



# TELANGANA UNIVERSITY

DICHPALLY, NIZAMABAD- 503 322 T.S.

## UG (CBCS) – BA/B.Com./B.Sc./BBA VI- Semester Generic Elective - II (GE - II) Paper

Sl. No.	Subject	GE – II
1	Computer Applications (B.A./B.Sc.) & Computer Science(B.Sc.)	INFORMATION TECHNOLOGIES - 2
2	Economics	DEMOGRAPHY
3	History	HISTORY OF TELANGANA MOVEMENT AND STATE FORMATION (1948- 2nd June, 2014)
4	Political Science	INDIAN GOVERNMENT AND POLITICS
5	Public Administration	GOOD GOVERNANCE
6	B.Com.	SECTORS OF INDIAN ECONOMY
7	BBA	BASICS OF START-UPS
8	Biotechnology	APPLICATIONS OF BIOTECHNOLOGY
9	Botany	ECONOMIC BOTANY
10	Chemistry	MATERIALS AND THEIR APPLICATIONS
11	Mathematics	ELEMENTS OF NUMBER THEORY
12	Physics	ELECTROMAGNETISM
13	Statistics	BASIC STATISTICS-2

Sd/-

**Controller of Examinations**

GE-2

**Information Technologies – 2**

BS601

Theory 2 Hours/Week 2 credits

**Unit – I**

*Introduction to Algorithms and Programming Languages:* Algorithm, Control Structures, Flowcharts, Pseudo code, Programming Languages, Generations of Programming Languages.

*Database Systems:* File Oriented Approach, Database Oriented Approach, Database Views, Three-Schema Architecture, Database Models, Components of DBMS, Introduction of SQL Queries.

**Unit – II**

*Computer Networks:* Introduction, Connection Media, Data Transmission Mode, Data Multiplexing, Data Switching, Network Topologies, Types of Networks, Networking Devices, OSI Model.

*The Internet:* Internet Services, Types of Internet Connections, Internet Security.

*Emerging Computer Technologies:* Distributed Networking, Peer-to-peer Computing, Grid Computing, Cloud Computing, Utility Computing, OnDemand Computing, Wireless Network, Bluetooth, Artificial Intelligence.

Text

Reema Thareja, Fundamentals of Computers

References

1. P. K. sinha, Computer Fundamentals
2. Anita Goel, Computer Fundamentals
3. V. Rajaraman, Fundamentals of Computers
4. E. Balagurusamy, Fundamentals of Computers
5. J. Glenn Brookshear, Dennis Brylow, Computer Science An Overview

Note:

Student friendly video lecturers pertaining to this course are available at <http://spoken-tutorial.org/>

**B.A. (ECONOMICS) SYLLABUS**  
**Semester - VI**  
**DEMOGRAPHY**  
**Generic Elective (Credits: 2)**

**Unit –I: Meaning and Scope of Demography**

Components of population-growth and their interdependence- Theories of population– Malthus and Optimum theory of Population - Theory of demographic transition – Population and Development.

**Unit-II: Population trends and Migration**

Population Explosion –Aspects of population growth and spatial distribution- Determinants of age and sex – Structure of Population – Social economic implications. Streams of migration - Factors affecting migration – Urbanization – Trends in developed and developing countries – Study of census in India- Trends in the rate of growth of Indian Population.

**Reading List:**

1. S.N.Agarwal : India's population problem – Tata McGraw –Hill Co. Bombay.
  2. Ahisha Bose : India's Basic Demographic statistics-B.R Publishing corporation, New-Delhi.
  3. P.K. Chowbey : Population policy in India – Kanishka Publications, New Delhi.
  4. S.C Gulati : Fertility in India an Econometric study of a metropolis-Sage, New Delhi.
  5. K.Srinivsan : Basic Demographic techniques and applications.-Sage, New Delhi
  6. D.J. Bogue : Principles of Demography-John Wiley, New York.
  8. C.M. Chiang : Life tables and Mortality Analysis.-WHO, Geneva.
  8. CEHI, : Dharma Kumar (ed) Vol.2
  9. Praveen Visaria, Population studies.
  10. Dharma Kumar, Land and caste in south India.
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**TELANGANA STATE  
B.A. (HISTORY) SYLLABUS**

Semester - VI

**History of Telangana Movement and State Formation (1948 - 2<sup>nd</sup> June, 2014)**

**Generic Elective – (GE) Paper – II**

(CBCS - 2018-2019)

**Module-I:** Historical Background: Telangana its Geographical features, Social, Political, Economic and Cultural Conditions – Hyderabad State – Formation of Popular Ministry under Burgula Ramakrishna Rao and 1952 Mulki-Agitation; City College Incident – Its importance, Jagān Mohan Reddy Committee Report, 1953 – Demand for Telangana State – States Reorganization Commission (SRC) and its Recommendations – Dr. Ambedkar's views on smaller states – Formation of Andhra Pradesh, 1956; Gentlemen's Agreement and its Provisions Telangana Regional Committee, Composition, Functions and Performance – Violation of Safeguards – Formation of Telangana Praja Samithi and Spread of Telangana Movement – All Party Accord – GO 36 – Suppression of 1969 Telangana Movement and its Consequences – The Eight Point and Five-Point Formulas – Implications – Six Point Formula 1973, and its Provisions; Article 371-D, Presidential Order, 1975 Officers Committee Report – GO-610 (1985), its Provisions and Violations Anti-Landlord Struggles in North Telangana – Alienation of Tribal Lands and Adivasi Resistance – Komaram Bheem.

**Module-II:** Rise of Regional Parties in 1980's and Changes in the Political, Socio-Economic and Cultural fabric of Telangana – Public awakening and Intellectual reaction against discrimination – formation of Civil Society Organizations, Articulation of separate Telangana Identity; Telangana Information Trust – Telangana Aikya Vedika, Telangana Maha Sabha – Warangal Declaration – Role of Osmania and Kakatiya University Students and Others. – Foundation of Telangana Rashtra Samithi in 2001, The Role of various Groups, Associations in the Telangana Movement - Role of Telangana Political Joint Action Committee – Cultural expressions in Telangana Movement - Forms of Protest Sakala Janula Samme, Non-Cooperation Movement; Million March, etc. – All Party Meeting – Sri Krishna Committee and its Recommendations, Parliamentary proceedings, Declaration of Telangana State, Andhra Pradesh State Reorganization Act, 2014.

**Recommended Books:**

Karen Leonard, *Hyderabad and Hyderabadis*.

V.K. Bawa, *The Last Nizam*.

Lucien Benichow, *From Autocracy to Integration: Hyderabad, 1038-48*.

K.V. Narayan Rao, *Emergence of Andhra Pradesh*.

A.V. Ramana Rao, *Economic Development of Andhra Pradesh*, 2 Volumes.

Ananda Rao, Thota, *Proceedings of the Telangana University Colleges Teachers Convention*.

Ch. Hanumantha Rao, *Regional Imbalances – Telangana*.

Gautham Pingle, *Fall and Rise of Telangana*.

K. Jayashankar, *Telangana Rashtram – Oka Demand (Telugu)*.

- 1) Telugu Akademy - తెలుగు అకాడమీ - సంస్కృతం (తెలుగు)  
(20.2. వంశవంశ సంస్కృతం)
- 2) Telangana History and Culture - (English)  
(B.A. II year)

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(చివరికి గానీ)  
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- (చివరికి గానీ)

**BA III Year (Political Science)**  
**Semester – VI : Indian Government and Politics**  
**(Generic Elective)**

**Module – I: Social and Political Reforms in India**

- a) Peasant or Farmers Movement
- b) Dalit Movement
- c) Tribal Movement
- d) Environmental Movement
- e) Women's Movement

**Module – II: Statutory Commissions for Protection of Rights**

- a) National Human Rights Commission
- b) National Commission For Women
- c) National S.C. & S.T. Commission
- d) National Minorities Commission

**BA PUBLIC ADMINISTRATION III Year Semester - VI**  
**GENERIC ELECTIVE**  
**GE2: Good Governance**

**Max Marks: 40 UE + 10 IA**

**Credits: 2**

**Course Objective:**

The word 'Governance' appears in diverse academic disciplines. At general level, governance refers to theories and issues of social coordination and the nature of all patterns of rule. The theories of governance have changed the understanding of various concepts of state and its institutions. New jargon of words emerged into the social science literature with different connotations. In this background, the present course is aimed to provide an in depth understanding of the basic tenets and trends of Good Governance

**Module - I: Introduction**

- a) Meaning and Definitions of Governance
- b) Government and Governance
- c) Concepts of Good Governance

**Module - II: Techniques of Good Governance**

- a) Openness and Transparency
- b) Citizen Charter
- c) Social Audit

**Paper : (BCO602) : SECTORS OF INDIAN ECONOMY**

Paper: BCO602

Max. Marks: 40UE+10IA

PPW: 2 Hrs

Exam Duration: 3 Hrs

Credits: 2

**UNIT I: AGRICULTURE SECTOR IN INDIA:**

Place of agriculture: Progress-Green revolution-Present state-New thrust areas-Food security: Legislation-Schemes-Public distribution system-Agricultural Marketing: Types-warehousing-Agricultural Labour-Minimum wages-Rural credit-RRBs-NABARD.

**UNIT II: INDUSTRIAL AND SERVICE SECTORS IN INDIA:**

**Industrial Sector:** Concept of Industrialization - Phases- the rate and pattern of industrial growth across alternative policy regimes;-Large- Scale industry- Small- Scale industry- Information Technology Industry- Labour problems- Labour Policy- Social Security-Trade Union Movement- Industrial Disputes.

**Service Sector:** Introduction to Service Sector: Insurance and Banking Services –Transport and Tourism Services - Computer Services - Impact of service sector on Indian economy.

**SUGGESTED READINGS:**

1. Meera Naidu “Introduction to Indian Economy” HPH
2. Ruddar Datt and K.P.M. Sundharam “Indian Economy”, S. Chand & Company Ltd., New Delhi, 2013.
3. S.K.Misra & V.K.Puri “Indian Economy-Its Development Experience”Himalaya
4. Himalaya Publishing Company, New Delhi, 2013.
5. Introduction to Indian Economy: Dr. P. Venugopal Rao, PBP.
6. Vivek Mittal “Business Environment” Excel Publications, New Delhi, 2013.
7. Aswathappa.K. “Essentials of Business Environment – Text, cases & Exercises”
8. Himalaya Himalaya Publishing Company, New Delhi, 2013.
9. Economic Survey—Government of India, Ministry of Finance, Oxford University Press, New Delhi,
10. The Economic Times, News paper
11. Business Line, News paper.

## **6.8. Basics of Start-Ups (Generic Elective)**

### **UNIT:1**

#### **Introduction to Start ups**

Statutory definition in India-Business incubation-The policy of Indian government on start ups

### **UNIT:2**

#### **Start up funding and MSME Act**

Equity financing for start ups and sources-Debt financing for start ups and sources-Definition and Classification of MSMEs—Registration of MSMEs-Funding of MSMEs

#### **REFERENCES:**

Vinod Kothari consultants (2016), “ Taxman’s guide to Start-ups

Vijay kumar Ivaturi, Meenaganesh, Alok Mittal, Sri Ram Subash, Prof. Sadagopal, “ The Manual for Indian Start-ups, Penguin books



**Choice Based Credit System  
(w.e.f 2016-2017)**

**SEMESTER- VI  
SKILL ENHANCEMENT COURSE  
INTELLECTUAL PROPERTY RIGHTS**

**Unit 1: Introduction to Intellectual Property Rights**

- 1.1 Intellectual property rights (IPR): genesis and scope.
- 1.2 Types of Intellectual property rights: patent, trademarks, copyright, design registration, trade secret, geographical indicators, plant variety protection.
- 1.3 Patents- objectives, rights, procedure of obtaining and working of patents, infringement.
- 1.4 Copyrights - works protected under copyright law, rights, transfer of copyright.
- 1.5 Trademarks - protection of good will, defenses, domain name.
- 1.6 Geographical indications – International position, multilateral treaties, national level, Indian position.
- 1.7 International organizations – World Trade Organization (WTO), Trade-Related Aspects of Intellectual Property Rights (TRIPS), General Agreement on Tariffs and Trade (GATT).

**Unit 2: Biotechnology and Intellectual Property Rights**

- 2.1 Plant varieties protection- Rights of farmers, breeders and researchers, National gene bank, International union for the protection of new varieties of plants (UPOV), protection of plant varieties and farmers’ rights act, 2001
- 2.2 Animal breeder’s rights, patenting animal breeds: Example of Animal patents (Dolly the cloned sheep, Super-salmon, Sex-selection in Animals, genetically manipulated dairy cows)
- 2.3 Patenting microbes and organisms - Novelty, International Depository Authorities (IDAs), submitting details of the deposit.
- 2.4 Patenting genes - Pros and cons, ethics, examples
- 2.5 Patenting markers and variants - examples
- 2.6 Product vs process patent - Product life cycle and process design.

**REFERNCE BOOKS**

1. An Introduction to Ethical, Safety and Intellectual Property Rights Issues in Biotechnology” by Padma Nambisan
2. IPR, Biosafety and Bioethics” by Goel and Parashar
3. Genetically Modified Crops and Agricultural Development (Palgrave Studies in Agricultural Economics and Food Policy)” by MatinQaim
4. Biosafety and Bioethics” by Rajmohan Joshi
5. Bioethics and Biosafety in Biotechnology” by V Sree Krishna
6. Biotechnology, IPRs and Biodiversity - By M.B. Rao and Manjula Guru (Pearson Education)
7. Text Book of Biotechnology- By H.K. Das (Wiley Publications)
8. Biotechnology-By H.J. Rehm and G. Reed. VIH Publications, Germany

B.Sc. III Year

Semester-VI

**ECONOMIC BOTANY**

GE-1E (2 hrs/week) Credits-2

Generic Elective-II

30 hours

Theory Syllabus

Unit-I:

1. Cultivated Plants: Concept of origin, their importance.
2. Vegetables: Nutritional and Commercial values of Root crops, leafy and fruit vegetables.
3. Cereals: Rice, Wheat and maize -Origin, morphology and uses
4. Pulses: General account with special reference to Gram and soybean
5. Millets: Nutrient significance of Sorghum, Finger millet, Pearl millet, Foxtail millet.

Unit-2:

6. Spices: General account with special reference to clove and black pepper.
7. Fruits and nuts: Commercial and nutritional value of South Indian fruits. Cashew nut, Almond and Walnut.
8. Beverages: Tea & Coffee - morphology, processing, uses.
9. Oils and Fats: General description with special reference to groundnut and sunflower
10. Fiber Yielding Plants: General description with special reference to Cotton (Botanical name, family, part used, morphology and uses)

Suggested Readings

1. Kochhar, S.L. (2011). Economic Botany in the Tropics, MacMillan Publishers India Ltd., New Delhi. 4th edition.
2. B.P. Pandey (2007). Economic Botany, S. Chand & Company Ltd. New Delhi. 17/e.

## SEMESTER VI

**GENERIC ELECTIVE-II (GE-II)**  
(for B.Sc. non chemistry/B.A/B.Com Students)**MATERIALS AND THEIR APPLICATIONS****30 Hrs****Unit – I: TYPES OF MATERIALS****15 Hrs**

**INTRODUCTION:** Materials and their importance: Classification of Materials, Advanced Materials and their need.

**TYPES OF MATERIALS:** Metals, ceramics, polymers and composites; Nature of bonding.

**TYPES AND APPLICATIONS OF METAL ALLOYS:** Classification: ferrous and non-ferrous alloys. Ferrous alloys-types and their applications. Non-ferrous alloys – Cu, Al, Ti alloys and their application, Super alloys.

**TYPES AND APPLICATIONS OF CERAMICS:** Classification of Ceramics based on their application glasses, clay products, refractories, abrasives, cements and advanced ceramics.

**GLASSES:** Compositions and characteristics of some of the common commercial glasses; Properties and applications of glass ceramics. Clay products: Structural clay products and white wares.

**REFRACTORIES:** Compositions of four common ceramic refractory materials - fireclay, silica, basic refractories ex. MgO and special refractories ex. alumina and zirconia

**CEMENTS:** Classification, preparation of cement and the setting process; quick setting cements and their applications.

**Unit - II TYPES OF POLYMERS AND APPLICATIONS****15 Hrs**

**POLYMERIC MATERIALS CLASSIFICATION BASED ON APPLICATION:** Coatings, adhesives, films, foams with examples.

**POLYMER ADDITIVES:** Fillers, plasticizers, stabilizers, colorants, flame retardants with examples

**ADVANCED MATERIALS:** Types of advanced materials- semiconductors, bio-compatible materials, smart materials and advanced polymeric materials with examples.

**CONDUCTING POLYMERS:** Introduction, Electrically conducting polymers and their uses (polyaniline, polypyrrole, polyacetylene and polythiophene),

**REFERENCES:**

1. William D. Callister Materials Science and Engineering An Introduction, John Wiley & Sons, Inc, 2006.
2. Material science by Kakani and Kakani.
3. Sujata V., Bhat., "Biomaterials", Narosa Publication House, New Delhi, 2002.
4. M. V. Gandhi and B. S. Thompson, "Smart Materials and Structures", Chapman and Hall, London, First Edition, 1992.
5. Duerig, T. W., Melton, K. N., Stockel, D. and Wayman, C.M., "Engineering aspects of Shape-memory Alloys", Butterworth – Heinemann, 1990.
6. Conducting Polymers, Fundamentals and Applications A Practical Approach  
Authors: Chandrasekhar, Prasanna Ashwin-Ushas Corp., Inc. Kluwer Academic Publishers. Boston.

GE-2

## ELEMENTS OF NUMBER THEORY

BS:602

Credits: 2

Theory: 2 hours /week

Objective: Students will be exposed to some elements of number theory.

Outcome : Students apply their knowledge problems on check digits, modular designs.

## Unit I

The Division Algorithm- Number Patterns- Prime and Composite Numbers- Fibonacci and Lucas' numbers- Fermat Numbers- GCD-The Euclidean Algorithm- The Fundamental Theorem of Arithmetic- LCM- Linear Diophantine Equations Congruences- Linear Congruences

## Unit II

The Pollard Rho Factoring Method- Divisibility Tests- Modular Designs- Check Digits- The Chinese Remainder Theorem- General Linear Systems- 2X2 Systems Wilson's Theorem- Fermat's Little Theorem- Pseudo primes- Euler's Theorem

**Text :** Thomas Koshy, *Elementary Number Theory with Applications*

**References:** David M Burton, *Elementary Number Theory*

## Department of Physics

## Telangana University

## Generic Elective Paper for other departments/Disciplines: (Credits: 02)

## Semester VI

## GE2- Electromagnetism

## UNIT-I

**Electrostatics:** Electrostatic Field, electric flux, Gauss's theorem of electrostatics. Applications of Gauss theorem- Electric field due to point charge, infinite line of charge, uniformly charged spherical shell and solid sphere, plane charged sheet, charged conductor. Electric potential as line integral of electric field, potential due to a point charge, electric dipole, uniformly charged spherical shell and solid sphere. Calculation of electric field from potential.

**Capacitance:** Capacitance of an isolated spherical conductor. Parallel plate, spherical and cylindrical condenser. Energy per unit volume in electrostatic field. Dielectric medium, Polarisation, Displacement vector. Gauss's theorem in dielectrics. Parallel plate capacitor completely filled with dielectric.

## UNIT-II

**Magnetism:** Magnetostatics: Biot-Savart's law and its applications- straight conductor, circular coil, solenoid carrying current. Divergence and curl of magnetic field. Magnetic vector potential. Ampere's circuital law. Magnetic properties of materials: Magnetic intensity, magnetic induction, permeability, magnetic susceptibility. Brief introduction of dia-, para- and ferromagnetic materials.

**Electromagnetic Induction:** Faraday's laws of electromagnetic induction, Lenz's law, self and mutual inductance,  $L$  of single coil,  $M$  of two coils. Energy stored in magnetic field.

**Reference Books:**

- Electricity and Magnetism, Edward M. Purcell, 1986, McGraw-Hill Education.
- Electricity & Magnetism, J.H. Fewkes & J. Yarwood. Vol. I, 1991, Oxford Univ. Press.
- Electricity and Magnetism, D C Tayal, 1988, Himalaya Publishing House.
- University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.
- D.J. Griffiths, Introduction to Electrodynamics, 3rd Edn, 1998, Benjamin Cummings.
- Electricity and Magnetism- K.K Tewari (S. Chand Higher Academics) 2013.

**GE II LAB: ELECTRICITY, MAGNETISM AND EMT**

1. To use a Multimeter for measuring (a) Resistances, (b) AC and DC Voltages, (c) DC Current and (d) checking electrical fuses.
2. Ballistic Galvanometer: (i) Measurement of charge and current sensitivity (ii) Measurement of CDR (iii) Determine a high resistance by Leakage Method (iv) To determine Self Inductance of a Coil by Rayleigh's Method.
3. To compare capacitances using De'Sauty's bridge.
4. Measurement of field strength  $B$  and its variation in a Solenoid (Determine  $dB/dx$ ).

**(Examination at the end of III Year, Semester VI)****GE – 2 –Basic Statistics-2 (with 2 HPW, Credits 2 and Marks 50).****Unit - I**

Definition and sample examples of random variables and distribution function, probability mass function and probability density function. Mathematical expectation and moments-simple examples.

Discrete probability distributions: Bernoulli, Binomial, Poisson. (Concept, definition, statements of mean and variance only) with real life examples.

Continuous probability distributions: Uniform, Normal and Exponential distributions (concept, definition, statements of mean, variance and other properties).

**Unit - II**

Empirical bivariate distributions, Covariance, Karl Pearson coefficient, Rank Correlation, Curve fitting by least squares principle. Simple linear regression.

Concept and definition of population, parameter, sample, statistic, sampling distribution and standard error.

Properties of Estimates: Unbiasedness, Consistency and Efficiency (concept and definition only), simple examples.

Concept of testing Statistical hypothesis-Definition of Null and Alternative hypothesis, Critical region, Types of errors, level of Significance and Power of a Test.

Tests of significance based on Chi-Square, t and F distributions and ANOVA (One and Two way) with examples (No mathematical derivation only methodology).

**List of reference books:**

1. V.K.Kapoor and S.C.Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi
2. GoonAM,GuptaMK, Das Gupta B : Fundamentals of Statistics , Vol-I, the World Press Pvt.Ltd.,Kolakota.
3. Charles M.Grinstead and Laurie Snell.J: Introduction to Probability, American Mathematical Society

**Note:** *Theory paper is for 40 Marks and Internal is 10 Marks*