Understanding farm credit analysis and rural credit survey reports.</p>
19	V	BCO5S-PRJ	Rural and farm credit project	<p>After the completion of the course, Students will be able to</p> <p>CO1 - Project work is learning experience which provides the opportunity to relate the knowledge from various areas of learning the subject and apply critically and creatively to the real situations.</p> <p>CO2 - enhances the knowledge and their are able to acquire skills</p> <p>CO3 - It helps them for lifelong learning and there are able to face challenges.</p> <p>CO4 - The project work on rural farm credit helps to students to get the knowledge of credit facility and solution for other problems of farmers.</p>
20	VI	BCO6S-1	Marketing	<p>After the completion of the course, Students will be able to</p> <p>CO1 –Able to understand how a product possessed from different stages.</p> <p>CO2 –Able to understand the difference between trademark and branding.</p> <p>CO3–Able to describe the customer segmentation, target marketing and positioning.</p> <p>CO –Understand different methods of sale promotion</p>
21	VI	BCO6S-2	Auditing	<p>After the completion of the course, Students will be able to</p> <p>CO1 –Student will understand the audit process from the engagement planning stage through completion of the audit, as well as the rendering of an audit opinion via the various report options.</p> <p>CO12–Student will understand auditors’ legal liabilities, and be able to apply case law in making a judgment whether auditors might be liable to certain parties;</p> <p>CO3 –Student will understand to describe the various levels of persuasiveness of different types of audit evidence and explain the broad principles of audit sampling techniques;</p>

				<p>CO4 –Student will understand to discuss the need for an independent or external audit and describe briefly the development of the role of the assurance provider in modern business society;</p> <p>CO5 –Student will able describe the quality control procedures necessary to ensure that a competent assurance engagement is performed, and apply professional ethics including Code of Conduct to specific scenarios</p> <p>CO6 –Student will explain the internal audit process including the professional standards applicable to the internal audit profession.</p>
22	VI	BCO6S-3	Management accounting	<p>After the completion of the course, Students will be able to</p> <p>CO1 - Can use different tools in financial and management accounting in business operations</p> <p>CO2 - Can analyze the changes in working capital for any organization</p> <p>CO3 - Can assess the cash flow and funds flow and impact on business operations</p> <p>CO4 - Able o assess the profitability and solvency of any organization</p> <p>CO5 - Able to take profit making decisions in complex situations of any business organizations</p>
23	VI	BCO6S-5A	Banking and financial services	<p>After the completion of the course, Students will be able to</p> <p>CO1 –Students has understood the financial institutions and its functions.</p> <p>CO2 –Students acquired information about different segmentations of financial institutions in the society.</p> <p>CO3–Students can observe and research functions of different financial institutions like mutual funds, merchant banks, L&T, Housing Finances etc.</p>
24	VI	BCO6S-5B	Marketing of financial services	<p>After the completion of the course, Students will be able to</p> <p>CO1 – Able to manage the service counters</p> <p>CO2 – Able to apply the pricing strategies and promotion strategies and business promotions.</p> <p>CO3 – Able to manage B2B marketing</p> <p>CO4 – Able to design and manage the service processes.</p> <p>CO5 – Able to implement various retail financial services</p>

25	VI	BCO6S-PRJ	Financial services project	<p>After the completion of the course, Students will be able to</p> <p>CO1 – Project work is learning experience which provides the opportunity to relate the knowledge from various areas of learning the subject and apply critically and creatively to the real situations.</p> <p>CO2 – It enhances the knowledge and there are able to acquire skills</p> <p>CO3 – It helps them for lifelong learning and there are able to face challenges.</p> <p>CO4 – This project work on financial services helps the students to get the knowledge of various financial services such as banking finance. Mutual financial services, venture capital, demat services etc...</p>
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HINDU COLLEGE :: GUNTUR



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HINDU COLLEGE, GUNTUR

(Re-accredited by NAAC as Grade 'A' with CGPA 3.07)

Main Road, Opp. Sri Venkateswara Vignan Mandir, Guntur

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016

PROGRAMME: THREE-YEAR B.A. ECONOMICS

Programme Outcomes (POs)

After the completion of the B. A. (H.E.P.) Programme, the students will be able to achieve the following outcomes:

PO1. Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational and personal) from different perspectives.

PO2. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and by connecting people, ideas, books, media and technology across the World.

PO3. Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4. Effective Citizenship: Demonstrate empathetic social concern and equity-centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5. Ethics: Recognize different value systems including that of own, understand the moral dimensions of our decisions, and accept responsibility for them.

PO6. Environment and Sustainability: Understand the issues in the contexts of environmental and sustainable development.

PO7. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.

Programme (Economics) Specific Outcomes (PSO)

After completion of Economics programme, the students will be in a position to take informed decisions with regard to the following:

PSO1 - How the consumers and producers will take rational decisions in the context of unlimited needs and availability of scarce resources;

PSO2 – How the economy at the aggregate level works, what are the determinants of national income, prices, demand for and supply of money, poverty, and unemployment in an economy;

PSO3 - He/she Gets understanding of the process of economic growth, economic development, sustainable growth in the context of existence of trade-off between rapid economic growth and environmental sustainability in the longrun;

PS04 - He/she will be able to apply the determinants of economic growth and development to the economies of India and Andhra Pradesh and appraise the fiscal, monetary and other socio-economic policies being pursued in India and Andhra Pradesh

PS05 – He/she will get a basic understanding of Statistical Methods with a view to applying them to economics and real life situations

Course outcomes of Economics (UG)

Semester I Micro Economics – Consumer Behaviour

The objectives of this course are.

- To understand consumer behavior and its application in economics.
- To know the producers' behavior and various theories of production.
- To know various forms of market structures: competitive market and imperfectly competitive markets.
- To know factor market behavior and distribution

Course Outcomes Upon successful completion of the course, a student will be able to:

CO1. To give conceptual clarity of the theories of Micro Economics.

CO2. To apply the principle of constrained optimization to firms and consumers.

CO3. To know the application of theory of production and cost structure.

CO4. To comprehend various market structure and its real world application.

CO5. To extend the microeconomic principles to factor markets

Semester II - Micro Economics - Production and Price Theory

CO1: To familiarize the students with the basic concept of **microeconomics**.

CO2: To familiarise students with the **production and cost** structure under different stages of **production**.

CO3: To understand the **pricing** and output decisions under various market structure.

Semester – III - Macro Economics - National Income, Employment and Money

Course Objectives: The objectives of this course are:

1. The purpose of this course is to help students learn the fundamentals of economics and they can apply these concepts to their lives and to the world in which they live.
2. Economic theory is useful and interesting only if it can be applied to understanding actual events in energy sector and policies. Therefore this course gives greater understanding about economic news and issues of energy around the world.
3. It helps in decision making in order to achieve desired economic goals. It enhances the capability of participants to understand the prevailing economic and business policy in totality and its impact on the energy sector.

4. It improves the ability of the students to apply economic concepts to complex business realities as well as support them to forecast in the energy business.

Course Outcomes: Upon successful completion of the course a student will be able to:

CO1. Explain the concepts of Macroeconomics and its interrelations with Microeconomics.

CO2. Associate the current economic phenomenon with existing theory and put their views on contemporary economic issues.

CO3. Apply the principle of Macroeconomics in explaining the behaviour of Macroeconomic variables at national as well as global level.

CO4. Extend the concepts of Macroeconomics in unfolding the dynamics of energy sectors.

Semester – IV - Banking and International Trade

The objectives of this course :

1. To Gain understanding of the basic concepts and principles of International trade, role of the government through its policy, balance of payment accounts and BOP crisis.

2. To outline the historical perspective of globalization and Role of WTO, its functions and its implications on the world trade

3. To help in understanding EXIM policy, FDI regulations, role of trade credit agencies and FEMA. And to explicate the basics of International Financial markets such as Capital markets, Forex markets, Debt Instruments, Rupee convertibility etc.

4. To expound investment decisions, capital budgeting, risks reward linkage, risk factors and Real Options in Capital budgeting decisions.

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

CO1.Explain the fundamental theories and concepts of international trade and finance and apply for the management decisions.

CO2.Apply functions, provisions of international trade system and functions to facilitate the global trade. Students will be able analyse impact of WTO on current global trade in detail.

CO3.Analyse the organizations allocate portfolio assets and take investment decisions. Students will be able to apply the different methods to mitigate the foreign trade and exchange rate risks in their respective organizations after they are recruited.

CO4.Integrate concept and apply the knowledge of capital budgeting decisions to mitigate the financial risks of organizations.

Semester – V - Economic Development and Indian Economy

On completion of the course students will be able to:

CO1. Develop ideas of the basic characteristics of Indian economy, its potential on natural resources. CO2. Understand the importance, causes and impact of population growth and its distribution, translate and relate them with economic development.

CO3. Grasp the importance of planning undertaken by the government of India, have knowledge on the various objectives, failures and achievements as the foundation of the ongoing planning and economic reforms taken by the government.

CO4. Understand agriculture as the foundation of economic growth and development, analyse the progress and changing nature of agricultural sector and its contribution to the economy as a whole. CO5. Not only be aware of the economy as a whole, they would understand the basic features of Mizoram's economy, sources of revenue, how the state government finance its programmes and projects.

Semester – V - Indian and Andhra Pradesh Economy

At the end of the course, the student is expected to demonstrate the following cognitive abilities and psychomotor skills. 1

CO1. Remembers and states in a systematic way (Knowledge) a. leading issues of Indian economic development with reference to potential for growth, obstacles and policy responses b. Objectives, outlays and achievements of economic plans and growth strategies

CO2. Explains (understanding) a. Available Resources, demographic issues, general problems of poverty and unemployment and relevant policies b. Sector specific problems, remedial policies and their effectiveness relating to Agriculture and Industrial Sectors of Indian and AP economy and infrastructure issues of AP economy c. Indian Tax system, recent changes, issues of public expenditure and public debt, recent finance commissions and devolution of funds d. Major issues of economic development of Andhra Pradesh after bifurcation and Central assistance

CO3. Critically examines using data and figures (analysis and evaluation) a. Leading issues of current importance relating to India and AP economy, major policies and programmes b. Covid- 19 and its impact on Indian economy

CO4. Uses official statistical data and reports including tables and graphs a. To explain the achievements of Indian economy with reference to the objectives of planning and policy and make critical evaluation

Semester - VI Paper - VII-(A) (Elective Paper VII-(A) AGRICULTURAL ECONOMICS

On completion of the course students would be able to:

CO1. Sensitize the overall development and engine of growth in agriculture. Draw distinctive features of rural and urban economy or agricultural and non-agricultural which can influence the whole economy.

CO2. Learn and identify the opportunities open/available in those flourishing sectors such as horticulture, fishing and floriculture and forestry. Find new investment opportunities to add income and employment.

CO3. Understand limited resources available in the economy. Realize the need to exploit and utilize through development and improvement of production techniques.

CO4. Make them aware of the availability of rich natural endowments to achieve sustainable agricultural development. With this knowledge they can challenge the problems of unemployment, inequality, shortage of food productions, poverty, and be useful to compete advanced agricultural economies.

CO5. Gain knowledge of the causes of regional variations in productivity and production, social and economic inequality, size of land holdings and lack of quality inputs etc. and suggest appropriate measures for the whole economy

Semester - VI Paper - VIII-A; Cluster Elective-A: agribusiness Environment in Andhra Pradesh

Course objectives:

- To provide a learning exposure to students about the environment where Agri Business is conducted
- To enable student to understand policy environment, public - private policy domains, Agri sub sector analysis
- To enable students to appreciate the range of possible government agribusiness sector interventions

CO1. Various linkages of agribusiness in academic, industry and public sector

CO2. Developing a policy paper

CO3. Relationship in different components of agribusiness and predicting trends in the domain

Semester - VI - Paper - VIII-A; Cluster Elective - A: Agricultural Output Marketing:

CO1. Enable students to gain knowledge on agricultural marketing, challenges and prospects for improving agricultural marketing system

CO2. Gain skills to analyze Marketing Functions, Market Information and Intelligence

CO3. Imparting knowledge of the marketing efficiency and agricultural prices

CO4. Learn the Markets and Market Structure

CO5. Provide the platform to the students of Marketing of Agricultural Inputs

Semester - VI - Paper VIII – A – 3: Agricultural Input Marketing

CO1. Give the students an understanding of different marketing concept and marketing system in context of agricultural inputs.

CO2. Understand to the Overview of Input Marketing

CO3. Understand to the Seed Marketing

CO4. Understand to the Fertilizer Marketing, Plant Protection Chemicals.

CO5. Understand to the Farm Machinery and Implement.



HINDU COLLEGE, GUNTUR

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Main Road, Opp. Sri Venkateswara Vignan Mandir, Guntur

DEPARTMENT OF HISTORY UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 PROGRAMME: THREE-YEAR B.A. HISTORY

PROGRAM OUTCOME OF BACHLOR OF ARTS (B.A.)

History students at Graduation that is B.A. Programme are expected to encourage with following quality which helps them in their future life to achieve the expected goals.

1. Acquire facts and Historian, history as Science and Arts.
2. Specialized of human values and making good citizens.
3. Responsible and dutiful citizen for the nation.
4. Critical thinking skills
5. To be able to communicate effectively in written, graphical & chronicle form.
6. Problem solving skills.
7. Quantitative, Reasoning Skills.

PROGRAM SPECIFIC OUTCOMES (B.A. HISTORY)

- PS01: Students will be able to demonstrate a breadth of training across historical time and space.
- PS02: Students will be able to develop an in-depth understanding of a field, theme or region.
- PS03: Students will be able to demonstrate an historical awareness of the diversity of the human experience across time and space (research papers)
- PS04: Students will be able to apply, assess and debate the major historical schools of thought, methodology and types of sources that historians use to make original arguments (research papers)
- PS05: Students will be able to formulate historical arguments and communicate those arguments in clear and persuasive prose that is Minds.
- PS06: Methodology – Heuristic Criticism – Synthesis – Exposition Errors of History – Objectivity in history.

COURSE OUTCOMES

PAPER-I

ANCIENT INDIAN HISTORY AND CULTURE

(FROM EARLIEST TIMES TO 600 A.D.)

1. The student understands the relations between Geography and History
2. Student can remember the life of early man through stone age culture.
3. Will be aware about the Indus Valley Civilization and Development.
4. Understands condition of 6th Century B.C and formation of Jainism and Buddhism.
5. Will know about the 16 Mahajapadhas and rise of Magadha it's importance.
6. Is aware of the administrative structures and Mouryan and Dhamma Policy of Ashoka.
7. Can analyze this Socio, Economic and Cultural conditions of Satavahanas and Kushanas.
8. Will understand the Socio, Economic, cultural, Science and Technological developments in Gupta period.
9. Importance of Geography and Chronicle to the history.

PAPER-II

EARLY MEDIVAL INDIAN HISTORY AND CULTURE (600-1526 A.D.)

1. The student is able to identify the different style of architecture from Pallavas and Chalukyas overall outlook on South India.
2. Will be aware of the administrative structure of Cholas particular reference to the Village Administration.
3. Will know about the composition and function of Sultanate administrative structure of Delhi Sultanas period 1206 to 1526.
4. Comparative study for Indo Islamic Culture, heritage of religion.

PAPER-III
LATE MEDIVAL AND COLONIAL HISTORY OF INDIA
(1526-1857 A.D.)

1. The student understands Sharsha Administration & it's impact on Indian Administration to the coming generations.
2. Gains knowledge about the Marathas and their administration.
3. Understands the Administration, Economy, Society and Cultural Development under the Mughal Period Merits and Demerits.
4. Remember the policy of East India Company, their administration, How they exploit Indian economy and surprised Indian.

PAPER-IV
SOCIAL REFORM MEOVEMENT OF FREEDOM STRUGGLE
(1820-1947 A.D.)

1. Understand the cause of the revolts and peseants, tribes and sipoys in 19th century.
2. Learn about Socio, Religious movement in India. With special reference to Brahma Samaj, Arya Samaj, Ramakrishna Mission.
3. Can acquire the knowledge of different stage of Freedom Movement i.e.
 1. 1885 – 1905
 2. 1905 – 1919
 3. 1919 – 1947
4. Can identify the nature of Gandhi Movements. How far essential to the coming generation.
5. Observe the unification of India under the Leadership of Sardhar Vallabhai Patel after Independence.

PAPER-V
HISTORY OF MODERN WORLD (1453-1821 A.D.)

- C01: Understand about the nature of Feudalism.
- C02: Compare the Medieval Europe and Modern Europe with special reference to Renaissance, Reformation and Counter Reformation.
- C03: Student gain knowledge about the cause and results of Americans, Revolution, Reformation & Counter Reformation.
- C04: Student should know about the French revolution and teaching of Philosophers, Diderot, Voltaire, Rousseau.

PAPER-VI
HISTORY AND CULTURE OF ANDHRA DESHA
(12TH – 19TH CENTURY A.D.)

- C01: The students understand the Social, Economic, Cultural conditions of 12th & 18th centuries special reference to Kakatiya & Reddy Kingdom.
- C02: Understand the unification movement of Italy & Germany in Europe.
- C03: The student analysis the unification movement in Europe.
- C04: Student is aware of causes & results of World Wars 1914-1919.

PAPER-VII
HISTORY OF MODERN WORLD (19TH CENTURY TO 1945 A.D.)

- C01: The student compare the condition of Industrial Revolution before & after in Europe as well as in India.
- C02: To understand the Unification Movement of Germany & Italy in Europe.
- C03: Student can analyze the Unification Movement in Europe.
- C04: Will be aware of the causes and results of World Wars.
- C05: Acquire knowledge and its functions, origin and establishment.

PAPER-VIII

POPULAR MOVEMENTS IN ANDHRA DESHA (1848-1956 A.D.)

- C01: The student understands the Socio, Religious movement in Andhra with special reference to Kandukuri Veeresalingam.
- C02: The student observes the Vandematharam movement with special reference to Kakinada conflicts.
- C03: Can compare the three phases of Freedom Struggle in Andhra
1) 1885 – 1905 2) 1905 – 1919 3) 1919 – 1947.
- C04: Student will be aware about the Gandhian period 1919 – 1947.
- C05: Can analyze the separation of Andhra State and Formation of Andhra Pradesh.

PAPER-IX

CONTEMPORARY HISOTRY OF ANDHRA PRADESH (1956-2014 A.D.)

- C01: Can understand the development of Andhra in various sectors after formation of Andhra Pradesh.
- C02: Will observe the cause and impact of Communist Narallbary.
- C03: Aware on the early trends towards Bifurcation of Andhra Pradesh.
- C04: The student can acquire the knowledge of the Bifurcation of Andhra Pradesh again and again.

PAPER-X

PROJECT WORK ON HISTORICAL ISSUES AND RELATED TOPICS

- C01: The student understands the basic concepts of research work.
- C02: The student identifies the various historical places in India and abroad.
- C03: Practical knowledge will be implied through the project work.
- C04: They learn how to collect primary and secondary data collection for project work.
- C05: Could pave the future of the student as a research scholar.



HINDU COLLEGE, GUNTUR

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UNDER CBCS FRAMEWORK WITHS EFFECT FROM 2015-16

PROGRAMME: THREE-YEAR B.A. POLITICAL SCIENCE

Programme Outcomes:

Po1: Students can understand the world in which they are living

Po2: Students will have comprehensive knowledge and understanding on the national and international issues

Po3: Students will be able to choose the best among the opportunities available to bring wise and desirable changes in the political system.

Po4: Students will develop knowledge of theories, concepts and research methods in humanities and social sciences.

Po5: Political knowledge and consciousness will be developed in students.

Po6: Students will posses basic subject knowledge for higher studies and will be able to compete the competitive examinations successfully.

Programme Specific Outcomes:

Ps01: Students should be able to understand concepts intrinsic to the study of political science

Ps02: Students should be in a position to understand and follow changes in patterns of political behaviour, ideas and structures

Ps03: Students should have to apply the political knowledge to observe the field level phenomena.

Ps04: Students should be able to understand the cultural, social, political, economic and constitutional environment as historical perspective of Indian administration.

Ps05: Students should understand the processes and dynamics of Indian government and politics.

Ps06: Students should be able to apply their skills to work effectively in multi-disciplinary teams

Ps07: Enabling students to develop a positive attitude towards political science as an interesting and valuable subject of study.

Course Outcomes:

Course: Semester 1 – Basic Concepts of Political Science

Co1: To explain definition, nature scope and importance of Political Science

Co2: To delineate the Approaches to the study of Political Science and elements of the State

Co3: To highlight the concepts of nation, nationality and nationalism

Co4: To acquaint with the importance of Rights and Citizenship

Co5: To analyse the concepts of Freedom, Equality and Justice.

Course: Semester-II – Political Institutions

Co1: To understand the purpose of Constitutional Law, Theory of Separation of Powers and basic features of Parliamentary and Presidential forms of Government

Co2: To possess comprehensive understanding on the basic features of Federal form of Government and Unitary form of Government

Co3: To specify the features of Democracy and models of Democracy

Co4: To study the nature, role and functions of the Judiciary and Judicial Review.

Course: Semester-III – Indian Constitution

Co1: To cover the ideological legacy of the Indian National Movement on the Constituent Assembly and the nature and composition of the Constituent Assembly

Co2: To understand the preamble and salient features of the constitution of India

Co3: To acquaint with the Fundamental Rights and Directive Principles of State Policy

Co4: To deal with Unitary and Federal features in the Indian Constitution and Tension areas between the Union and State governments

Co5: To underline the working of the Indian Constitution.

Course: Semester-IV – Indian Political Process

Co1: To familiarise with the approaches to study the political processes in India

Co2: To deal with social structure and Democratic process

Co3: To highlight religion and politics

Co4: To understand party and electoral processes in India.

Course: Semester-V – Indian Political Thought

Co1: To understand the Contribution of Ancient Indian Political Thinkers to Indian Political Thought

Co2: To familiarise the importance of Renaissance Thought

Co3: To deal with the early Nationalism

Co4: To understand the Religious Nationalism

Co5: To explain the Democratic Egalitarianism.

Course: Semester-VI – Western Political Thought

Co1: To delineate the contribution of Classical Political Thinkers to Western Political Thought

Co2: To cover the Early Medieval Period to the beginning of the Modern Thought

Co3: To highlight the importance of Liberal Thought

Co4: To understand the basic concept of Liberal Democratic Thought

Co5: To enlighten the Philosophical Idealism and its critique.

Course: Semester-VII– Principles of Public Administration

Co1: To familiarise with the Meaning, Nature and Scope of Public Administration

Co2: To discuss various Administrative Theories

Co3: To deal with various Principles of Organization

Co4: To cover the Structure of various Organizations

Co5: To understand different Theories of Motivation.



HINDU COLLEGE, GUNTUR

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DEPARTMENT OF ENGLISH UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 SPECIAL ENGLISH

I SEMESTER

Literature is the reflection of the society.

CO1. To know literature means to know Men and Manners .

CO2. That is to know the soul of man. In first semester, the student is able to know the History of English literature, philology literary terms.

CO3. He learns the basics of literature.

II SEMESTER

The student is able

CO1. To learn the Renaissance and Jacobean periods. He learns literary forms.

CO2. He gets knowledge from Shakespeare dramas. He gets knowledge in poetry and in prose.

III SEMESTER

A Reader is able

CO1. To get knowledge from Restoration period of 17th and 18th centuries.

CO2. He learns the poetry of Alexander Pope.

CO3. He learns prose from Robinson Crusoe, he gets knowledge from Congreve's drama "The Way of the World".

IV SEMESTER

CO1. Literature students get an awareness from Romantic and Victorian periods.

CO2. They learn literary forms. Students learn John Keats poetry, Jane Austin prose, Robert Browning's poetry.

CO3. They are able to know the Men in Romantic period.

V SEMESTER

CO1. He learns literature of 20th century and literary forms, poetry of Philip Larkin, Prose of George Orwell and Drama of G.B. Shaw.

VI SEMESTER

CO1. Literature students study so many cultures of so many ages like American, Indo-Anglian, Common Wealth and 20th century literatures.

CO2. He learns History of English language, Literary elements, Prose, Poetry, Drama and Novel.

CO3. History records events where as literature records the ideals of human beings like love, hatred, goodness and badness, kindness and cruelty these are all human ideals in our lives, that's why the literature is reflection of the society.



HINDU COLLEGE, GUNTUR

(Re-accredited by NAAC as Grade 'A' with CGPA 3.07)

Main Road, Opp. Sri Venkateswara Vignam Mandir, Guntur

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016

PROGRAMME: THREE-YEAR B.A. /B.Sc. MATHEMATICS

Programme outcomes

PO1: Scientific temper will be developed in Students.

PO2: Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in the science stream.

PO3: Students will become employable; they will be eligible for career opportunities in Industry, or will be able to opt for entrepreneurship.

PO4: Students will possess basic subject knowledge required for higher studies, professional and

applied courses like Actuaries, Management Studies, Law etc.

PO5: Students will be aware of and able to develop solution oriented approach towards various

Social and Environmental issues.

Programme specific outcomes

PSO1: A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations , terminology.

PSO2: A student should get adequate exposure to global and local concerns that explore them many aspects of mathematical sciences.

PSO3 : Student is equipped with mathematical modeling ability, problem solving skills, creative talent and power of communication necessary for various kinds of employment.

PSO4: Student should be able to apply their skills and knowledge that is translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.

PSO5: Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

Course outcomes

Course : Semester I - Ordinary Differential Equations

CO1: To learn methods to solve linear differential equation with constant and variable coefficients.

CO2: To learn methods for solving non-homogenous differential equation.

CO3: To learn method of variation of parameter to solve linear differential equations.

CO4: To solve first order and higher degree differential equations.

CO5: To solve orthogonal trajectories

Course: Semester II – 3D Geometry

CO1: To learn methods of finding various equations of planes and properties and get the knowledge of planes.

CO2. To learn basic idea of lines, sphere and cones.

CO3. To understand the properties of planes, lines, spheres and cones.

CO4. To express the problems geometrically and then to get the solution.

Course : Semester III - Group Theory

CO1: To learn fundamental properties and mathematical tools such as closure, identity, inverse and generators.

CO2: To study algebraic structure ‘Groups’ in detail which is useful in study of Rings, Modules, Algebraic topology, Analysis

CO3: To enhance abstract thinking of students.

CO4: To learn to compare two different algebraic structures and study transfer of properties in- between these structures through homomorphism and isomorphism.

Course: Semester IV - Real Analysis

CO1: To learn basic techniques and examples in analysis to be well prepared for courses like Topology, Measure theory and Functional analysis.

CO2: To study various types of sets and relations, and concept of countable and uncountable.. CO3: To study notion of lub and glb which helps to learn integrations which helps to find area under any functions.

CO4: To apply notion of derivative in mean value theorem and also in higher order derivatives which arise in all applied sciences

CO5 To study concept of sequence and series and hence find sum of infinite terms with different Methods.

CO6 To study theory and applications of Rolle’s theorem, Cauchy mean value theorem and Lagrange’s mean value theorem and Taylor series.

CO7 To learn Riemann Integral and its properties in detail, leading to fundamental theorem of calculus and Mean value theorems.

CO8: To study different tests for solving improper integrals of first and second kind.

CO9: To study pointwise and uniform convergence of sequences and series of functions.

Course: Sem V - Linear Algebra

CO1: To learn the importance of vector spaces, basis and dimension and linear transformation in Physics, Engineering, Social sciences and various branches of Mathematics.

CO2: To learn to find Eigen values and Eigen vectors of a matrix which is used in the study of vibrations, chemical reactions and geometry.

CO3: To learn Inner Product spaces and Gram-Schmidt process of orthogonalization. CO4: To get well equipped with Mathematical Modelling abilities.

Course : Semester V - Ring Theory

CO1: To study the algebraic structure Ring in detail through various examples. CO2: To learn the construction of field of quotients of an integral domain. CO3: To study the Rings of polynomials and its factorization over a field.

CO4: To study the notion of ideals and factor rings with examples.

CO5: To study Unique Factorization domain, Euclidean Domain and related results

Course : Semester V - Vector Calculus

CO1: Learn conceptual variations while advancing from one variable to several variables in calculus.

CO2: Vector differentiation and problems.

CO3: Inter-relationship amongst the line integral, double and triple integral formulations.

CO4: Applications of multivariable calculus tools and importance of Green, Gauss and Stokes' theorems in other branches of mathematics.

Course: Semester VI - Numerical Analysis

CO1: To learn to apply the various numerical techniques for solving real life problems.

CO2: The problems which cannot be solved by usual formulae and methods can be solved approximately by using numerical techniques.

CO3: To fit curve to the data by using 5 different methods of interpolation as well as extrapolation.

CO4: To find approximate solutions to difficult differential equations occurring in engineering sciences.

Course: Semester – VI Project

CO1: Problem solving skills of students are enhanced.

CO2: Theoretical concepts are strengthened by solving maximum no. of problems

CO3: Due to one to one interaction with the teacher doubts of the students get cleared if any.

CO4 : Students learn how to apply mathematical concepts to practical and real life problems.

CO5: Interdisciplinary approach is developed.

Course: Semester VI – Laplace Transforms

CO1: To learn the evaluation of Laplace transform of different types of functions, their derivatives and integrations.

CO2: To learn the evaluation of Inverse Laplace transform of functions, their derivatives and integrations, and to learn application of Convolution theorem.

CO3: To learn to apply Laplace Transform to solve Ordinary Differential equations with constant coefficients.

CO4: To learn to evaluate the Fourier series of various even and odd functions

Course: Semester VI – Integral Transforms

CO1: Know about piecewise continuous functions, Dirac delta function, Laplace transforms and its properties. CO2: Solve ordinary differential equations using Laplace transforms.

CO3: Familiarise with Fourier transforms of functions, relation between Laplace and Fourier transforms.

CO4: Explain Parseval's identity and applications of Fourier transforms to boundary value problems.

CO5: Learn Fourier series, Bessel's inequality, term by term differentiation and integration of Fourier series.

Course: Semester VI – Advanced Numerical Analysis

CO1: To learn Least Square procedures of fitting to straight line, power function, parabola and exponential function.

CO2: To study concepts of numerical differentiation and working knowledge of problems with difference operators.

CO3: To learn notions of numerical integration and various methods of numerical integration

CO4: To solve system of linear equations by adopting numerical methods Gauss elimination, Gauss Jordan and LU decomposition methods.

CO5: To solve differential equations which can't be solved analytically by Picards, Modified Euler's, R K method.



HINDU COLLEGE, GUNTUR

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Main Road, Opp. Sri Venkateswara Vignan Mandir, Guntur

DEPARTMENT OF STATISTICS

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015–2016

OBJECTIVES OF DEPARTMENT OF STATISTICS:

- ❖ To inspire knowledge across different areas in Statistics & Actuarial Science.
- ❖ To impart knowledge on statistical concepts like data collection, measures of central tendency & Dispersion, Probability & distributions, Statistical Inference, Statistical methods, Experiment design, Vital Statistics, SQC, Reliability & OR.
- ❖ To equip our students with good quality to appear for competitive examinations.
- ❖ To include research atmosphere among students by Assigning Projects.

COURSE OUTCOMES OF STATISTICS:

Semester-I : Paper-I: (Descriptive Statistics & Probability)

After completion of this course the students is able to

- C01: Understand the have the basic knowledge on data collection & measures of central tendency & dispersion and moments.
- C02: Probability is used to real life problems.
- C03: Basic knowledge on Random variables.

Semester-II : Paper-II (Mathematical Expectations & Probability Distribution)

After completion of this course the student is able to:

- C01: Mode bridge between elementary statistical tools & probability theory.
- C02: Applied the theoretical discrete probability distributions like Binomial, Poisson etc. In the relevant application areas.
- C03: Apply the theoretical continuous probability distributions like normal, exponential etc in the relevant application areas.

Semester-III : Paper-III (Statistical Methods):

After completion of this course the student is able to:

- C01: Find the interrelationship between two (or) more variables with the help of curve fitting, correction & Regression analysis.
- C02: Understand the basic components of sampling distribution.
- C03: Understand the basic knowledge of theory of attributes in constancy of data.

Semester-IV : Paper-IV (Statistical Inference)

After completion of this course the student is able to:

- C01: Find a best estimator with reference the different criteria in case of real life applications.
- C02: Understand the critical problems that are faced in testing of hypothesis with reference to the cross in decision making.
- C03: Apply the different testing tools like t-test, f-test, χ^2 -test, sign test, run test, median test etc to analyze the relevant real life problem.

Semester-V : Paper-V (Sampling Techniques & Design of Experiments):

After completion of this course the student is able to:

- C01: Know the various sampling methodologies and their efficiencies in theoretical & practical aspects.
- C02: Analyse the different mathematical models with the help of statistical designs & appropriate data and made valuable conclusions by proper evaluation.

Semester-V : Paper-VI (Quality & Reliability):

After completion of this course the student is able to:

- C01: Understanding of quality control in industry with reference to \bar{x} , R, σ , NP, P, C charts.
- C02: Understanding the knowledge of sampling plans like single & double sampling plans.
- C03: Understanding the knowledge of Reliability

Semester-VI : Paper-VII (Applied Statistics):

After completion of this course the student is able to:

- C01: Understanding the knowledge of time series.
- C02: Understanding the knowledge of criteria & construction of Index numbers.
- C03: How to estimate Birth & Death rates with reference to some vital statistics methods.

Semester-VI : Paper-VIII (Optimization Techniques) (Cluster):

After completion of this course the student is able to:

- C01: Basic knowledge of operation Research & Linear Programming problem.
- C02: Understanding the procedures for construct the linear programming problems.
- C03: Understanding the knowledge of basic feasible solutions.



HINDU COLLEGE, GUNTUR

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UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015 – 2016 PROGRAMME: THREE-YEAR B.Com COMPUTER APPLICATION

Programme Outcomes

Completion of programme the student will

- Acquire strong fundamentals of updated commerce knowledge special in the areas of accounting, marketing, finance, taxation
- Improve the student capability to words invention creativity in problem solving skills in business gain knowledge with different issues of business
- Improve the student's technical skills managerial qualities leadership qualities etc....
- Gain skill on management ,leadership, team work, with social responsibility for making themselves as professional and entrepreneur

S. No	Semester	Course Code	Course	Course Outcome
1	I	BCO1 -SB	Financial accounting	After the completion of the course, Students will be able to CO1 - To record the basic journal entries. CO2 – maintain the accounting records of any organization CO3 -Maintain the financial statements of a business entity. Can compute profitability and financial status of business. CO4 -Rectify errors in accounts.
2.	I	BCO1S - 2	Business Organization and Management	After the completion of the course, Students will be able to CO1 - To understand the basic concepts in commerce, trade and industry and acquire the knowledge of business organization CO2 - Obtained the knowledge and structure of industry. CO3 - To get the knowledge of managerial traits and talents essential to face emerging challenge of managing business CO4 - Understand the stages in planning and organizing CO 5 - Able to evaluate tools and techniques of recruitment, directing and controlling process.

3.	I	BCO1S -3	Business economics	<p>After completion of study the students will be able to:</p> <p>CO1 -Describe the Nature of economics – at micro and macro level</p> <p>CO2 -Analyze the supply and demand and its impact on consumer behavior</p> <p>CO3 –Able to measure the elasticity of demand in different methods.</p> <p>CO4 -analyze the cost and revenue</p>
4.	II	BCO2S-1	Financial accounting-II	<p>After completion of study the students will be able to:</p> <p>CO1 -Gains the knowledge of special transactions regarding accounting for consignment</p> <p>CO2 -Acquire the knowledge of techniques of bills of exchange</p> <p>CO3 -Ascertain the knowledge profitability and financial position of an enterprise from incomplete records</p> <p>CO4 -Able to understand different types provisions and reserves and their accounting treatment in final accounts</p> <p>CO5 -Get the knowledge various methods of depreciation of assets</p>
5	II	BCO2S-2	Business environment	<p>After completion of study the students will be able to</p> <p>CO1 -Define various elements internal as well as External affecting business environment.</p> <p>CO2 -Explain the techniques like SWOT analysis.</p> <p>CO3 -Define the terms like inflation, GDP, etc.</p> <p>CO4 -Define the consequences with regard to BOP.</p> <p>CO5 -Explain the economic trends and effect of Gov policies as LPG</p>
6	II	BCO2S-3	Business Economics	<p>After completion of study the students will be able to</p> <p>CO1 - Able to estimate minimization of cost Maximization of profits.</p> <p>CO2 - Can able to estimate the cost of production Able to analyze the various market structures.</p> <p>CO3 - Able to understand the national income, GDP And different economic systems.</p> <p>CO4 - Understand the liberalization, privatiz globalization.</p> <p>CO5 - Understand the concept of international trade.</p>

7	III	BCO3S-1	Corporate accounting	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Learn about the journal entries of issue of shares and issue of debentures.</p> <p>CO2-To know about the meaning of companies and working style of companies.</p> <p>CO3 -Know about the final accounts of the companies.</p> <p>CO4 -Learn about the valuation method of shares and goodwill and measurement of performance of companies.</p> <p>CO5 -Work with profit prior to incorporation and post incorporation profits in companies' accounts.</p> <p>CO6 -Learn about the concept of sources of redemption of debentures and redemption of preference shares</p>
8	III	BCO3S-2	Business statistics	<p>After completion of study the students will be able to:</p> <p>CO1 -Student will able to apply knowledge to solve simple tasks using computer (MS Excel)</p> <p>CO2 -Student will able to independently calculate basic statistical parameters (mean, measures of dispersion, correlation coefficient, indexes)</p> <p>CO3 -Student will able to interpret the meaning of the calculated statistical indicators</p> <p>CO4 -Student will able to choose a statistical method for solving practical problems</p> <p>CO5 -Student will able to explain probability theory and probability distributions in relation to general statistical analysis.</p> <p>CO6 -Student will able to Understand and appreciate the need to solve a variety of business-related problems using a systematic approach involving accepted statistical techniques</p>
9	III	BCO3S-3	Banking theory and practice	<p>After completion of study the students will be able to:</p> <p>CO1 -Understanding the banking operations.</p> <p>CO2 -Understanding the concepts of banking.</p> <p>CO3 -Understanding how to business practices with banking.</p> <p>CO4 -Understanding the new concepts of banking.</p> <p>CO5 -Understanding the organization working of commercial banks, reserve bank of India</p> <p>CO6 -Understand the relation of bank and its customers</p>

10	IV	BCO4S-1	Accounting for service organizations	<p>After the completion of the course, Students will be able to</p> <p>CO1 -About service organizations, sec 8 and other provisions of companies act 2013.</p> <p>CO2 -Able to get the knowledge accounting procedure of electricity companies, life insurance companies, and general insurance companies.</p> <p>CO3 -Gain the knowledge of accounting procedure of banking procedures.</p> <p>CO4 -Gain the knowledge of banking regulation act 1969 and the legal provisions related to preparation of final accounts</p> <p>CO5 -Thus able to prepare accounts of service organizations</p>
11	IV	BCO4S-2	Business law	<p>After completion of study the students will be able to:</p> <p>CO1 -Students acquired knowledge about Contract laws.</p> <p>CO2 -Students acquired knowledge about definition of valid offer.</p> <p>CO3 -Students learned rules relating to minor contracts and contingent contracts.</p> <p>CO4 -Students learned about digital signature and safety mechanisms about cyber law.</p>
12	IV	BCO4S-3	Income tax	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Define the procedure of direct tax assessment.</p> <p>CO2 -Able to file IT return on individual basis.</p> <p>CO3 -Able to compute total income and define tax complicacies and structure.</p> <p>CO4 -Able to understand amendments made from time to time in Finance Act.</p> <p>CO5 -Differentiate between direct and indirect tax assessment.</p>
13	IV	FOUNDATION COURSE -9	Entrepreneurship	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Understanding the role of entrepreneurship in economic development.</p> <p>CO2-Understanding the techniques for generating ideas.</p> <p>CO3 -Understanding the project appraisal techniques, financial analysis.</p> <p>CO4 -Understanding central level institutions such as NABARD; SIDBI etc.</p> <p>CO5-Students acquired knowledge about govt. Policies, tax allowances etc.</p>

14	V	BCO5S-1	Cost accounting	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Define the various components of total cost of a product i.e. direct & indirect cost and fixed & flexible cost.</p> <p>CO2 -Determine various levels of material i.e. reorder level, minimum level, maximum level & EOQ for managing working capital.</p> <p>CO3 -Use methods of time-keeping & time-booking and manage idle & overtime.</p> <p>CO4 -Define the features of overhead or indirect cost of production and basis of allocation and apportionment.</p> <p>CO5 -Use cost-sheet to compute unit cost of product.</p> <p>CO6-Determine basis for computing tender price of a product.</p>
15	V	BCO5S-2	Goods and service tax	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Students acquired knowledge about GST Act.</p> <p>CO2 -Students has acquired information about implementations, amendments and eligibility criteria of the GST Act.</p> <p>CO3 -Students has learned eligibility or not eligible under the input tax credit system.</p> <p>CO4 -Students has learned knowledge about the GS</p>
16	V	BCO5S-3	Commercial geography	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Understanding the latitude, longitude and evolution of Earth.</p> <p>CO2 -Understanding the soils, major crops in India.</p> <p>CO3-Understanding the status of forests in AP and need for protection of Forestry.</p> <p>CO4 -Understanding the use of minerals, mines and water resources – rivers.</p>
17	V	BCO5S-4A	Central banking	<p>After the completion of the course, Students will be able to;</p> <p>CO1 -Understanding development of banks in developed and developing countries.</p> <p>CO2 -Understanding the RBI, constitution and recent developments, RBI Act.</p> <p>CO3-Understanding monetary policy statements of RBI-CRR-SLR and credit control measures.</p> <p>CO4 -Students acquired knowledge intervention mechanism and controlling measures.</p> <p>CO5 -Understanding basic norms and checking of money laundering and frauds.</p>

18	V	BCO5S-4B	Rural and farm credit	<p>After the completion of the course, Students will be able to</p> <p>CO1 -Understanding the classification of rural credit.</p> <p>CO2 - Understanding the financing for rural industries.</p> <p>CO3 -Understanding role of commercial and rural banks and problems of recovery and dues.</p> <p>CO4 -Understanding farm credit analysis and rural credit survey reports.</p>
19	V	BCO5S-PRJ	Rural and farm credit project	<p>After the completion of the course, Students will be able to</p> <p>CO1 - Project work is learning experience which provides the opportunity to relate the knowledge from various areas of learning the subject and apply critically and creatively to the real situations.</p> <p>CO2 - enhances the knowledge and their are able to acquire skills</p> <p>CO3 - It helps them for lifelong learning and there are able to face challenges.</p> <p>CO4 - The project work on rural farm credit helps to students to get the knowledge of credit facility and solution for other problems of farmers.</p>
20	VI	BCO6S-1	Marketing	<p>After the completion of the course, Students will be able to</p> <p>CO1 –Able to understand how a product possessed from different stages.</p> <p>CO2 –Able to understand the difference between trademark and branding.</p> <p>CO3–Able to describe the customer segmentation, target marketing and positioning.</p> <p>CO –Understand different methods of sale promotion</p>
21	VI	BCO6S-2	Auditing	<p>After the completion of the course, Students will be able to</p> <p>CO1 –Student will understand the audit process from the engagement planning stage through completion of the audit, as well as the rendering of an audit opinion via the various report options.</p> <p>CO12–Student will understand auditors’ legal liabilities, and be able to apply case law in making a judgment whether auditors might be liable to certain parties;</p> <p>CO3 –Student will understand to describe the various levels of persuasiveness of different types of audit evidence and explain the broad principles of audit sampling techniques;</p>

				<p>CO4 –Student will understand to discuss the need for an independent or external audit and describe briefly the development of the role of the assurance provider in modern business society;</p> <p>CO5 –Student will able describe the quality control procedures necessary to ensure that a competent assurance engagement is performed, and apply professional ethics including Code of Conduct to specific scenarios</p> <p>CO6 –Student will explain the internal audit process including the professional standards applicable to the internal audit profession.</p>
22	VI	BCO6S-3	Management accounting	<p>After the completion of the course, Students will be able to</p> <p>CO1 - Can use different tools in financial and management accounting in business operations</p> <p>CO2 - Can analyze the changes in working capital for any organization</p> <p>CO3 - Can assess the cash flow and funds flow and impact on business operations</p> <p>CO4 - Able o assess the profitability and solvency of any organization</p> <p>CO5 - Able to take profit making decisions in complex situations of any business organizations</p>
23	VI	BCO6S-5A	Banking and financial services	<p>After the completion of the course, Students will be able to</p> <p>CO1 –Students has understood the financial institutions and its functions.</p> <p>CO2 –Students acquired information about different segmentations of financial institutions in the society.</p> <p>CO3–Students can observe and research functions of different financial institutions like mutual funds, merchant banks, L&T, Housing Finances etc.</p>
24	VI	BCO6S-5B	Marketing of financial services	<p>After the completion of the course, Students will be able to</p> <p>CO1 – Able to manage the service counters</p> <p>CO2 – Able to apply the pricing strategies and promotion strategies and business promotions.</p> <p>CO3 – Able to manage B2B marketing</p> <p>CO4 – Able to design and manage the service processes.</p> <p>CO5 – Able to implement various retail financial services</p>

25	VI	BCO6S-PRJ	Financial services project	<p>After the completion of the course, Students will be able to</p> <p>CO1 – Project work is learning experience which provides the opportunity to relate the knowledge from various areas of learning the subject and apply critically and creatively to the real situations.</p> <p>CO2 – It enhances the knowledge and there are able to acquire skills</p> <p>CO3 – It helps them for lifelong learning and there are able to face challenges.</p> <p>CO4 – This project work on financial services helps the students to get the knowledge of various financial services such as banking finance. Mutual financial services, venture capital, demat services etc...</p>
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POLICY ON CONTINUOUS INTERNAL ASSESSMENT(CIA)

Assessment is a critical step in the learning process. It determines whether or not the course's learning objectives have been met. A learning objective is what students should know or be able to do by the time a lesson is completed. Assessment affects many facets of education, including student grades, placement, and advancement as well as curriculum, instructional needs, and school funding.

Broadly they can be classified into 'Formative Assessment' and 'Summative Assessment'. **Formative assessment** is continuous and is conducted during the teaching-learning process using variety of tools and strategies. Assessment will be conducted through the following strategies: Observation during class, Tasks set for home learning, Projects/presentations, Selected responses, Open-ended tasks, Performance tasks etc. On the other hand, the goal of **summative assessment** is to *evaluate student learning* at the end of an instructional unit by comparing it against some standard or benchmark. There will be University Examinations at the end of each semester for both Theory and Practical. In the light of above discussion it is observed that the summative assessment in Hindu College, Guntur (an affiliated college under Acharya Nagarjuna University) is in Semester-end for 75/100 marks for each course.

On the other hand, the academic quality of actual examination has long been a major complaint. The criteria in the system is the root cause that needs to be tackled on priority basis. The sizable weight for internal assessment is a major step. The main problem is the incomplete development and articulation of relevant and systematic schemes for internal assessment suited to the needs of different subjects and levels of the students. Hence, there is every need for a change in focus in the internal assessment from questions pattern that require simple memory recall to a judging of mix of questions which assess.

The major principal for improving the quality of internal assessment is that a variety of means of assessment should be used to match many dimensions of learning objectives. The use of many such devices is possible only in the college setting of internal assessment handled directly by the individual faculty member. Under the above circumstances, the CIA adopted by the faculty of Hindu College, Guntur has been divided into two broad categories of verifying tasks viz., Assignments and other class room activities as detailed below:

Assignments: A writing assignment encompasses any writing task a teacher asks of students that involves more or more thought processes including analysis, evaluation, interpretation, narration, syntheses, reflection, clarification summarization, creative expression and application or demonstration of knowledge or learning. Even faculty member should determine the purpose of the assignment and the levels of students and accordingly assignments should be given. There should be atleast one assignment for each unit/module. The weightage, assigned for the assignments should be awarded after completion of all the assignments in respect of all the units/modules are finished before the 1st and 2nd mid-term examinations are commenced.

Other suggested **class activities**-laboratory/manipulative/experiential skill which include as described below for different subject should be organized by every faculty member in respect of the subjects being taught by him/her

Sl. No	Subject	Suggested Activity/Activities for CIA
1	Sciences	Peer teaching, Student seminars, quiz, worksheets on subjects, KWL (Know, Want-to-know, and Learned) Group work, Work sheets on subject, Industrial visit , Field visit, Student projects, Student seminars, peer teaching, filling gaps, Matching, quiz, Hydroponic gardening, live projects, Vermi compost Preparation, growing Nursery plants, Aquarium maintenance, Fish farming, Lab visit, live projects, Mushroom Cultivation, Organic farming etc
2	Arts	Socio economic survey, Group discussions, Student seminars, peer teaching, quiz, worksheets on subjects, KWL, Field visits, Mock Parliament, Web assignments
3	Languages	Comprehensive paragraphs, Library visit, Student seminars, one word answers, Multiple choice questions, peer teaching, filling gaps, Matching, quiz, worksheets on subjects, KWL
4	Commerce and Management	Industry visits and tours, group discussion, group projects, Student seminars, one word answers, Multiple choice questions, peer teaching, filling gaps, Matching, quiz, worksheets on subjects, KWL, Socio economic surveys

However, the above given activities are just suggestative. The faculty/department may adopt any one or more from the above or any other of their interest. All the Heads of the Departments are advised to strictly follow the above policy while awarding internal marks to the students in each semester. The HoDs are advised to maintain proofs/records in prescribed proforma by IQAC

The model award list is as follows:

SL.No	Name of the student	Regd No	Group	Subject	Sem	Assignment	Student Activity	Total