

# SOPHIA GIRLS' COLLEGE (AUTONOMOUS), AJMER



## SESSION 2023-24

### Criterion 1: Circular Aspects

1.1.2 Syllabus in which revision was carried out during the year 2023-24 under NEP

# **SOPHIA GIRLS' COLLEGE (AUTONOMOUS) AJMER**



## **Scheme of Examination And SYLLABUS**

**BATCH 2023**

**FOR**

**Four-Year Undergraduate Program  
(Arts)**

**Under  
Choice Based Credit System (NEP)**

**Semester - I to II**

# BACHELOR OF ARTS

Eligibility for admission in First Year of BA is 10+2 examination of any Board with at least 45% marks. With regard to admission on reserved category seats government rules will be applicable

## SCHEME OF EXAMINATION

The number of the paper and the maximum marks for each paper together, with the minimum marks required to pass are shown against each subject separately. It will be necessary for a candidate to pass in the theory as well as the practical part of a subject/paper, wherever prescribed, separately.

Classification of successful candidates shall be as follows:

First Division 60%	of the aggregate marks prescribed in Semesters I to VI taken together
Second Division 50%	

All the rest shall be declared to have passed the examination.

- For passing a candidate shall have to secure at least 40% marks in each course (Theory and Practical separately).
- No division shall be awarded in Semesters I to V.
- Whenever a candidate appears for a due paper examination, she will do so according to the syllabus in force.
- A candidate not appearing in any examination/absent in any paper after term end examination shall be considered as having DUE in those papers.

### End Semester Examination Pattern

**Maximum Marks: 70**

**Duration: 2½Hrs**

#### **Section A**

**10 × 1 = 10 Marks**

Contains 10 Questions of 1 mark each and all are compulsory. Three questions from each unit and one extra question from any one unit

#### **Section B**

**5+5+5 = 15 Marks**

Contains 3 questions with internal choice (Two questions from each unit). A student has to attempt 3 questions, choosing at least one question from each unit.

#### **Section C**

**15 × 3 = 45 Marks**

Contains 3 questions with internal choice (Two questions from each unit). Each Question carries 15 marks. A Student has to attempt 3 questions, choosing at least one question from each unit.

## FYUP CREDIT SCHEME 2023

### STRUCTURE OF 3 YEAR UNDERGRADUATE PROGRAM BASED ON NEP (NON- PRACTICAL SUBJECTS)

SEM	Honours With Research	Multi-Disciplinary Course	Ability Enhancement Course (AEC)	Skill Enhancement Course	Value Added Course	Summer Internship/ Social Outreach	Research Project OR Dissertation	Total	
	Required Credit for Major Course (4)	Total Required Credit (3) (6)	Total Required Credit (2) (6)	Total Required Credit (3) (9)	Total Required Credit (2) (8)	Total Required Credit (3)	Total Required Credit 20	Credit	Marks
Sem-I	MAJOR A (4) MAJOR B (4) MAJOR C (4)	MDC-I (3)	AEC-104 General English	SEC-I	-	-	-	20	500
Sem-II	MAJOR A (4) MAJOR B (4) MAJOR C (4)	MDC-II (3)	AEC-105 General Hindi	-	VAC-I Physical Fitness	ISO – 25 (1)	-	20	500
<b>Total</b>	<b>24</b>	<b>6</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>		<b>40</b>	<b>1000</b>

**The allocation of the 2 Majors and minor subject is strictly based on merit (Performance in Sem - I & II)**

**The student requires 40 credits during the first year of the undergraduate program for qualifying for an Undergraduate Certificate**      **40**      **1000**

Sem-III	MAJOR-A1(4) MAJOR-A2(4) MAJOR-B1(4) MAJOR-B2(4) <b>MINOR-C(4)</b>	-	-	-	VAC-III GEN-106- Env. Cons. (2)	-	-	22	550
Sem-IV	MAJOR-A1(4) MAJOR-A2(4) MAJOR-B1(4) MAJOR-B2(4) <b>MINOR-C (4)</b>	-	50 COMM.E NG (2)	-	-	-	-	22	550
<b>Total</b>	<b>40</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>-</b>		<b>44</b>	<b>1100</b>
	<b>64</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>1</b>		<b>84</b>	<b>2100</b>

**The student requires 84 credits during the second year of the undergraduate program for qualifying for a Diploma**

Sem-V	MAJOR-A1(4) MAJOR-A2(4) <b>/DSE-A2</b> MAJOR-B1(4) MAJOR-B2(4) <b>/DSE-B2</b>	-	-	<b>SEC-V (3)</b>	VAC-V Moocs/swayam/ EEA(1)	ISO - 50 (2)	-	22	550
Sem-VI	MAJOR-A1(4) MAJOR-A2(4) <b>/DSE-A2</b> MAJOR-B1(4) MAJOR-B2(4) <b>/DSE-B2</b>	-	-	<b>SEC-VI (3)</b>	VAC-VI Democratic awareness with legal literacy/ NSS/NCC(3)	-	-	22	550
<b>Total</b>	<b>32</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>4</b>	<b>02</b>	<b>-</b>	<b>44</b>	<b>1100</b>
	<b>96</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>		<b>128</b>	<b>3200</b>

**On successful completion of three years, the relevant Undergraduate Degree shall be awarded. A Bachelor's degree requires 128 credits**

**4 YEAR UNDER GRADUATE HONOURS PROGRAM**

Sem-VII	MAJOR-A1(6)	-	-	-	-	-	MAJOR-A3 (6) /DSE-A3	24	400
	MAJOR-A2(6)						MAJOR-A4(6)		
Sem-VIII	MAJOR-A1(6)	-	-	-	-	-	MAJOR-A3 (6)	24	400
	MAJOR-A2(6)						MAJOR-A4(6)		
<b>Total</b>	<b>24</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24</b>	<b>48</b>	<b>800</b>
	<b>120</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>	<b>24</b>	<b>176</b>	<b>4000</b>

**On the successful completion of the fourth year, a student shall be awarded an HONOURS Degree. A Bachelor's degree with Honours requires a total of 176 credits (to have an Honours Degree Major Subject should have 50% of total credits)**

**4 YEAR UNDER GRADUATE HONOURS WITH RESEARCH**

Sem-VII	MAJOR-A1(6)	-	-	-	-	-	MAJOR-A3 (6) /DSE-A3	24	400
	MAJOR-A2(6)						MAJOR-A4 Research Methodology(6)		
Sem-VIII	MAJOR-A1(6)	-	-	-	-	-	Research Project-II(12)	24	400
	MAJOR-A2(6)						OR Dissertation-II(12)		
<b>Total</b>	<b>24</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24</b>	<b>48</b>	<b>800</b>
	<b>120</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>	<b>24</b>	<b>176</b>	<b>4000</b>

**On the successful completion of the fourth year, a student shall be awarded a Degree Honours with Research.**

**A Bachelor's degree of Honours with Research requires a total of 176 credits**

## **OUTLINE FOR UNDERGRADUATE COURSES UNDER NEP**

The UGC has formulated a new student-centric “Curriculum and Credit Framework for Undergraduate Programmes (CCFUP)” incorporating a flexible choice-based credit system, multidisciplinary approach, and multiple entry and exit options. This will facilitate students to pursue their career path by choosing the subject/field of their interest.

The NEP 2020 undergraduate curriculum is a significant shift towards a more student-centric and flexible learning experience. It empowers students to design their own educational journeys and graduate with the knowledge and skills to thrive in the 21<sup>st</sup> century workforce.

Undergraduate degree programmes of either 3 or 4-year duration, with multiple entry and exit points and re-entry options, with appropriate certifications such as:

- A UG Certificate after completing 1 year (two semesters) of study in the chosen fields of study.
- A UG Diploma after 2 years (four semesters) of study.
- A Bachelor’s degree after a 3-year (six semesters) programme of study.
- A 4-year bachelor’s degree (Honours) after eight semesters programme of study.
- If the student completes a rigorous research project in their major area(a) of study in the 4<sup>th</sup> year of a bachelor’s degree (Honours with Research).

### **Course Under Choice Based Credit System (CBCS)**

#### **1. Major Discipline:**

**a. Discipline Specific Core Courses (DSCC):** A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core Course. Each core course carries 4 credits for non-practical course and for practical core course carries 4 credits (3 theory + 1 practical).

**b. Discipline Specific Elective (DSE):** Choice of specific topics as per a student’s need. Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective. Each core course carries 4 credits.

**2. Minor Course:** is a program that allows students to explore topics that cross traditional academic boundaries. These are designed to foster a more holistic and flexible education, encourage students to develop a broader skill set and a diverse knowledge base. Each minor course carries 4 credits.

**3. Multi-Disciplinary Course (MDC):** MDC are designed to bridge gaps between traditional academic boundaries, allowing students to explore and integrate knowledge from multiple disciplines. MDC courses offer a broad perspective and encourage creative problem-solving by exposing students to a range of subjects, 3 credits is assigned to MDC, students can select MDC in Semester 1 and 2. Student take elective courses outside their major, fostering cross-disciplinary knowledge.

**4. Ability Enhancement Core Courses (AECC) :**AECC are a category of courses designed to help students develop essential skills and knowledge that enhance their overall learning experience and personal development. It carries 2 credits each in Semester 1, 2 and 4.

**5. Skill Enhancement Course (SEC):** SEC are designed to equip students with practical skills and competencies that are relevant to the workforce and society. Skill-based education and vocational training to ensure students are employable and can contribute to economic and social needs. SEC has 3 credits each in semester 1, 5 and 6. These courses may be chosen from the SEC table as given in Semester 1, 5 and 6.

**6. Value Added Course (VAC):** VAC are designed for holistic development, encourage interdisciplinary learning, and prepare students for the demands of the modern workforce. These courses offer flexibility and can be tailored to meet emerging trends and industry needs. These courses are available in Semester 2, 3, 5 and 6. Each VAC carries 2 credits.

**7. Social Outreach / Summer Internship (SOR):** Community service involve students engaging in activities that benefit their communities, fostering a sense of social responsibility and civic engagement. SOR carries 3 credits each in Semester 2 and 5.

**8. Project, Dissertation & Internships:** These activities play a significant role in the NEP, as they offer students practical experience, real-world exposure and the opportunity to apply their knowledge to real-world situations. These elements are designed to bridge the gap between academic learning and industry requirements, ensuring that graduates are better prepared for employment or further studies.

## Program Outcome

Program outcomes for a Bachelor of Arts (B.A.) program, designed to align with the guidelines of the National Assessment and Accreditation Council (NAAC) and the National Education Policy (NEP) 2020 in India:

1. **Enhancement of knowledge and understanding:** Students will be able to **analyze** and **evaluate** texts, theories, and concepts across various disciplines within the humanities and social sciences, fostering informed reasoning and decision-making.
2. **Communication Skills and Digital Literacy:** Students will be able to **articulate** ideas clearly and persuasively in effective **written** and **verbal** communication. They will also demonstrate proficiency in using digital tools and technologies for research, communication, and collaboration.
3. **Moral/Ethical Awareness and reasoning:** Students will be able to **apply** moral and ethical principles in day to day life, enabling them to make morally & ethically sound decisions in personal and professional settings.
4. **Environmental Sustainability and Cultural Awareness:** Students will be able to assess and evaluate both human and natural environment, changes and their impacts on ecosystems and human societies, proposing sustainable management strategies.
5. **Community Engagement, Social Responsibility and Service:** Students will be able to sensitize towards community service and outreach programs, fostering a sense of civic responsibility and engagement with societal issues.
6. **Critical Thinking and Analytical Reasoning:** Students will be able to to analyse, evaluate and interpret evidence, arguments and claims. They will also critically evaluate practices, policies and theories to develop knowledge and understanding; able to envisage the reflective thought to the implication on the society.

**DEPARTMENT OF ECONOMICS**

**Course Structure in Semester-I**

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJECO-101	PRINCIPLES OF MICROECONOMICS	Major	04	04	10	20	70	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

**MJECO101 – PRINCIPLES OF MICROECONOMICS**

**Max. Marks: 100**

**Marks: 40**

**Credits: 04**

**2½ hrs.**

**Min.**

**Duration:**

**Course Outcome:**

On successful completion of the course the students will be able to-

1. Enhance their knowledge and understand the basic framework of micro-economics.
2. Analyse and evaluate the consumer and producer behaviour.
3. Interpret and apply the concept of equilibrium under different market conditions.

**UNIT I**

**Introduction to Economics, Demand and Supply**

Nature and scope of economics, Basic Concepts in Economics, the economic problem: the question of what to produce, how to produce and for whom to produce. Mankiw's ten principles of economics.

Demand: meaning and determinants of demand, demand schedule, law of demand, exceptions to the law of demand, elasticity of demand: meaning, types: price, income and cross elasticity, measurement of elasticity of demand.

Supply: concept of supply, determinants of supply.

Market Equilibrium: how prices allocate resources, types of equilibrium: static and dynamic.

**UNIT II**

**Consumer Behaviour and Production Function**

Cardinal Approach: Utility, Law of Diminishing Marginal Utility, Equi-marginal Utility, Consumer's Equilibrium, Consumer Surplus and its application.

Ordinal Approach: Indifference curve, Indifference map. Indifference schedule, Properties of Indifference Curve, Budget Line, Consumer's Equilibrium, Price, Income and Substitution Effect (Hicks and Slutsky)- Inferior v/s Giffen Goods, Engle Curve.

Production Function: Law of Variable Proportion, Isoquants: meaning and properties, Law of Returns to Scale, Least-Cost Combination.



### UNIT III

#### Cost, Revenue and Output Determination under Different Markets

Cost: concepts, types and cost output relationship in the short and long run.

Revenue: Concepts (AR, MR and TR), relationship between AR, MR and e.

Price and Output Determination under Different Markets: types of market- perfect and imperfect market. Meaning and features of perfect competition, monopoly, monopolistic market and oligopoly. Price and Output Determination under perfect competition, monopoly and monopolistic market. Price discrimination under monopoly.

#### Reference Books:

- Samuelson P.A & W.O Nordhaus (1998), Economics 16<sup>th</sup> Edition, Tata McGraw Hill, New Delhi.
- Mankiw. Gregory. N (2007), Economics: Principles & Applications 4<sup>th</sup> Edition, India edition by South Western a part of Cengage Learning, Cengage Learning India Pvt. Ltd.
- Koutsoyiannis, A (1979), Modern Microeconomics, 2<sup>nd</sup> Edition, Macmillan Press, London.
- Varian H. (2000), Microeconomics Analysis, W.W Norton, New York.
- Ahuja H.L (2003), Advanced Economic Theory: Microeconomic Analysis, 13<sup>th</sup> Edition, S. Chand & Co. Ltd., New Delhi.
- Sen, A (1999), Microeconomics: Theory & Applications, Oxford University Press, New Delhi.
- Pindyck, R.S, D.L Rubinfeld & P.L Mehta (2008), Microeconomics, 6<sup>th</sup> Edition, Dorling Kindersley (India) Pvt. Ltd., Licenses of Pearson Education in South Asia.

#### Additional Reading

- Varian H.R (2000), Intermediate Microeconomics: A Modern Approach, 5<sup>th</sup> Edition, East-West Press, New Delhi.
- Case K.E & Ray C. Fair (2007), Principles of Economics, Pearson Education Inc., 8<sup>th</sup> Edition.
- Stiglitz J.E & Carl E. Walsh (2007), Economics 4<sup>th</sup> Edition, W.W Norton & Company Inc. New York, International Student Edition.

### Course Structure in Semester II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJECO-201	PRINCIPLES OF MACROECONOMICS	Major	04	04	10	20	70	40/100
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
ISO	Social Outreach Programme	ISO	01	01	-	-	25	10/25

# MJECO-201- PRINCIPLES OF MACROECONOMICS

**Max. Marks: 100**  
**Credits: 04**

**Min.Marks: 40**  
**Duration: 2½hrs.**

**Course Outcome:** On successful completion of the course the student will be able to-

1. Analyze and evaluate macroeconomic concepts,
2. Evaluate classical and Keynesian theories of employment, income, and output.
3. Analyze consumption theories and trade cycle models to propose sustainable economic strategies.

## UNIT I

### **Introduction to Macroeconomics and National Income Accounting**

Introduction to Macro Economics: Nature of Macroeconomics and its significance; Indicators of Macroeconomic activity – key concepts: Stock and flow variables

National Income Accounting: Measurement of Macro variables and economic performance; National Income accounting concepts – GNP, GDP, NNP, NDP, NI, PI, DPI, Real GDP v/s Nominal GDP, GDP Deflator; Methods of estimating NI – Expenditure method, Income method and Value added method; Difficulties in NI Accounting.

## UNIT II

### **Classical and Keynesian Macroeconomics**

Classical Theory: Introduction to classical theory of employment – Basic assumptions of classical school of thought – Say's Law of market – Determinants of output, employment, savings, investment, wages, prices, interest rate – Equilibrium output and employment; Implications of classical full employment model, Model critical evaluation

Keynesian Macroeconomics: Principle of effective demand, Keynesian theory of output, income and employment – Equilibrium Income and output in simple 2 sector model, 3 sector model and 4 sector model. Keynes Psychological Law of Consumption, Concept of multiplier.

## UNIT III

### **Theories of consumption and Trade cycle**

Theories of consumption: Absolute Income, Relative Income, Permanent Income and Life cycle hypothesis.

Trade cycle: Introduction to the trade cycle, Concept of accelerator; the multiplier Accelerator Interaction; Samuelson and Hick's Trade cycle; Kaldor's view on trade cycle.

### **Reference Books:**

- Shapiro, E. (1996), Macroeconomic Analysis, 5<sup>th</sup> Edition, Galgotia Publications, New Delhi
- Mankiw (2007), Principles of Macroeconomics, 4<sup>th</sup> Edition, Thomson South-Western, a part of Cengage Learning, Cengage Learning India Pvt. Ltd.
- Dornbauch, R. & F. Stanley (1997), Macroeconomics, McGraw Hill Inc., New York
- Ahuja, H.L (2011), Macroeconomics- Theory and Policy, S. Chand & Co. Ltd., New Delhi
- K.C Rana & K.N Verma, (2014) Macroeconomics Analysis, Vishal Publishing house.

### **Additional Reading:**

- Errol D'Souza (2008), Macroeconomics, Dorling Kindersley (India) Pvt. Ltd., Pearson Education in South Asia
- Branson, W.H., Macroeconomic Theory & Policy, Harper and Row, New York
- Blanchard Olivier & Fisher Stanley, Lectures on Macroeconomics, Cambridge, MIT Press

**DEPARTMENT OF ENGLISH**

**Course Structure in Semester-I**

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJENG-101	Modern English Usage and Communication Skills	Major	04	04	10	20	70	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

**MJENG-101: Modern English Usage and Communication Skills**

**Max. Marks: 100**

**Min. Marks: 40**

**Credits: 04**

**Duration: 2½ hrs.**

**Course Outcomes:** After the successful completion of the paper, the student will be able to –

1. To comprehend the basics of English Language and Grammar.
2. To employ and enhance reading and writing skills.
3. To demonstrate the latest trends in language and communication.

**UNIT -I**

- Grammar and Usage
- Determiners
- Tense, Aspect, Voice
- One Word Substitution
- Synonyms, Antonyms, Homonyms, Homophones
- Word Classes
- **Concepts and Notions** – Requests, Orders, Questions, Conditions, Purpose, Suggestion, Wish, Hope, Intention, Obligation, Permission, Likelihood, Possibility, Ability, Cause, Willingness, Comparison and Contrast, Concession (Different concepts and notions and their manner of expression, Basic Sentence Patterns [According to A.S. Hornby])
- Phrasal Verbs
- Idioms

**UNIT -II**

- Comprehension
- Letter Writing: Business Letters: Formal and Informal Letters, CV, Resume

**UNIT -III**

- English Phonetic Symbols, Transcription, Word Stress
- Literary Appreciation- Poetry and Prose

**Reference Books:**

- English at Home (ELBS) -W. R Lee
- A Guide to Patterns and Usage (ELBS) -A.S. Hornby
- Attitude to English Usage (OUP) -Mittens et. Al
- Advanced English Practice (OUP) - B.D Graver
- A Reference Grammar of English -R. A Close
- Prose and Poetry Appreciation -L. G Alexander

## Course Structure in Semester – II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJENG-201	English Literary and Social History	Major	04	04	10	20	70	40/100
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	ISO	01	01	-	-	25	10/25

### MJENG-201: English Literary and Social History

**Max. Marks: 100**

**Min. Marks: 40**

**Credits: 04**

**Duration: 2½ hrs**

**Course Outcomes:** After the successful completion of the paper, the student will be able to –

1. Explain the relevant conditions during various literary ages.
2. Identify the major literary trends of the ages prescribed in the syllabus.
3. Evaluate the issue of race, gender and class in the 21st Century.

**Definition, features/characteristics, examples, important figures and works of the following Ages**

#### Unit I

- Mystery, Miracle and Morality plays, Interludes
- University Wits
- Renaissance and Reformation
- Elizabethan Literature (Poetry and Drama)
- Metaphysical poetry
- Neo –Classicism

#### Unit II

- Literature of Pre-Romantic and Romantic Age
- Literature of Victorian Age, Growth of the Novel
- Literature of Pre-Raphaelite Age

#### Unit III

- Literature of the Twentieth Century
- Literature of the Modern Age
- Literature of the Post-Modern Age

**Prescribed Text:**

- Glossary of Literary Terms by Abrams & Geoffrey Galt Harpham
- Dictionary of Literary Terms and Literary Theory by M.A. R Habib and J.A Cuddon
- Oxford Dictionary of Literary Terms

**Reference Books:**

- An Outline History of English Literature - Hudson
- The Story of Civilisation -Will & Ariel Durrant
- The Critical Temper - Martin Tucker
- The History of English Literature -Compton &Rickett
- The Social and Literary History of England - Legouis & Cazamian

SGCA

DEPARTMENT OF GEOGRAPHY

**Course Structure in Semester – I**

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJGEO-101	Physical Geography-I (Elements of Geomorphology)	Major	03	03	5	20	50	30/75
MJGEO-102	Practical: Basics of Cartography (Contours and Profiles)	Major	02	01	-	-	25	10/25
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

**MJGEO-101: PHYSICAL GEOGRAPHY-I**  
**(Elements of Geomorphology)**

**Max. Marks: 75**  
**Credit: 03**

**Min. Marks: 30**  
**Duration: 2½ hrs**

**Course Outcomes:** On successful completion of the Course the student will be able to:

1. Identify the concepts of origin of earth and its various landforms.
2. Illustrate the different forces acting over the earth.
3. Compare and analyze the different cycles of landform erosion and their processes.

**UNIT I**

Origin of the Earth: Big Bang Theory; Earth's interior: Structure and Zoning of the Earth's interior: Constitution of earth's interior on the basis of evidence from seismology, temperature, density, pressure and chemical composition; Forces of the Earth: Endogenetic and Exogenetic; Folds and Faults; Theories of Isostasy-Airy & Pratt.

**UNIT II**

Origin of Continents and Oceans: Wegener's Continental Drift Theory, Plate tectonics, Sea-floor spreading; Volcanoes: distribution and related landforms; Earthquakes: occurrence and distribution, consequences and preparedness.

**UNIT III**

Rocks: Igneous, Sedimentary and Metamorphic; Denudation: Weathering and its types, Mass Wasting, Erosion and resulted landforms: Work of River, Glacier, Wind, and Karst, Critical analysis of Davis & Penck Cycle of erosion.

## Reference Books

1. Bloom, A. L. (2003). *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*. New Delhi: Prentice-Hall of India.
2. Bridges, E. M. (1990). *World Geomorphology*. Cambridge: Cambridge University Press.
3. Christopherson, Robert W. (2011). *Geosystems: An Introduction to Physical Geography* 8 Ed. England: Macmillan Publishing Company.
4. Ernst, W.G. (2000). *Earth systems: Process and Issues*. Cambridge: Cambridge University Press.
5. Gautam, A. (2010). *Bhautik Bhugol*. Meerut: Rastogi Publications.
6. Kale, V and Gupta, A. (2001). *Elements of Geomorphology*. Calcutta: Oxford University Press.
7. Kale, V. S. and Gupta, A. (2001). *Introduction to Geomorphology*. Hyderabad: Orient Longman.
8. Knighton, A. D. (1984). *Fluvial Forms and Processes*. London: Edward Arnold Publishers.
9. Richards, K. S. (1982). *Rivers: Form and Processes in Alluvial Channels*. London: Methuen.
10. Selby, M.J. (2005). *Earth's Changing Surface*. United Kingdom: OUP.
11. Singh, S. (2009). *Bhautik Bhugol ka Swaroop*. Allahabad: Prayag Pustak.
12. Skinner, Brian J. and Stephen, C. (2000). *The Dynamic Earth: An Introduction to physical Geology*. John Wiley and Sons.
13. Steers, J.A. (1964). *The Unstable Earth, Some recent views in geography*. New Delhi: Kalyani Publishers.
14. Strahler, A.N. and Strahler, A.H. (2005). *Modern Physical Geography*. John Wiley & Sons. Revised edition.
15. Thornbury, W. D. (1968). *Principles of Geomorphology*. Wiley.
16. Tikkaa, R. N. (1989). *Bhautik Bhugol ka Swaroop*. Meerut: Kedarnath Ram Nath.

**Pedagogy:** The teacher may familiarize the students with Indian examples of landforms with photographs and diagrams. In case it is possible, short field trips may be organized.

## MJGEO- 102: PRACTICAL: BASICS OF CARTOGRAPHY

### (CONTOURS & PROFILES)

**Max. Marks: 25**

**Credit: 01**

**Min. Marks: 10**

**Duration: 2 hrs**

**Written Test**

**15 Marks**

**Record Work**

**05 Marks**

**Viva**

**05 Marks**

### Course Outcomes:

1. Understanding the nature of relief features.
2. To develop skills and competency regarding area analysis.
3. Portraying the relief features with applying of contours and profiles.

1. Representation of different landforms by Contours -

- Hill
- Plateau
- Cliff
- Waterfall, Ridge
- Types of Valleys
- Types of Slopes

2. Drawing of Profiles-
  - Superimposed
  - Composite
  - Projected profiles
  - Their relevance in landform mapping and analysis.

### Reference Books

1. Kannan M & Yadav S (2022). Practical Geography, Rawat Publications, Jaipur
2. Misra, R.P & Ramesh. (1986). A Fundamentals of Cartography. New Delhi: McMillan Co.
3. Monkhouse, F. J. and Wilkinson, H. R. (1973). Maps and Diagrams. London: Methuen.
4. Pal, S.K. (1998). Statistics for Geoscientists Techniques & Applications. New Delhi.
5. Rhind, D. W. and Taylor, D. R. F. (2000). Cartography: Past, Present and Future. International Cartographic Association.
6. Robinson, A. H., (2009). Elements of Cartography. New York: John Wiley and Sons.
7. Robinson, A.H. (2000). Elements of Cartography. U.S.A.: John Wiley & Sons.
8. Sarkar, A. K. (2005). Practical Geography: A Systematic Approach. Calcutta: Oriental Longman.
9. Sharma, J. P. (2010). Prayogic Bhugol. Meerut: Rastogi Publishers.
10. Singh, R.L. and Dutt, P.K. (2010). Elements of Practical Geography. New Delhi: Kalyani Publishers.

**Pedagogy:** The elements of practical geography will be conveyed to students through charts, map and diagrams for effective learning. Students will be making a practical file and will learn to use instruments available in the geography lab.

## Course Structure in Semester – II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJGEO-201	Physical Geography-II (Climatology and Oceanography)	Major	03	03	5	20	50	30/75
MJGEO-202	Practical Study of Weather Maps	Major	02	01	-	-	25	10/25
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
ISO	Social Outreach Programme	ISO	01	01	-	-	25	10/25



**MJGEO-201: PHYSICAL GEOGRAPHY–II**  
**(CLIMATOLOGY AND OCEANOGRAPHY)**

**Max. Marks: 75**  
**Credit: 03**

**Min. Marks: 30**  
**Duration: 2½ hrs**

**Course Outcomes:** On successful completion of the Course the student will be able to:

1. Understand the meaning and significance of Climatology.
2. Explain various climatic phenomenon and deduce measures to control global environmental concerns.
3. To build insights of Oceanography and analysis of hydrological phenomena

**A. CLIMATOLOGY**

**UNIT - I**

Nature and Scope of Climatology: Weather and Climate, Composition and Structure of Atmosphere; Insolation; Heating and Cooling of the Atmosphere; Heat Budget; Atmospheric Temperature; Factors controlling the temperature; horizontal and vertical distribution of temperature; Inversion of Temperature; Atmospheric Pressure: Vertical and Horizontal Distribution of Pressure.

**UNIT-II**

Winds: Planetary, Periodic and Local winds (Loo, Mistral, Fohn, and Chinook); Factors affecting the winds; General circulation of winds; Air Masses and Fronts: concepts, classification and properties; Tropical and Temperate cyclones (Polar front theory); Anti-cyclone; Basis of Koppen's classification; types and characteristics.

**B. OCEANOGRAPHY**

**UNIT-III**

Definition of Oceanography; Ocean Bottom Relief: associated features of Atlantic, Pacific and Indian Ocean; Distribution of Temperature and Salinity in Oceans; Circulation of oceanic waters- Currents: Atlantic, Pacific and Indian ocean, Types of Tides; Coral Reefs: Types of Coral Reefs, Darwin's Subsidence theory of coral reef development, Marine resources and Pollutions.

**Reference Books:**

1. Grald, S. (1980). General Oceanography: An Introduction. New York: John Wiley & Sons.
2. Barry, R. G. and Carleton, A. M. (2001). Synoptic and Dynamic Climatology. UK: Routledge.
3. Barry, R.G. & Chorley, R.J. (1998). Atmosphere, Weather and Climate. UK: Routledge.
4. Critchfield, H. J. (1987). General Climatology. New Delhi: Prentice-Hall of India.
5. Das, P.K (1968). The Monsoons. New Delhi: National Book Trust.
6. Gupta, L. S. (2000). Jalvayu Vigyan: Hindi Madhyam Karyanvay Nidishalya. New Delhi: Delhi Vishwa Vidhyalaya.
7. Lal, D. S. (2010). Jalvayu Vigyan. Allahabad: Prayag Pustak Bhavan.
8. Patterson, S. (1969). Introduction of Meteorology. London: McGraw-Hill Book Co.
9. Sharma, R.C. & Vatel, M. (1970). Oceanography for Geographers. Allahabad: Chetnya Publishing House.
10. Shepard, F.P. (1948). Submarine Geology. New York: Harper & Sons.

11. Singh, S. (2010). Jalvayu Vigyan. Allahabad: Prayag Pustak Bhawan.
12. Strahler, A.N. and Strahler, A.H. (2005). Modern Physical Geography. John Wiley & Sons. Revised edition.
13. Stringer, E.T. (1982). Foundation of Climatology. Delhi: Surjeet Publications.
14. Trewartha, G. T. and Horne, L. H. (1980). An Introduction to Climate. McGraw-Hill.
15. Vatal, M. (1986). Bhautik Bhugol. Allahbad: Central Book Depot.
16. Weisberg, J. and Howard. (1976). Introductory Oceanography. New York: McGraw Hill Book Co.

*Pedagogy*

*For effective teaching and meaningful learning, weather charts will be shown to students and illustrations may be drawn from local/regional weather and climatic conditions throughout the course. Efforts should be made to drive home the relevance of climatology and oceanography for the life and activities of human beings.*

**MJGEO- 202: PRACTICAL  
STUDY OF WEATHER MAPS**

**Max. Marks: 25  
Credits: 01**

**Min Marks: 10  
Duration: 2 hrs**

<b>Written Test</b>	<b>15 Marks</b>
<b>Record Work</b>	<b>05 Marks</b>
<b>Viva</b>	<b>05 Marks</b>

**Course Outcomes:**

1. To build basic understanding of climatic phenomena and weather maps.
2. To develop skills and competency regarding area analysis.
3. Application and interpretation of weather-related parameters.

Meaning: Elements of Weather and Climate, Brief review of Indian Meteorological Department (IMD) and its functions.

Meteorological Instruments: Drawing of meteorological instruments Thermometer, Barometer, Hygrometer, Anemometer, Wind-vane, Rain gauge station & its functions and significance.

IMD Weather Maps: Drawing of Weather symbols, Season and seasonal variations, Isobars, Isobaric Pattern, Depression, Cyclone, Calm Conditions, Forecasting etc. and its Characteristics

Season-wise detail Interpretation of IMD Weather Maps:

- a. Winter Season (at least two map from each season)
- b. Summer Season (at least two map from each season)
- c. Monsoon Season (at least two map from each season)
- d. Post-Monsoon Season (at least two map from each season) Weather Symbols, Weather Instruments, calculations regarding and Interpretation of Weather Maps.

**Note- Field Visit to Metereological Department.**

## Reference Books

1. Misra, R.P & Ramesh. (1986). A Fundamentals of Cartography. New Delhi: McMillan Co.
2. Kannan, M. & Yadav. S. (2022). Practical Geography, Rawat Publications, Jaipur
3. Monkhouse, F. J. and Wilkinson, H. R. (1973). Maps and Diagrams. London: Methuen.
4. Pal, S.K. (1998). Statistics for Geoscientists Techniques & Applications. New Delhi.
5. Rhind, D. W. and Taylor, D. R. F. (2000). Cartography: Past, Present and Future. International Cartographic Association.
6. Robinson, A. H., (2009). Elements of Cartography. New York: John Wiley and Sons.
7. Robinson, A.H. (2000). Elements of Cartography. U.S.A.: John Wiley & Sons.
8. Sarkar, A. K. (2005). Practical Geography: A Systematic Approach. Calcutta: Oriental Longman.
9. Sharma, J. P. (2010). Prayogic Bhugol. Meerut: Rastogi Publishers.
10. Singh, R.L. and Dutt, P.K. (2010). Elements of Practical Geography. New Delhi: Kalyani Publishers.

**Pedagogy:** The elements of practical geography will be conveyed to students through charts, map and diagrams for effective learning. Students will be making a practical file and will learn to use instruments available in the geography lab.

**Course Structure in Semester-I**

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJHIN-101	आदिकालीन एवं भक्तिकालीन काव्य	Major	04	04	10	20	70	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

**MJHIN-101: आदिकालीन एवं भक्तिकालीन काव्य (MAJOR)**

अधिकतम अंक : 100

श्रेय : 04

अध्ययन के परिणाम—

पाठ्यक्रम पूर्ण होने के बाद विद्यार्थी योग्य होंगे—

न्यूनतम अंक : 40

समय : 2½ घंटे

1. क व कल्लोल, कबीर, संतवाणी, जायसी की साहित्यिक वरासत से परिचित होकर व्याख्यात्मक एवं प्रश्नों का आलोचनात्मक विश्लेषण करने में।
2. सूरदास, तुलसीदास, मीरा व रसखान के काव्य का व्याख्यात्मक कौशल विकास व प्रश्नों का समीक्षात्मक विश्लेषण करने में।
3. काव्य के गुण तथा दोष, शब्दशक्ति, प्रमुख छंद व अलंकारों की परिभाषा व उदाहरण सहित समझने में।

पाठ्य पुस्तक— प्राचीन काव्य — संपादक — डॉ. सत्यनारायण शर्मा — पंचशील प्रकाशन जयपुर  
इकाई I

(1) ढोला मारुरा दूहा

नर बरदेस सुहावणउ' से 'अकथ कहाणी प्रेम की' दूहेतक (सं. रामसिंह, सूर्यकरण पारीक, नरोत्तम दास स्वामी, नागरी प्रचारिणी सभा वाराणसी)

(2) कबीर

(कबीर ग्रंथावली — श्याम सुन्दर दास, नागरी प्रचारिणी सभा, काशी)

दुलहनी गावहु ..... पुरुष एक अविनासी।

संतौ भाई आई ..... भयातम खीना।

पांडे कौन कुमति..... रामल्यो लाई।

हमनमरै..... सुख सागर पावा।

माया महाठगिनी..... हाथ बिकांर्नी

झीनी — झीनी बीनी..... धरिदीनीचदरिया।

पानीबिचमीन..... क्याकासी

काहेरीनलिनी..... नहिंमुएहंमरेंजान।

गुरुदेवकौअंग

सतगुरु की महिमा ..... दिखावणहार।

रामनामकैपटतरे ..... रहीमनमाहिं।

सतगुरुसांचा ..... पड्याकलेजैछेक।

मायादीपकनर ..... एकआधउबरंत ।

#### मनकौअंग

मनकैमतै ..... अपूठाआंणि ।  
मनगोरखमन ..... आपैकरतासोई ।  
कबीरमनगाफिल ..... दरगहमाँहि ।  
कबीरमनपंछी ..... मायाकेपास ।  
करताथातौ..... कहाँतैखाई ।

#### विरहकौअंग

यहुतनजालौं ..... बरसिबुझावेअग्गि ।  
विरहभुवंगमतन ..... जिवेतबौराहोई ।  
अंषडियांझाईपड़ी ..... रामपुकारिपुकारि ।  
हँसि—हँसिकंत ..... नहींदुहागनिकोइ ।

#### मायाकौअंग

त्रिषणासींचीनाबुझे ..... मेहाकुमिलाई ।  
मायातरवरत्रिविध ..... फलफीकौतनिताप ।  
कबीरमायामोह ..... रहेबसंतकूरोई ।  
मायाकीझलजग ..... रुईपलेटीआग ।

#### चितावणीकौअंग

सातोंसबदलुबाजते ..... बैसणलागेकाग ।  
यहुऐसासंसारहै ..... झूटेरंगिनभूल ।  
मिनषाजनमदुर्लभहै ..... बहुरिनलागैडार ।  
कबीरकहागरबिया ..... खंखरभयेपलास ।  
मैं—मैंबड़ीबलाई ..... रुईपलेटीआगि

### (3) संतवाणी

#### नामदेव

(संतनामदेव—प्रकाशक, राधास्वामीसत्संगव्यास, डेराकाकाजैमलसिंह, जिलाअमृतसर, पंजाब)

हरिनांवहीरा ..... उतरैपारा ।  
जौलगरामनामै ..... भवजलतरिये ।  
कपटमैनमिले ..... नामदेवदास ।

#### रैदास

(योगेन्द्रसिंह, प्रकाशक— लोकभारतीप्रकाशन, इलाहाबाद)  
अविगतनाथनिरंजन ..... गावैरैदासा ।  
अबकैसेछूटैराम ..... ऐसीभक्तिकरैरैदासा ।  
ऊँचेमंदिरशाल ..... रामकहिंछूट्यो ।

#### नानक

#### (नानकवाणी, अमृतसर)

मिलिजलु ..... जलहिंखटाना ।  
अबराखहुदास ..... भाटकीलाज ।  
सावणआइयाहेसखी ..... बढ़ाईदेइ ।

#### दादूदयाल

(संतकविदादूऔरउनकापंथ, डॉ. वासुदेवभामा, प्रकाशन—शोधप्रकाशन, नईदिल्ली)

नीकैरामकहत ..... मारगसकरा  
अजहूननिकसे ..... चंदचकोर

सजनीरजनीघटती .....

रज्जब

(संतकाव्य— डॉ. परशुरामचतुर्वेदी, किताबमहल, इलाहाबाद)

मनकीप्यास ..... रामभजनकरिभाई ।

संतोमगनभया ..... धणीकाचेरा ।

ऐसोगुरुसंसार ..... दर्शनपासा ।

(4) जायसी

(जायसीग्रंथावली— आचार्यरामचन्द्रशुक्ल, नागरीप्रचारिणीसभा, वाराणसी)

नागमतीवियोगखण्ड – 15छंद (प्रारम्भके)

इकाई II

(1) सूरदास (सूरसागर – नागरी प्रचारिणी सभा, वाराणसी)

वात्सल्य

- 1- जसोदाह रिपालनैञ्जुलावै ।
- 2- मैया, मैतो चंद खिलौना लेहौं !
- 3- खेलन अब मेरी जात बलैया ।
- 4- मैया बहुत बुरौ बलदाऊ ।
- 5- खेलन दूरि जातकत प्यारे ।

गोपी प्रेम

- 6- हरि. मुख. विधु मेरी अँखियाँ चकोरी ।
- 7- चितवनरोकैहँनरही ।
- 8- बूझत स्याम कौन तूगोरी ।
- 9- सजनी निरखिह रिकौ रूप ।
- 10- अबतौ प्रगट भई जगजानी ।

विरहवर्णन

- 11- मधु कर स्याम हमारे चोर ।
- 12- बिनु गोपाल बैर निभई कुंजै ।
- 13- हमारे हरि हारिल की लकरी ।
- 14- प्रीतिकरि का हूसुखनलह्यौ ।
- 15- संदेस निम धुबन कूप भरे ।
- 16- सखिइन नैननितैघन हारे ।
- 17- निरगुन कौन दे सकौबासी?
- 18- ऊधौमन माने की बात ।
- 19- संदेसोदेव की सौँक हियो ।
- 20- ऊधौमो हिब्रज बिसरत नाही ।

(2) तुलसी (गीताप्रेस, गोरखपुर)

वाटिका प्रसंग – रामचरित मानस

विनय पत्रिका – उत्तरार्द्ध के प्रारम्भिक 5 पद

(3) मीरा: मीरां पदावली: शम्भूसिंह मनोहर के प्रारम्भिक 25 पद

(4) रसखान (रसखान ग्रंथावली, संपादक – देश राज सिंह भाटी, अशोक प्रकाशन, नई सड़क दिल्ली)

- 1- प्रान वही जुर हैं ..... भायो ।
- 2- बैन वही उन को ..... सोहैरस खानी
- 3- मानुष हौं तो ..... कदं बकी डारन
- 4- यालकुटी ..... कुंजन ऊपर वारौं ।
- 5- सेस गने समहेस ..... पैनाचन चावैं ।
- 6- ब्रह्मा मैं ढूँढ्यो पुरानन ..... राधिका पायन ।
- 7- कहा रस खानि ..... नन्द के कुमार को ।
- 8- जोर सनार सनाबिलसै ..... कालिंदी – कूल कदं बकी डारन ।

9- कंस के कोपकी फैलगाई ..... कलंक तमालते की रतिडारसी।

10- द्रौपदी औगनिका ..... चाख नहारो सोराखन हारो

### इकाई III

अलंकार – (अनुप्रास, यमक, श्लेष, उपमा, रूपक, उत्प्रेक्षा, अतिशयोक्ति, संदेह, भ्रन्तिमान, दृष्टान्त, उदाहरण दीपक, वक्रोक्ति, अर्थान्तरन्याय) छन्द – दोहा, चौपाई, सोरठाकाव्य गुण, काव्यदोष, शब्द-शक्ति पाठ्य पुस्तक में इन सभी कवियों के संकलित अंश से व्याख्याएँ एवं आलोचनात्मक प्रश्न पूछे जाएंगे।

सन्दर्भ पुस्तकें-

- 1- कबीर – हजारी प्रसाद द्विवेदी, हिन्दी ग्रन्थ रत्नाकर, मुम्बई
- 2- हिन्दी साहित्यक का निर्गुण सम्प्रदाय – डॉ पीताम्बरदत्त
- 3- जायसी के काव्य का सांस्कृतिक अध्ययन – डॉ. भीम सिंह मलिक
- 4- गोस्वामी तुलसीदास – आचार्य राम चन्द्र शुक्ल
- 5- सूर की काव्य कला – डॉ. मनमोहन गौतम
- 6- मीरां – सुधाकर पाण्डेय
- 7- अलंकार मीमांसा – डॉ. सुनीता गुप्ता
- 8- हिंदी व्याकरण – डॉ. राजेश्वर प्रसाद चतुर्वेदी
- 9- आलंकार मीमांसा – डॉ. सुनीता गुप्ता

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJHIN-201	हिंदी साहित्य का इतिहास	Major	04	04	10	20	70	40/100
AEC	सामान्य हिन्दी / अहिन्दी भाषी विद्यार्थियों के लिए	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
ISO	Social Outreach Programme	ISO	01	01	-	-	25	10/25

### MJHIN-201: हिंदी साहित्य का इतिहास

अधिकतम अंक : 100

श्रेय : 04

न्यूनतम अंक : 40

समय : 2½ घंटे

अध्ययन के परिणाम : पाठ्य क्रम पूर्ण होने के बाद विद्यार्थी योग्य होंगे:-

1. हिंदी साहित्य के इतिहास का सामान्य परिचय और आदिकाल एवं भक्तिकाल का विस्तृत अध्ययन करने में।
2. रीतिकालीन एवं आधुनिककालीन (भारतेन्दु काल से छायावाद) परिस्थितियों, नामकरण, , कवियों का वर्गीकरण, काव्यगत विशेषताओं का अध्ययन करने में।
3. छायावादोत्तर काल के क व, रचनाएँ व प्रवृत्तियों को समझना एवं प्रतियोगी परीक्षाओं की तैयारी हेतु सक्षम।

पाठ्य पुस्तक: हिन्दी भाषा एवं साहित्य का संक्षिप्त इतिहास – डॉ. राजेन्द्र शर्मा, प्रेम आधार रावत।

### इकाई I

हिन्दी साहित्य के इतिहास का काल विभाजन, नामकरण आदिकाल – पृष्ठभूमि, नामकरण, परिस्थितियाँ, रचनाएँ, रचनाकार, प्रवृत्तियाँ ।

**भक्तिकाल** – पृष्ठभूमि नामकरण, परिस्थितियाँ भक्ति का उद्भव व विकास, निर्गुण काव्यधारा – संत एवं सूफीकाव्य, सगुण काव्यधारा – राम एवं कृष्ण काव्यधारा, प्रमुख कवि, काव्यगत विशेषताएँ ।

### इकाई II

**रीतिकाल**– नामकरण, पृष्ठभूमि, रीतिबद्ध, रीतिमुक्त, रीतिसिद्ध कवि, प्रवृत्तियाँ, काल विभाजन, कालगत, परिस्थितियाँ

**आधुनिक काल** – भारतेन्दु काल, द्विवेदी काल, छायावादी काल

### इकाई III

छायावादोत्तर काल, प्रगतिवाद, प्रयोगवाद, नई कविता – रचनाएँ, रचनाकार, प्रवृत्तियाँ

**सन्दर्भ पुस्तकें**–

- हिन्दी साहित्य का इतिहास – आचार्यराम चन्द्र शुक्ल, काशीनागरी प्र. सभा, वाराणसी
- आधुनिक हिन्दी साहित्य का विकास – डॉ. श्री कृष्णलाल, हिन्दी परिषद वि. विद्यालय, प्रयाग
- हिन्दी साहित्य का उद्भव और विकास – हजारी प्रसाद द्विवेदी
- आधुनिक साहित्य की भूमिका – डॉ. लक्ष्मी सागर वार्ष्णेय हिन्दी परिषद, वि. विद्यालय प्रयाग
- हिन्दी साहित्य का आलोचनात्मक इतिहास – डॉ. रामकुमार वर्मा
- हिन्दी साहित्य का इतिहास – सम्पादक – डॉ. नगेन्द्र



## DEPARTMENT OF HISTORY

### Course Structure in Semester-I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJHIS-01	History of Ancient India	Major	04	04	10	20	70	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MJHIS 101-HISTORY OF ANCIENT INDIA

**Max Marks: 100**

**Min Marks: 40**

**Credits:04**

**Duration: 2½Hrs**

#### Course outcomes:

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

1. Trace the trajectory of human origin and the urbanization processes of the Vedic India
2. Critically appraise the various aspects of Mauryan and Gupta polity, society, economy, religion and art and architecture.
3. Construct a narrative of early Islamic rule as well as examine the salient features of the tripartite struggle and major South Indian dynasties.

#### Unit-I

Pre-Historic Age –Paleolithic, Mesolithic, Neolithic and Chalcolithic age.

Indus Valley Civilization–Origin, Geographical Extent, Town Planning, Economic, Social, Political and Religious life– Decline of the Civilization. Origin of the Aryans, Vedic-Polity, Society and Economy.

Iron Age with special reference to Megaliths and PGW

Age of Mahajanapadas

#### Unit-II

Mauryan Empire–Political Extent, Administration, Social and Economic life- Ashoka the Great Post Mauryan Period–Shungas, Shakas, Satavahans and Kushans Gupta Age–State and Administration, Social and Economic Life, Religion, Art, Architecture and Literature

Sangam Age Culture-Chera, Chola and Pandya

### Unit-III

The Tripartite Struggle – Palas, Pratihars and Rashtrakutas.

Achievements of HarshVardhan

Arab Invasion: Mohammed Bin Qasim and capture of Sindh and Multan

Chalukyas-Military Policy, Pallavas-Temple Architecture and Cholas-Administration and Maritime Trade.

#### Reference Books

- Tripathi, R.S. (1992) History of Ancient India, Delhi, Motilal Banarasi Dass.
- Majumdar R.C. (1970, 1979, 1980) History and Culture of the Indian People, Vols,II,III,IV,V Mumbai, Bhartiya Vidya Bhawan Series,
- Kosambi, D.D. (1965) The Culture and Civilization of Ancient India in Historical Outline, Pantheon Books.
- Jha, D.N. (2001) Ancient India in Historical Outline, Manohar Publishers and Distributors.
- Singh, Upendra (2008) A History of Ancient and Medieval India: From stone age to 12th century, Pearson Longman
- Thapar, Romila (2004) Early India: From the Origins to AD 1300, University of California Press.
- Shrivastava, K.M. (2013) Age of Iron and Religious Revolution, Tulika Publications
- Habib, Irfan (2016) Vedic Age, Tulika Publications
- Habib, Irfan (2017) Pre-History, Tulika Publications
- Shastri, N.A.K. (1958) A History of South India, Oxford University Press.
- Basham, A.L. (1971) The wonder that was India, Vol 1, Mumbai, Roopa
- Hiriyanna M. (1995) Essential of Indian Philosophy, Delhi, Motilal Banarsidas.
- Rizvi S.A.A, (1993) The Wonder that was India Vol.I & II, London, 1987, Delhi FoundationBooks.
- Tiwari, Kalika Prasad, (2001) Foundations of Indian Culture, Jaipur, Pointer Publishers

### Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJHIS-201	Sultanate Period	Major	04	04	10	20	70	40/100
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
ISO	Social Outreach Programme	ISO	01	01	-	-	25	10/25

## MJHIS 201-SULTANATE PERIOD

**Max Marks: 100**

**Min Marks: 40**

**Credits:04**

**Duration: 2½ Hrs**

**Course outcomes:** On successful completion of the course, the student will be able to:

1. Critically appraise the contribution of the Turks, Persians and Afghans in the establishment of Sultanate rule in Medieval India.
2. Infer and examine the political, socio-economic and cultural changes introduced by the Islamic polity 12<sup>th</sup> century onwards.
3. Summarize and appreciate the role of regional powers in enriching the polity, society, culture and economy of 14<sup>th</sup>-15<sup>th</sup> Century India.

### Unit I

Sources to study Sultanate Period

Arrival of the Turks

The Ghaznavids and attacks of Mahmud

The Ghurid Dynasty and Muhammad Ghori-Defeat of Prithviraj Chauhan

The Delhi Sultanate: Establishment of Delhi Sultanate

Slave Dynasty/ Ibari/Mameluk Sultans (1206-1290): Qutubuddin Aibak, Shamsuddin Iltutmish, Razia & Balban

### Unit II

Khalji Dynasty (1290-1320): Jalaluddin Khalji, Allauddin Khalji, Administration, Economic and Revenue reforms.

Mongol Invasion of India

Tughlaq Dynasty (1320-1414): Gayasuddin Tughlaq, Muhammad bin Tughlaq & Feroz Shah Tughlaq;

Saiyyad Dynasty (1414-51); Lodi Dynasty (1451-1526)

Disintegration of Delhi Sultanate

Administration under Sultanate Period: Central Administration, Provincial government, Economy, Social system, Art and Architecture, Literature

### Unit III

Deccan and Southern India: Vijayanagar and Bahmani Kingdom

The Vijayanagar Kingdom (1336-1672): Army and Military Organization, Social life, Economy, Cultural Contributions

Conflict between the Vijayanagar Kingdom and Bahmani Sultanate

Bahmani Administration

Western India: Gujarat, Malwa and Mewar

North India: Kashmir

Eastern India: Jaunpur, Bengal, Assam, and Orissa

### Reference Books

- Chandra, Satish (2006) Medieval India Part I Delhi Sultanat, Har-AnandPub.
- Srivastava, A.L. (1950) The Sultanate of Delhi, Shivalal Agarwal, Agra
- Mehta, J.L. (1995) Advanced study in the History of Medieval India, Sterling Publishers.
- Nizami, K.A. (1983) On History and Historians of Medieval India, MunshiramManoharlal Publishers.
- Veluthat, Kesavan (2009) The Early Medieval in South India, Oxford University Press.
- Ashraf K M (2001) Life and Conditions of the People of Hindustan, Gyan Publishing House.

# DEPARTMENT OF HOME SCIENCE

## SEM-I

### **MJHSC 101: Fundamentals of Food Science and Nutrition**

**Max. Marks: 50**

**Min. Marks: 20**

**Credits: 03**

**Duration: 3 Hrs**

#### **Course Outcomes:**

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

1. Develop the understanding of terms food, nutrition, methods of cooking, food preservation and adulteration of foods.
2. Analyze the composition, classification, functions and nutritional composition of Macro and Micro nutrients
3. Gain Scientific knowledge regarding Food Science of various food Products.

#### **Unit – I**

1. Definition –Food, Nutrition, Nutrients and Dietetics, RDA
2. Functions and Classification based on functions, nutrients and perishability,
3. Methods of Cooking and Preventing Nutrient Losses
  - Dry, moist, frying and microwave cooking
  - Advantages, disadvantages and the effect of various methods of cooking on nutrients
  - Minimizing nutrient losses
4. Enhancing nutritional quality of foods-supplementation, germination, fermentation, fortification
5. Food preservation- Definition , principles and methods of food preservation
6. Food adulteration- Definition, types and household methods of testing adulterants in food.
7. Genetically modified and organic foods

#### **Unit - II**

8. A brief knowledge of the composition, classification, functions, deficiencies, sources and requirements of the following macronutrients and micronutrients:
  - Proteins, Carbohydrates Fats, Water and Dietary fiber
  - Fat Soluble vitamins – A,D,E and K
  - Water Soluble vitamins – Vit. C, Thiamine, Riboflavin, Niacin, Folic Acid and vitB6 Vit. B12
  - Minerals – Calcium, Phosphorous, Iron, Iodine.

#### **Unit – III**

9. Structure, composition, Products, nutritional contribution, selection and changes during cooking of the following food groups
  - Cereals
  - Pulses
  - Fruits and vegetables
  - Milk & milk products
  - Meat, eggs, poultry and fish
  - Fats and Oils, nuts and oilseeds
  - Spices and condiments

References:

- M. Swaminathan: Principles of nutrition and dietetics
- I.C.M.R.: Nutritive value of Indian Foods
- I.C.M.R.: Nutritive requirements for Indians
- C.H. Robinson: Normal and Therapeutic nutrition, Hindi
- Narayan Sudha: Aahar Vigyan Research Publication Jaipur

**MJHSC 102: Basic Food Preparation**

**Max. Marks: 25**

**Min. Marks: 10**

**Credits: 01**

**Duration: 3 Hrs**

**Course Outcomes:**

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

1. Develop an understanding of the basic cooking terms, Weights and measures, equipment's, Rules and regulation of Working in the Laboratory.
2. Develop knowledge of the basic recipes prepared from cereal, pulses and vegetables.
3. Prepare various recipes prepared from different methods of cooking

- 1 Introduction – Foods Lab. Basic cooking terms, Weights and measures, equipment, Rules and regulation of Working in the Laboratory
- 2 Beverages
- 3 Soups
- 4 Desserts
- 5 Snacks
- 6 Salads
- 7 Bakery items
- 8 Basic preparations from cereals, pulses and vegetables
- 9 Preparing recipes using different methods of cooking – baking, roasting, boiling, steaming. Simmering, deep frying, shallow frying.

**Note:** Importance to be given to methods of preparation, taste, attractive service, portion size & time plan.

**MARKS DISTRIBUTION:**

**Time: 3 hours**

**Max. Marks: 25**

**Min. Marks: 10**

- |                                      |    |
|--------------------------------------|----|
| 1. Internal.                         | 05 |
| 2. Selection and planning of recipes | 05 |
| 3. Preparation of two dishes         | 10 |
| 4. Table management, service         | 05 |

**TOTAL - 25**

## SEM-II

### MJHSC 201: Introduction to Textiles, Designing and Garment Construction

Max. Marks : 50

Min Marks: 10

Credits:03

Duration: 3 Hr

#### Course Outcomes:

On successful completion of the course, the student will be able to:-

1. Develop an understanding to Identify various Textiles fibers, yarns and their manufacturing process.
2. Apply the knowledge of various Weaving, finishing, dyeing and Printing techniques.
3. Explain the concept of Fashion Designing and garment production.

#### UNIT I

##### 1. Textile Fibres:

- (a) Definition, Classification and General properties of Textile Fibres.
- (b) Manufacturing, properties, care, storage and their importance to consumer of -
  - Natural Fibers: Cotton, Linen, Silk, Wool.
  - Manmade Fibers: Rayon, Nylon, Polyester.

##### 2. Yarn construction:

- (a) Methods of spinning – Mechanical and Chemical
- (b) Types of yarns-Simple, Complex and Textured

##### 3. Fabric Construction:

- (a) Knitting, Felting, Braiding
- (b) Weaving – Meaning, Process, Structure of loom
- (c) Types of Weaves - Plain, Twill, Satin and Sateen, Pile and Jacquard.
- (d) Warp, Weft, Selvedge, Balance and count of cloth

##### 4. Finishing –

- (a) Finishing – Meaning, Objective and importance to consumers
- (b) Classification of textile finishes: Mechanical and Chemical: Temporary and Permanent

#### UNIT II

##### 5. Dyeing and Printing

- (a) Types of dyes, Dyeing process, Stages of dyeing
- (b) Styles of printing – Direct, Resist and Discharge
- (c) Methods of Printing - Block, Screen, Roller, Resist, Discharge and Stencil

##### 6. Fashion Designing – Concept and Objectives

- (a) Design: Meaning and types
- (b) Classification of Design: Structural Design and Applied Design
- (c) Types of motifs: Geometrical, Stylized, Figurative, Abstract, Folk, Tribal

##### 7. Principles of Art and their application in Apparel designing - Balance, Proportion, Harmony, Rhythm, Emphasis

##### 8. Elements of art and their application in Apparel designing - Line, Texture, Form, Pattern, Color and Space

### UNIT III

#### 9. Introduction to Drafting and Stitching

- (a) Definitions of Fabric Grain, Bias, Selvedge, Seam Allowance, Facing and Ease Sticking
- (b) Importance of taking body measurements
- (c) Drafting as a method of pattern making

#### 10. Preparatory steps for Garment Construction

- (a) Preshrinking, Straightening and Truing
- (b) Pinning, Marking and Cutting; Additional seam techniques: clipping, notching, grading, trimming, easing, under stitching, stay stitching, trimming a corner.

#### 11. Layouts:

- (a) Layouts for patterns- General Guidelines, Repeat, Basic Layouts- Lengthwise (Vertical), Partial Lengthwise, Crosswise (Horizontal), Double Fold, Open, Combination Fold, Twill
- (b) Layouts for fabrics- Unidirectional, bold and large prints, plaids, stripes and checks, various widths of fabrics.

#### 12. Study of garment components: Classification and application of sleeves, cuffs, collars, necklines, plackets, pockets, yokes, trims and accessories

#### Reference Books:

- Dhantyagi, Sushila: Fundamentals of textiles and their care Orient Longmans, Bombay.
- Daulkar. Durga: A guide to household textile and laundry work. Atma Ram & Sons, New Delhi.
- Isabel B. Wingtag: Textile fibres and their selection Prentice Hall Inc. Englewood, Chiff, N. Jersey
- Hess, Katherine: Textile fibres and their uses – Oxford & IBH Publishing House, New Delhi.
- Mathews, Mary: Practical clothing Construction – Part I Cosmic Press,
- Corbman B.P: Textile Fibre, McGraw hill Co. New York.

## MJHSC 202 : Fashion Designing and Clothing Construction

**Max. Marks : 25**

**Min. Marks: 20**

**Credits:01**

**Duration: 3 Hrs**

### **Course Outcomes:**

On successful completion of the course, the student will be able to:-

1. Develop skills in apparel designing.
2. Enhance professional skills in fashion designing.
3. Create the basic knowledge of traditional embroideries of India.

### **Section A**

1. a – Collecting samples of various types of weaves.  
b – Dyeing and Printing (Articles-atleast 1)
  - i. Tie & Dye
  - ii. Block Printing

### **Section B – Needlecraft and clothing Construction**

2. a - Equipment used for stitching and measurement.  
b - Taking of body Measurements  
c – Importance of drafting and making paper pattern  
d – Calculation of material  
e – Preparation of fabric before cutting
3. Preparations of Samples -Basic seams and Fastener
4. Drafting, Cutting and stitching of:
  - i. Children – basic bodice block – adaptation to A Line frock
  - ii. Ladies - Saree Petticoat



DEPARTMENT OF PHYSICAL EDUCATION

**Course Structure in Semester-I**

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MNPED-101	Foundation and History of Physical Education	Minor		3	5	20	50	30/75
MNPED-102	Practical	Minor		01	-	-	25	10/25
AEC	General English	AEC		02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

**MNPED-101 : Foundation and History of Physical Education**

**Max. Marks: 75**

**Min. Marks: 30**

**Credits: 3**

**Duration: 2 ½ Hrs.**

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

- Identify the concept of Physical Education and sports science.
- Analyze the historical development and evaluate the current landscape of physical education and sports in India.
- Compare and analyze major international sports events and describe the roles of their organizing committees.

**Unit - I**

- Physical Education: - meaning, definitions, aims and objectives of physical education.
- Physical Education programme: pre-service programme, intramural programme, extramural programme, fitness and recreational programme.
- Importance of physical education.
- Relationship of physical education with education.
- Physical Education an art and science.

**Unit – II**

- Division of ancient Period:
  - Indus Valley Civilization Period. (3250 BC – 2500 BC)
  - Vedic Period (2500 BC – 600 BC)
  - Hindu Period (600 BC – 1000AD)
  - Medieval Period (1000 AD – 1757 AD)
  - British Period (Before 1947)
  - Physical Education in India (After 1947)
- National policies on education with specific reference to 1986: meaning and objectives.
- Sports Authority of India (S.A.I.): Meaning, objectives and functions.
- Indian Olympic Association (I.O.A.): introduction, objectives and committees.

### Unit - III

**Start of Games, Objectives, Motto, Flag, Opening & Closing Ceremonies, Committees and their Function of the following games:**

- Ancient and Modern Olympic Games
- Commonwealth
- Asian Games
- S.A.F. Games
- Indian National Games

**Reference Books:**

- Bucher C.A. (1983) "Foundation of Physical Education and Sport" the C.V. Mosky Co. St. Louis Toronto- London.
- Kamlesh & Sangral, (2000) "Principles & History of Physical Education," Prakash Brothers, Ludhiana.
- Singh Ajmer et.al., (2000) "Olympic Movement" Kalyani Publishers, Ludhiana.

### **MNPED-102 : Practical**

**Max. Marks: 25**

**Min. Marks: 10**

**Credits: 1**

**Duration: 4 Hrs.**

**Course outcomes:**

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

- Demonstrate the basic skills and techniques of the racket sports listed in the syllabus.
- Administer and evaluate the Canadian Physical Fitness Test (Modified) to assess physical fitness levels.
- Perform and evaluate throwing events in Track and Field as specified in the syllabus.

**Topics for practical:**

- Opt any one Racket Sport
  - a. Table Tennis
  - b. Badminton
  - c. Tennis
- Canadian Physical Fitness Test (Modified)
- Track and Field Throwing event: Shot Put / Javelin / Discus/ Hammer

**Reference Books:**

- Lumpkin, A. (2007) Introduction to Physical Education, Exercise Science and Sports Studies, McGraw Hill, New York, U.S.A.
- Fahey, T.D., M.P. Insel and W.T. Rath (2006), Fit & Well: Core Concepts and Labs in Physical Fitness, McGraw Hill, New York.
- Hoeger, W W K and S.A. Hoeger (2004). Principles and Labs for Fitness and Wellness, Thomson Wadsworth, California, USA.

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MNPED-201	Test, Measurement and Evaluation in Physical Education	Minor		3	5	20	50	30/75
MNPED-202	Practical	Minor		1	-	-	25	10/25
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Program	ISO	01	01	-	-	25	10/25

### MNPED-201: Test, Measurement and Evaluation in Physical Education

**Max. Marks: 75**

**Min. Marks: 30**

**Credits: 3**

**Duration: 2 ½ Hrs.**

**Course outcomes:**

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

- Identify the purpose of test, measurement and evaluation in physical education.
- Classify the key criteria for selecting and administering tests.
- Administer and interpret various physical, motor, and skill fitness tests.

#### Unit - I

- Meaning of test, measurement and evaluation.
- Need and importance of test, measurement and evaluation in Physical education.
- Principles of measurement and evaluation.

#### Unit II

- Criteria of test selection: scientific authenticity (objectivity, reliability, validity and norms) an administrative feasibility and educational application.
- Administration of test: advance preparation, duties during and after testing.
- Types of evaluation: formative, summative, objective and subjective.

#### Unit III

- Physical fitness test: AAHPER youth fitness test for boys and girls, Kraus Weber test (Minimum muscle strength), Cooper's 12/9 min. run-walk test.
- Motor fitness test: J.C.R. test, Indiana motor fitness test and Barrow motor ability test.
- Skill Test: Brady volleyball test, Johnson basketball ability test, Harbans Singh field hockey test, Lockhart-McPherson badminton test

**Reference Books:**

- **Kansal, D.K. (1996).** Test and measurement in sports and physical education. New Delhi: D.V.S. Publications.
- **Kamlesh M.L. (2017).** Methods in physical education, New Delhi: Friends Publications.
- **Mathews, D.K., (1973).** Measurement in physical education, Philadelphia: W.B. Saunders Company.
- **Karad P.L. (2019).** Test, measurement and evaluation physical education, New Delhi: Khel Sahitya Kendra
- **Singh, Hardy, (1991).**Science of Sports Training, New Delhi: DVS Publications

**MNPED-202: Practical****Max. Marks:25****Min. Marks: 10****Credits: 1****Duration: 4 Hrs.****Course outcomes:**

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

- Demonstrate the techniques and principles of circuit training for improving physical fitness.
- Administer and interpret sports skill tests for Basketball, Volleyball, Field Hockey, and Badminton.
- Understand and demonstrate the basic skills and techniques in combat sports.

**Topics for practical**

1. Physical Fitness: Circuit Training
2. Sports Skill Test:  
Basketball: Johnson Test  
  
Volleyball: Brady Volleyball Test  
  
Field Hockey: Harbans Singh Test  
  
Badminton: Lockhart-McPherson test
3. Combat Sports: Wrestling / Judo/ Karate/ Taekwondo

**Reference Books:**

- **Karad P.L. (2019).** Test, measurement and evaluation physical education, New Delhi: Khel Sahitya Kendra
- **Singh, Hardy, (1991).**Science of Sports Training, New Delhi: DVS Publications

**DEPARTMENT OF POLITICAL SCIENCE**

**Course Structure in Semester-I**

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/M ax
MJPOL-101	Political Theory	Major	04	04	10	20	70	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

**MJPOL-101: Political Theory**

**Max. Marks: 100**  
**Credits: 04**

**Min. Marks: 40**  
**Duration: 2½ Hrs.**

**Course outcomes:** After successful completion of the paper a student will be able to:

1. Discover various dimensions of Political theory & identify different forms of Government and distinguish between them.
2. Prioritize students' socialization, participation and decision-making skills through conceptual awareness of Politico-Ethical principles.
3. Analyze and compare various theories of State which will give students a cutting edge in competitive exams.

**UNIT I**

- Meaning, Nature, and Significance of Political Theory
- Normative Approach - Features, Nature, Scope, Approaches, Critical Evaluation  
Empirical Approach - Features, Nature, Scope, Approaches
- Behaviouralism– Development of the Movement, Features, Critical Evaluation
- Post Behaviouralism – Causes for its Emergence, Features and Evaluation

**UNIT II**

**STATE –**

- |                        |                      |            |
|------------------------|----------------------|------------|
| • Components           | • State and Society  | • Nature   |
| • State and Government | • Theories of Origin | • Function |

**THEORIES OF STATE**

- Idealist
- Liberal
- Marxist
- Anarchist

### TRADITIONAL CONCEPTS:

- SOVEREIGNTY – Meaning, Types and Aspects, Critical Evaluation
- RIGHTS – Meaning, Nature, Classification, Rights and Duties
- LIBERTY - Meaning, Types, Safeguards
- EQUALITY - Meaning, Types, Relationship between Equality and Liberty
- THEORIES OF REPRESENTATION – Plural and Weighted Voting, Universal Adult Suffrage, Constituencies, Methods of Minority Representation

### UNIT III

### MODERN CONCEPTS:

- POWER – Meaning, Characteristics, Sources, Types, Methods of exercising Power
- AUTHORITY- Meaning, Sources, Characteristics, Types, Relationship between Authority and Power
- LEGITIMACY – Meaning, Types, Crisis of Legitimacy
- POLITICAL DEVELOPMENT (Lucian Pye)
- POLITICAL CULTURE- (Almond and Powell)

### ORGANIZATION AND FUNCTIONS OF:

- THE LEGISLATURE – Meaning, Functions, Organisation, Committee System, Direct Legislation, Delegated Legislation, Decline of Legislature
- THE EXECUTIVE - Meaning, Types of Executives, Functions
- THE JUDICIARY - Meaning, Functions, Independence of Judiciary, Judicial Review

### Reference Books-

1. A. Ashirvadam: Principles of Political Science
2. D. Gernimo: Beyond Ideology: The Revival of Political Theory
3. Robert Dahl: Political Theory and Modern State
4. J. C. Johari: Principles of Political Science
5. R. C. Agarwal: Political Theory
6. Sir. E. Barker: Principles of Social and Political Theory
7. R. G. Gettle: Introduction to Political Science
8. L. S. Rathore: In Defence of Political Theory
9. A. C. Kapoor: Principles of Political Science

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/M ax
MJPOL-201	Indian Political Thought	Major	04	04	10	20	70	40/100
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	SOR	01	01	-	-	25	10/25

# MJPOL 201- Indian Political Thought

**Max. Marks:**

**Credits: 04**

**Min. Marks: 40**

**Duration: 2½ Hrs.**

**Course outcomes:** After successful completion of the paper a student will be able to:

1. Examine the political and social ideas of Manu and Kautilya, Raja Ram Mohan Roy and Dayanand Saraswati
2. Assess the social and political views of G. K. Gokhale and Tilak
3. This paper instills democratic awareness and social responsibility as well as opens avenues for a career in teaching and social work.

## Unit I

### Ancient Political Thought-

- Manu- Social and Political Ideas.
- Kautilya-Saptang Theory and Mandal Theory

### Social Reformist-

- Dayanand Saraswati-Socio-political Ideas and Arya Samaj
- Raja Ram Mohan Roy-Socio-political Ideas and Brahmo Samaj

## Unit II

- G.K Gokhale- Social, Political and Economic Ideas
- Tilak- Social and Political Ideas

### M.K.Gandhi

- Satyagraha
- Ideal State
- Political, Social and Economic Ideas
- Truth and Non-Violence
- Religion and God
- Gandhism and Communism

## Unit III

### Jawaharlal Nehru-

- Ideas on History and Communism
- Political and Economic Ideas
- Secularism
- Democratic Socialism

### M.N.Roy-

- New Humanism

### Jai Prakash Narayan

- Political and Economic Ideas
- Sarvodaya

### B.R. Ambedkar

- Social and Political Ideas

**Reference Books:**

1. C.Bhraill: Social and Political Ideas of B.R.Ambedkar
2. Purshottam Nagar: Indian Modern Social and Political Thoughts
3. M.A.Buch: Rise and Growth of Indian Liberalism
4. B.R.Purohit: Development of Political Thought
5. V.P.Verma: Indian Political Thought (Vol II)
6. V.R.Mehta: Foundations of Political Thought
7. V.D.Mahajan: Recent Political Thought
8. A.R.Appodarai: Indian Political Thinking
9. V.P.Verma: Indian Political Thought (Vol I and Vol II)
10. Vishnoo Bhagwan: Indian Political Thinkers
11. J.P.Suda: Main Currents of Indian Political Thought
12. V.R.Mehta: Foundations of Indian Political Thought
13. Virendra Grover: Bal Gandhadhar Tilak



**DEPARTMENT OF PSYCHOLOGY**

**Course Structure in Semester-I**

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJPSY-101	Basic Psychological Processes-I	Major	03	03	5	20	50	30/75
MJPSY-102	Practical – Basic Psychological Tests and Experiments- I	Major	01	01	-	-	25	10/25
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

**MJPSY-101:Basic Psychological Processes-I**

**Max. Marks: 75**

**Min. Marks: 30**

**No. of Credits: 03**

**Duration:2½Hrs**

**Course Outcome:** On successful completion of the course, the student will be able to:-

1. Examine the major perspectives of Psychology.
2. Justify theories of Motivation and Emotion.
3. Assess the concepts of Sensory and Perceptual processes of human beings.

**Unit – I**

**Introduction to Psychology:**Definition, Nature and Scope of Psychology, Goals of Psychology.

**Historical Perspectives in Psychology:**Structuralism, Functionalism, Gestalt and Psychoanalysis. (Brief Introduction)

**Modern Perspectives in Psychology:**Behavioural, Humanistic, Cognitive, Evolutionary, Socio-cultural and Multi-cultural. (Brief Introduction)

**Methods of Psychology:** Experiment, Observation, Interview, Questionnaire, Case Study, Survey and Meta-analysis. (Meaning, Types, Advantages and Disadvantages)

**Unit - II**

**Motivation and Emotion:**

**Motivation:** Indicators of Motivated Behaviour. Nature and Classification of Motives – Biogenic and Sociogenic. Theories of Motivation: Drive Theory, Incentive Theory, Optimal Level Theory, Goal setting Theory and Maslow’s Need Hierarchy Theory.

**Emotion:** Nature, Development, Expression and Control of Emotions. Theories of Emotion: Cannon-Bard Theory, James-LangeTheory and Schachter-SingerTheory.

**Unit – III**

**Sensory, Attention and Perceptual Processes:**

**Attention:**Definition, Characteristics and Determinants of Attention. Selective Attention and Sustained Attention.

**Perception:** Definition and Determinants of Perception. Perceptual constancies (Size, Shape and Brightness), Organizing Principles of Perception, Form and Depth Perception.

**Thinking:** Nature and Types of Thinking.

**Problem Solving:** Meaning and Methods of Problem Solving.

**Reference Books:**

1. Baron, R. A. (2001). Introduction to Psychology. New Delhi: Pearson Education Pvt. Ltd.
2. Morgan, C. T., King, R. A., Weisz, J. R. and Schopler, J. (1986). Introduction to Psychology. McGraw-Hill Book Co.

**MJPSY-102:Practical – Basic Psychological Tests and Experiments- I**

**Max. Marks: 25**

**Min.**

**Marks: 10**

**Credits: 01**

**Duration: 4Hrs**

**Course Outcome:** On successful completion of the course, the student will be able to:-

1. Understand the aspects related to the administration of Psychological Tests and conduction of Psychological Experiments.
2. Examine the importance of Standardization of Psychological Tests and Experiments
3. Explain and analyze the results derived from Psychological Tests and Experiments.

**(Any three of the following)**

- Anxiety Test
- Level of Aspiration
- Parent Child Relationship Scale
- Emotional Intelligence Test
- Any two activities/mini project/assignment based on the following methods of Psychology:
  - Observation
  - Interview
  - Survey
  - Questionnaire
  - Experiment

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJPSY-201	Basic Psychological Processes – II	Major	03	03	5	20	50	30/75
MJPSY-202	Practical Basic Psychological Tests and Experiments- II	Major	01	01	-	-	25	10/25
MDC-202	Anger and Stress Management	MDC	03	03	5	20	50	30/75
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	SOR	01	01	-	-	25	10/25

### MJPSY- 201 Basic Psychological Processes - II

**Max. Marks: 75**

**Min.**

**Marks: 30**

**No. of Credits - 03**

**Duration: 2½Hrs**

**Course Outcome:** On successful completion of the course, the student will be able to:-

1. Illustrate the effect of neural mechanisms on Human behaviour.
2. Explain Psychological bases of Learning, Memory and Forgetting.
3. Evaluate aspects of Personality and Intelligence.

#### Unit I

**Biological Basis of Behaviour:** Genes and Behaviour. (Introduction)

**Nervous System – Neuron:** Structure, Function, Synapse, Neurotransmitters.

**The Central Nervous System:** The Brain and the Spinal Cord. (Structure and Functions), Hemispheric Specialization.

**Peripheral Nervous System:** Autonomous Nervous System, Somatic Nervous System (Functions).

**Endocrine glands:** Hormones and their effects on behaviour.

#### Unit II

**Learning, Memory and Forgetting:**

**Learning:** Definition. Classical Conditioning: Experiment and Basic Processes – Acquisition, Extinction, Spontaneous Recovery, Reconditioning, Stimulus Generalization, Stimulus Discrimination. Types of Conditioning – Simultaneous, Delayed, Trace and Backward.

**Operant Conditioning:** Experiment and Basic Processes – Reinforcement, Shaping, Chaining and Schedules of Reinforcement.

**Trial and Error theory of Learning, Laws of learning, Cognitive learning and Observational learning.**

**Memory:** Definition and Process (Encoding, Storage and Retrieval).

Factors affecting Encoding and Retrieval. Theories – Information Processing Model, Depth of Processing model, Encoding Specificity Model, Mnemonics.

Short term and Long term memory: Nature, Characteristics and Types.

**Forgetting:** Definition, Theories: Decay, Interference and Retrieval Failure theory.

### **Unit III**

#### **Intelligence and Personality:**

**Intelligence:** Definition, Determinants and Measurement.

Theories of Intelligence: Spearman, Thurstone, Guilford, Robert Sternberg, Gardner and PASS Model of Intelligence.

**Personality:** Definition, Biological, Psychological and Socio-cultural Determinants.

Theories of Personality: Trait theories - Allport, Cattell, Eysenck and Robert McCrae & Paul Costa's theory, Basic Type theories, Freud's Psycho-analytical Theory.

Assessment of Personality: Personality inventories and Projective techniques.

#### **Reference Books:**

1. Baron, R. A. (2001). Introduction to Psychology. New Delhi: Pearson Education Pvt. Ltd.
2. Morgan, C. T., King, R. A., Weisz, J. R. and Schopler, J. (1986). Introduction to Psychology. McGraw-Hill Book Co.

### **MJPSY-202:Practical-Basic Psychological Tests and Experiments- II**

**Max. Marks: 25**

**Min.**

**Marks: 10**

**Credit: 01**

**Duration: 4Hrs**

**Course Outcome:** On successful completion of the course, the student will be able to:-

1. Understand the aspects related to the administration of psychological tests and conduction of psychological experiments.
2. Examine the importance of standardization of Psychological Tests and Experiments
3. Explain and analyze the results derived from Psychological tests and experiments.

**(Any three of the following)**

- Learning Curve
- Forgetting Curve
- Serial Positioning Effect
- Projective Personality Test
- Objective Personality Test
- Intelligence Test

# DEPARTMENT OF SOCIOLOGY

## Course Structure in Semester-I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJSOC-101	Introductory Sociology	Major	04	04	10	20	70	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MJSOC – 101: Introductory Sociology

**Max. Marks: 100**

**Credits: 04**

**Min. Marks: 40**

**Duration: 2½Hrs**

**Course outcomes:** On successful completion of the course, the student will be able to:

1. Identify and understand the meaning, nature, scope and trace history of Sociology
2. Examine the process of Socialization and comprehend basic concepts like culture, status, role etc.
3. Relate the structure and stratification system of society and explain social change and social control.

#### Unit I

The Meaning, Definition of Sociology.  
Nature and Scope of Sociology  
Origin of Sociology  
Perspectives of Sociology

#### Unit II

Basic Concepts:  
Society, Community, Institutions, Associations, Groups  
Culture  
Status and Role  
Socialization – Meaning, Stages, Agencies, Theories (Cooley, Mead and Freud)

#### Unit III

Social Control – Meaning, Characteristics, Types and Agencies  
Social Stratification -Meaning, Forms and Theories of Stratification.  
Social Processes – Meaning, Characteristics and Types-Assimilation, Co-operation, Competition, Conflict  
Social Change: Meaning, Pattern, Factors and Theories

**Reference Books:**

- Merton, R.1968, Social theory and social structure
- Aron, R.1965, Main currents in sociological thought,vol1.London:Penguin books
- Linton, R.1936.The study of man
- Bierstedt, R.1974. The social order New York: McGraw Hill
- Tumin, Melvin M. Social Stratification: The Forms and functions of in equality, Prentice Hall

**Course Structure in Semester-II**

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJSOC-201	Fundamentals of Social Research	Major	04	04	10	20	70	40/100
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
ISO	Social Outreach Programme	ISO	01	01	-	-	25	10/25

**MJSOC- 201 Fundamentals of Social Research****Max. Marks: 100****Min. Marks: 40****Credits: 04****Duration: 2½ Hrs****Course outcomes:**On successful completion of the course, the student will be able to:

1. Develop the habit of scrutinizing social assumptions and beliefs in the light of scientific evidence, differentiate between value neutrality and subjectivity
2. Understand nature of social problem, explain as well as construct hypothesis, discuss and infer to the scientific methods involved in social research
3. Organize and plan diagrammatic and graphical representation of data and make use of statistics.

**UNIT I**

Philosophical Issues in social science research, Positivism and Post Positivist Approaches, Reason and Science; Inductive and Deductive Logic; Value and Value-neutrality in Social Sciences;

Ethics in Social Sciences; Concept, Variable, Measurement Scales and operationalisation. Steps in research, Research design, meaning and types.

## **UNIT II**

Hypothesis, Theory, Fact, Identification of Research Problem, Empirical Generalizations, Sampling and Sampling Procedure, Tools for qualitative research- Observation, Interview, case study, ethnography, Quantitative: Survey, questionnaire, schedule, structured interview

## **UNIT III**

Data Analysis: Data Processing, Classification, Tabulation and Analysis, Diagrammatic and Graphical Representation of Data, Use of Statistics in Social Research, Central Tendencies – Mean, Median, Mode, report writing

### **Reference Books:**

- Blalock H.M.: Social Statistics 1987, Mc Graw Hill Education, United Kingdom.
- Yadava S & Yadav K.N.: Statistical analysis for Social Sciences, 1995, Manak publications Delhi.
- Pauline V. Young: Scientific Social Survey and Research, 1911, Prentice Hall, Delhi.
- B.N. Ghosh: Social Research and Scientific Methods, 2015 Sterling publications Pvt Ltd Delhi.
- Ahuja Ram: Research Methods 2002, Rawat Publications Jaipur.
  - Kothari CR: Research methodology 2009 New Age International (P) ltd, New Delhi

# VOCATIONAL COMPUTER APPLICATION

## Course Structure in Semester – I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MNVCA-101	Computer Fundamentals and PC Software	Minor	03	03	5	20	50	30/75
MNVCA-102	Practical	Minor	01	01	-	-	25	10/25
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MNVCA – 101: Computer Fundamentals and PC Software

Max. Marks: 50

Min. Marks:

20

Credits: 03

Duration: 2½

hrs

**Learning Outcome:** On successful completion of the course, the students will be able to

1. Describe computer systems, their types and the uses of various input devices
2. Categorize different output devices on the basis of operation and study different tools of Microsoft Word by hands on practice
3. Develop charts and validation on the data Apply various functions on the excel sheet and Design effective presentation by implementing different formatting styles.

#### Unit - I

**Introduction to Computer:** Definition, Diagram, Characteristics, Classification of Computers: Analog Computers, Digital Computers, Hybrid Computers, Classifications of computer on the basis of size and speed, different type of computers, Indian Super Computer, Applications of Computers

**Input Devices:** keyboard, mouse, touch pad, touch screens, data scanning devices, optical recognition systems: bar code readers, optical mark readers, Optical character reader. Digital camera

#### Unit – II

**Output Devices:** Hard copy devices: Printer (impact printers), dot matrix printer, line printer, (non-impact printers), inkjet, laser printer, 3D printer, barcode printers. Soft copy devices: (Computer Display) CRT, Flat Panel Display: LCD, plasma display panel.

**Introduction to memory:** classifications, volatile memory, non-volatile memory

**Software:** System software, application software, programming software.

**MS-Word:** Introduction to MS-Word, Features, Application Areas and its uses, types of views, Creating & Saving: New Document, copy, cut, paste, paste special, clipboard, undo, redo, Fonts, Paragraphs: Indentation and Spacing, Columns & Breaks, Styles, Find, Replace & Goto. Inserting Tables, Picture, ClipArt, Shapes, Smart Art and Charts, Symbols and Equations, Hyperlink, Bookmark. Header & Footer. DropCap, Textbox, WordArt, Date and Time. Table of contents, Footnotes and Endnotes, Page background. Mail merge, Macros, Auto correct and Auto Text. Comments, Page Setup, Size, Margins, Gutter, Orientation.

#### UNIT-III



**MS-Excel:** MS-Excel: Introduction, Features, Application Areas and its uses, views and its types, formatting and its types. **Charts:** Line, bar, column, area, pie. Pivot Tables, Data management (Sort, filters, Validation, consolidation, Text to column), auditing and tracing.

**Functions and Formulas -Text:** char, concatenate exact, find, left, right, mid, lower, upper, proper, search, substitute, trim. **Logical:** and, or, not **Math and trig:** abs, int, even, odd, fact, mod, pi, power, product, round, roman, sign, sqrt, trim. **Statistical:** Average, count. Protecting sheet and workbook.

**MS-PowerPoint:** Introduction to PowerPoint, Features, Application Areas and its uses, Creating Presentations through Blank Presentations, Templates, Slide Master, Views of PowerPoint, Formatting of Presentations : Inserting Graphics and Animations, Formatting & Customizing Presentations : Slide Transactions, Custom Animation, Inserting sounds. Set up and Custom Slide Show , Handouts.

**Reference Books:**

- Pradeep K. Sinha, Priti Sinha, “Computer Fundamentals”. BPB Publications.
- Rajaraman, V., “Fundamental of Computers”. Prentice Hall India, New Delhi.
- Fundamentals Of Information Technology, 2E , Alexis Leon & Mathews Leon, Vikas Publishing
- Microsoft Office 2007 – Joyce Cox & Joan Preppernau – PHI Publication
- Working in Microsoft Office- Ron Mans Field, TMH.

**Course Structure in Semester – II**

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MNVCA-201	Fundamental of ‘C’ Programming	Minor	03	03	5	20	50	30/75
MNVCA-202	Practical	Minor	01	01	-	-	25	10/25
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
ISO	Social Outreach Programme	ISO	01	01	-	-	25	10/25

**MNVCA – 201: Fundamental of ‘C’ Programming**

**Max. Marks: 50**

**20**

**Credits: 03**

**hrs.**

**Min. Marks:**

**Duration: 2 ½**

**Learning Outcome:** On successful completion of the course, the students will be able to

1. Understand the fundamental concepts of the C programming language, proficient in using input/output instructions, operators and looping
2. Demonstrate proficiency in working with arrays in C and understanding of function mechanisms
3. Gain proficiency in working with pointers and arrays, structures and union.

## Unit - I

**'C' Language:** Character Set, Keywords, Constants, Variables, Data Types, Type Conversion, Instruction & its types: **Input Output Instructions**, Operators & Expressions: Arithmetic, Relational, Logical, Conditional, Arithmetic Instructions.

**Control Instructions:** Decision Control (if, if-else, if else ladder, nested if, switch case), Loop Control (while, for, do-while, Nesting Loops), Jump statements (break, continue, goto )

## Unit – II

**Arrays:** - Concept of Arrays, one dimensional array & Two dimensional array, Storage strategy, Array Initialization, Operations on Arrays (traversing, addition, subtraction, transpose), Search - linear & binary. Sorting - bubble sort & selection sort.

**Functions:** - Declaration, calling (Call by value, Call by reference) & Definition of functions, Recursion, Storage Class (auto, static, register, extern), Scope rules (Local, Global).

## UNIT-III

**Pointers:** - Pointers and addresses, Pointers as Function arguments, Pointers and Arrays, Address Arithmetic. Character Pointers, String handling and String functions (strlen, strcat, strcmp, strcmpi, strcmp, strcpy).

**Structure and Union:** Basics, Structures and Functions, Arrays of Structures, structure pointer variables. Union definition and its use.

### Reference Books:

- Let Us 'C' -Yashavant PKanetkar, BPB Publications
- Programming in Ansi 'C' – Balaguruswami – TMH.
- C' Programmung Language – Kernighan & Ritchie - PHI
- C' How to Program – Dietel & Dietel – PHI
- C' Programmung - Dr. Neeraj Bhargava & Dr. Ritu Bhargava, AlkaPublicationas

**SOPHIA GIRLS' COLLEGE**  
**(AUTONOMOUS)**  
**AJMER**



**Scheme of Examination**  
**And**

**SYLLABUS**  
**BATCH 2023**

**FOR**

**Four-Year Under Graduate Honours**  
**Program**

**(Mathematics as Major/Minor)**

**Under**

**Choice Based Credit System**  
**with**

**New Education Policy**  
**Semester – I to VIII**

## BACHELOR OF SCIENCE

Eligibility for admission in First Year of B.Sc. Mathematics is 10+2 examination of any Board with at least 50% marks. With regard to admission on reserved category seats government rules will be applicable.

### SCHEME OF EXAMINATION

The number of the paper and the maximum marks for each paper together, with the minimum marks required to pass are shown against each subject separately. It will be necessary for a candidate to pass in the theory as well as the practical part of a subject/paper, wherever prescribed, separately.

Classification of successful candidates shall be as follows:

First Division 60%	of the aggregate marks prescribed in Semesters I to VI taken together
Second Division 50%	

All the rest shall be declared to have passed the examination.

- For passing a candidate shall have to secure at least 40% marks in each course (Theory and Practical separately).
- No division shall be awarded in Semesters I to V.
- Whenever a candidate appears for a due paper examination, she will do so according to the syllabus in force.
- A candidate not appearing in any examination/absent in any paper of term end examination shall be considered as having DUE in those papers.

### End Semester Examination Pattern

**Maximum Marks: 70**

**Duration: 2½ Hrs**

#### Section A

**10 × 1 = 10 Marks**

Contains 10 Questions of 1 mark each and all are compulsory. Three questions from each unit and one extra question from any one unit

#### Section B

**5+5+5 = 15 Marks**

Contains 3 questions with internal choice (Two questions from each unit). A student has to attempt 3 questions, choosing at least one question from each unit.

#### Section C

**15 × 3 = 45 Marks**

Contains 3 questions with internal choice (Two questions from each unit). Each Question carries 15 marks. A Student has to attempt 3 questions, choosing at least one question from each unit.

## FYUP CREDIT SCHEME 2023

### STRUCTURE OF 3 YEAR UNDERGRADUATE PROGRAM BASED ON NEP (NON- PRACTICAL SUBJECTS)

SEM	Honours With Research	Multi-Disciplinary Course	Ability Enhancement Course (AEC)	Skill Enhancement Course	Value Added Course	Summer Internship/ Social Outreach	Research Project OR Dissertation	Total	
	Required Credit for Major Course (4)	Total Required Credit (3) (6)	Total Required Credit (2) (6)	Total Required Credit (3) (9)	Total Required Credit (2) (8)	Total Required Credit (3)	Total Required Credit 20	Credit	Marks
Sem-I	MAJOR A (4) MAJOR B (4) MAJOR C (4)	MDC-I (3)	AEC-104 General English	SEC-I	-	-	-	20	500
Sem-II	MAJOR A (4) MAJOR B (4) MAJOR C (4)	MDC-II (3)	AEC-105 General Hindi	-	VAC-I Physical Fitness	ISO – 25 (1)	-	20	500
Total	24	6	4	3	2	1		40	1000

The allocation of the 2 Majors and minor subject is strictly based on merit  
(Performance in Sem - I & II)

The student requires 40 credits during the first year of the undergraduate program for qualifying for an Undergraduate Certificate

Sem-III	MAJOR-A1(4) MAJOR-A2(4) MAJOR-B1(4) MAJOR-B2(4) MINOR-C(4)	-	-	-	VAC-III GEN-106- Env. Cons. (2)	-	-	22	550
Sem-IV	MAJOR-A1(4) MAJOR-A2(4) MAJOR-B1(4) MAJOR-B2(4) MINOR-C (4)	-	50 COMM. ENG (2)	-	-	-	-	22	550
Total	40	-	2	-	2	-		44	1100
	64	6	6	3	4	1		84	2100

The student requires 84 credits during the second year of the undergraduate program for qualifying for a Diploma

Sem-V	MAJOR-A1(4) MAJOR-A2(4) /DSE-A2 MAJOR-B1(4) MAJOR-B2(4) /DSE-B2	-	-	SEC-V (3)	VAC-V Moocs/ swayam/ EEA(1)	ISO - 50 (2)	-	22	550
Sem-VI	MAJOR-A1(4) MAJOR-A2(4) /DSE-A2 MAJOR-B1(4) MAJOR-B2(4) /DSE-B2	-	-	SEC-VI (3)	VAC-VI Democratic awareness with legal literacy/ NSS/NCC(3)	-	-	22	550
Total	32	-	-	6	4	02	-	44	1100
	96	6	6	9	8	3		128	3200

On successful completion of three years, the relevant Undergraduate Degree shall be awarded. A Bachelor's degree requires 128 credits

**4 YEAR UNDER GRADUATE HONOURS PROGRAM**

Sem-VII	MAJOR-A1(6) MAJOR-A2(6)	-	-	-	-	-	MAJOR-A3 (6) <b>/DSE-A3</b> MAJOR-A4 (6)	24	400
Sem-VIII	MAJOR-A1(6) MAJOR-A2(6)	-	-	-	-	-	MAJOR-A3 (6) MAJOR-A4 (6)	24	400
Total	24	-	-	-	-	-	24	48	800
	120	6	6	9	8	3	24	176	4000

On the successful completion of the fourth year, a student shall be awarded an HONOURS Degree. A Bachelor's degree with Honours requires a total of 176 credits (to have an Honours Degree Major Subject should have 50% of total credits)

**4 YEAR UNDER GRADUATE HONOURS WITH RESEARCH**

Sem-VII	MAJOR-A1(6) MAJOR-A2(6)	-	-	-	-	-	MAJOR-A3 (6) <b>/DSE-A3</b> MAJOR-A4 <b>Research Methodology (6)</b>	24	400
Sem-VIII	MAJOR-A1(6) MAJOR-A2(6)	-	-	-	-	-	Research Project-II(12) OR Dissertation- II (12)	24	400
Total	24	-	-	-	-	-	24	48	800
	120	6	6	9	8	3	24	176	4000

On the successful completion of the fourth year, a student shall be awarded a Degree Honours with Research.

A Bachelor's degree of Honours with Research requires a total of 176 credits

## OUTLINE FOR UNDERGRADUATE COURSES UNDER NEP

The UGC has formulated a new student-centric “Curriculum and Credit Framework for Undergraduate Programmes (CCFUP)” incorporating a flexible choice-based credit system, multidisciplinary approach, and multiple entry and exit options. This will facilitate students to pursue their career path by choosing the subject/field of their interest.

The NEP 2020 undergraduate curriculum is a significant shift towards a more student-centric and flexible learning experience. It empowers students to design their own educational journeys and graduate with the knowledge and skills to thrive in the 21<sup>st</sup> century workforce.

Undergraduate degree programmes of either 3 or 4-year duration, with multiple entry and exit points and re-entry options, with appropriate certifications such as:

- A UG Certificate after completing 1 year (two semesters) of study in the chosen fields of study.
- A UG Diploma after 2 years (four semesters) of study.
- A Bachelor’s degree after a 3-year (six semesters) programme of study.
- A 4-year bachelor’s degree (Honours) after eight semesters programme of study.
- If the student completes a rigorous research project in their major area(a) of study in the 4<sup>th</sup> year of a bachelor’s degree (Honours with Research).

### **Course Under Choice Based Credit System (CBCS)**

#### **9. Major Discipline:**

- a. Discipline Specific Core Courses (DSCC):** A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core Course. Each core course carries 4 credits for non-practical course and for practical core course carries 4 credits (3 theory + 1 practical).
- b. Discipline Specific Elective (DSE):** Choice of specific topics as per a student’s need. Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective. Each core course carries 4 credits.

**10. Minor Course:** is a program that allows students to explore topics that cross traditional academic boundaries. These are designed to foster a more holistic and flexible education, encourage students to develop a broader skill set and a diverse knowledge base. Each minor course carries 4 credits.

**11. Multi-Disciplinary Course (MDC):** MDC are designed to bridge gaps between traditional academic boundaries, allowing students to explore and integrate knowledge from multiple disciplines. MDC courses offer a broad perspective and encourage creative problem-solving by exposing students to a range of subjects, 3 credits is assigned to MDC, students can select MDC in Semester 1 and 2. Student take elective courses outside their major, fostering cross-disciplinary knowledge.

**12. Ability Enhancement Core Courses (AECC) :** AECC are a category of courses designed to help students develop essential skills and knowledge that enhance their overall learning experience and personal development. It carries 2 credits each in Semester 1, 2 and 4.

**13. Skill Enhancement Course (SEC):** SEC are designed to equip students with practical skills and competencies that are relevant to the workforce and society. Skill-based education and vocational training to ensure students are employable and can contribute to economic and social needs. SEC has 3 credits each in semester 1, 5 and 6. These courses may be chosen from the SEC table as given in Semester 1, 5 and 6.

**14. Value Added Course (VAC):** VAC are designed for holistic development, encourage interdisciplinary learning, and prepare students for the demands of the modern workforce. These courses offer flexibility and can be tailored to meet emerging trends and industry needs. These courses are available in Semester 2, 3, 5 and 6. Each VAC carries 2 credits.

**15. Social Outreach / Summer Internship (SOR):** Community service involve students engaging in activities that benefit their communities, fostering a sense of social responsibility and civic engagement. SOR carries 3 credits each in Semester 2 and 5.

**16. Project, Dissertation & Internships:** These activities play a significant role in the NEP, as they offer students practical experience, real-world exposure and the opportunity to apply their knowledge to real-world situations. These elements are designed to bridge the gap between academic learning and industry requirements, ensuring that graduates are better prepared for employment or further studies.

## Program Outcome

Program outcomes for a Bachelor Science (B.Sc.) program, designed to align with the guidelines of the National Assessment and Accreditation Council (NAAC) and the National Education Policy (NEP) in India:

1. **Scientific Understanding and Practical Knowledge gain:** Students will be able to **analyze** and **evaluate** texts, theories, and concepts across various disciplines within the scientific domain, fostering informed reasoning and decision-making.
2. **Communication Skills and Digital Literacy:** Students will be able to **communicate** scientific concepts clearly and effectively, both orally and in writing, to a variety of audiences. Students will be able to **demonstrate** proficiency in using digital tools and technologies for research, communication, and collaboration, adapting to the demands of the modern workforce.
3. **Environmental Sustainability and Human welfare:** Students will be able to assess and evaluate both natural and Human environment, changes and their impacts on the ecosystem and human societies, proposing sustainable management strategies.
4. **Moral Ethical Awareness, Social Responsibility, and Community Engagement:** Students can **apply** moral and ethical principles and social responsibilities, enabling them to make morally sound decisions in personal and professional settings. Will be able to foster a sense of civic responsibility and service
5. **Critical Thinking and Analytical Reasoning:** Students will be able to **identify, evaluate, analyze and** effective strategies to solve real-world problems, preparing them for contemporary challenges.
6. **Scientific Reasoning and Problem-Solving:** Students can logically reason, discuss, interpret, and draw conclusions from the quantitative/qualitative data and experimental evidence. They will develop the capacity to extrapolate from what one has learnt and apply their competencies to solve problems contextualize into research and apply once learning to real-life situations



# DEPARTMENT OF MATHAMETICS

## Course Structure in Semester-I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJMAT-101	Differential Calculus and Matrices	Major	04	04	10	20	70	40/100
AEC	General English	AEC		02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MJMAT – 101: Differential Calculus and Matrices

Max. Marks: 100

Min. Marks:

40

Credit: 04

Duration: 2½Hrs

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

- Find pedal equation and asymptote of different curves.
- Solve problem related to radius of curvature and Partial differentiation.
- Apply the concepts of matrices to solve the real life problems.

#### Unit – I

**Differential Calculus:** Pedal equation and derivative of the length of an arc, asymptotes in cartesian coordinates, oblique asymptote, asymptote parallel to the co-ordinate axes, intersection of curve and its asymptote, tests for concavity, convexity and point of inflexion, singular points.

#### Unit – II

Curvature, radius of curvature at the origin, radius of curvature for (cartesian, polar, parametric and pedal curves), centre of curvature, length of chord of curvature parallel to the axis, length of chord of curvature passing through the pole and perpendicular to the radius vector, curve tracing (for cartesian and polar equations). Partial differentiation, change of variables, Euler's theorem on homogeneous functions, differentiation of implicit functions.

#### Unit - III

**Matrices:** Matrix, types of matrices, elementary operations on matrices, symmetric and skew symmetric matrices, hermitian and skew hermitian matrices, unitary matrix. Inverse of matrix, linear independence of row and column matrices, row rank, column rank and rank of matrix, equivalence of column and row rank. Applications of matrices to solve a system of linear (both homogeneous and non-homogenous) equations, theorems on consistency of a system of linear equation, eigen values, eigen vectors and the characteristic equation of a matrix, Cayley-Hamilton theorem and its use in finding inverse of a matrix.

#### Reference Books:

- Narayan, S. and Mittal P.K.. *A Text Book of Matrices*. S. Chand. New Delhi.
- Vasishtha A.R. and Chauhan J.P. *Matrices*. Krishna Publication.
- Gokhroo D.C. and Gokhroo Anil. *Matrices*. Navkar Prakashan, Ajmer.
- Chatterji, P.N.. *Differential Calculus*. Rajhans Prakashan Mandir, Meerut.
- Narayan, S.. *Differential Calculus*. Jaipur Publication House.
- Gokhroo, D.C. and Gokhroo Anil. *Differential Calculus*, Navkar Prakashan, Ajmer.

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJMAT-201	Vector Calculus and Geometry	Major	04	04	10	20	70	40/100
MDC-206	Fundamentals of Mathematics	MDC	03	03	5	20	50	30/75
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
ISO	Social Outreach Programme	ISO	01	01	-	-	25	10/25

### MJMAT– 201: Vector Calculus and Geometry

**Max. Marks: 100**

**Min. Marks:**

**40**

**Credit: 04**

**Duration: 2½Hrs**

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

- Learn the concepts of vector differentiations and integrations.
- Explain different types of conics in Cartesian coordinates.
- Solve Problem related to 3-Dimensional figure like Sphere, Cone and Cylinder.

#### Unit I

**Vector Calculus:** Scalar and vector point function, vector differentiation, gradient of a scalar point function, directional derivatives, vector equation of tangent plane and normal plane to the surface, divergence and curl of vector point function, identities involving these operators and related problems, vector integration, line and surface integral, theorem of Gauss, Green's and Stoke's (statements and verification only).

#### Unit II

**2 D Geometry:** General equation of second degree, tracing of conics, centre of a conic, coordinates of the centre. Equation of the conic referred to centre as origin, asymptotes of a conic, length and position of axes of a standard conic, tracing of ellipse, parabola and hyperbola.

The Polar equation of conic: polar equation of a straight line, circle and conic chord, auxiliary circle, tracing of conic  $\frac{1}{r} = 1 + e \cos\theta$

#### Unit III

**3 D Geometry:** Sphere, plane section of a sphere, tangent line and tangent plane of sphere, cone, enveloping cone and its equation, tangent plane of cone, reciprocal cone and its equation, cylinder, right circular cylinder and its equation, enveloping cylinder and its equation.

#### Reference Books:

- Matthews P.C. *Vector Calculus*. Springer.
- Narayan, S. *Text Book of Vector Calculus*. S.Chand. New Delhi.
- Chatterji, P.N..*Solid Geometry*. Rajhans Prakashan Mandir. Meerut.
- Prasad, G. and Gupta, H.C..*Text Book on Coordinate Geometry*. Pothishala Private limited.
- Allahabad.
- Gokhroo, D.C. and Gokhroo Anil. *Coordinate Geometry*. Navkar Prakashan, Ajmer.
- Gokhroo, D.C. and Gokhroo Anil. *Vector Calculus*. Navkar Prakashan, Ajmer.

## DEPARTMENT OF PHYSICS

### Course Structure in Semester-I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJPHY-101	Mechanics	Major	03	03	5	20	50	30/75
MJPHY-102	Practical	Major	01	01	-	-	25	10/25
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

#### MJPHY-101: Mechanics

**Max. Marks:75**  
**Credits: 03**  
**Hrs**

**Min Marks: 30**  
**Duration : 2½**

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

- Understand the Concept of Centre of mass and angular momentum.
- Study surface tension, viscosity and their applications.
- Explain elasticity, its types and cantilever its application in bending.

#### Unit – I

System of particles, Centre of mass, Centre of mass of two particles and N particles systems, motion of centre of mass, Concept of reduced mass, energy and momentum conservation, concepts of elastic and inelastic collisions. Elastic Collision of two particles moving in one dimension and in two dimensions. Angular momentum of a system, Conservation of angular momentum, angular momentum of system about an arbitrary point and rigid body motion, Rotational motion, equation of motion of a rotating body, kinetic energy of rotation and idea of principles axes

#### Unit – II

Kinematics of moving fluids, Equation of continuity, Bernoulli's theorem and its applications – atomizer, Torricelli's theorem and venturimeter, Viscous fluids, Stream line and Turbulent flow, Poiseuille's law, Capillary tube flow, Reynold's number, Stokes law, Terminal velocity, Surface tension, its applications and surface energy, molecular interpretation of surface tension. Surface Energy, Excess pressure inside a soap bubble, a liquid drop and an air bubble

#### Unit – III

Elasticity, stress & strain, Small deformations, Young's modulus, Bulk modulus and Modulus of rigidity for an isotropic solid, Energy stored in a stretched wire, Poisson ratio, relation between elastic constants. Theory of bending of beams and Cantilever supported at both ends and loaded at middle. Torsion of a cylinder, Bending moments and Shearing forces, Maxwell's Needle.

#### Reference Books:

- V.K. Jain, (2009), Classical Mechanics, 2nd Edition, Anne Book Private Ltd.
- H. Goldstein, Classical Mechanics, 2<sup>nd</sup> Edition, Addison-Wesley
- 3 E.M. Purcell, (2017), Berkeley Physics Course, Vol. I Mechanics 3<sup>rd</sup> Edition, M C Graw Hill Edu.

- R. S. Gambhir,(1992), Mechanics, CBS Publishers and Distributors
- Joseph Stiles Beggs,(1993) Kinematics, CRC Press

## MJPHY – 102 : Practical

**Max. Marks:25**  
**10**  
**Credits: 1**  
**Hrs**

**Min. Marks:**  
  
**Duration: 4**

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

- Understand scientific and practical knowledge of different oscillators (SHM).
- Evaluate and analyze characteristics of a semiconductor diode.
- Solve and draws conclusions from the qualitative and Quantative data and experimental evidence.

### List of Experiments:

- Modulus of rigidity by Maxwell's needle
- Elastic constants by Searl's method
- Viscosity of glycerine through a uniform capillary tube
- Low resistance by Carey Foster's Bridge with callibration
- Draw forward and reverse bias characteristics of a semiconductor diode.
- Study of parallel axis for moment of Inertia

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJPHY-201	Electromagnetics	Major	03	03	5	20	50	30/75
MJPHY-202	Practical	Major	01	01	-	-	25	10/25
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
ISO	Social Outreach Programme	ISO	01	01	-	-	25	10/25

## MJPHY – 201 Electromagnetics

**Max. Marks: 75**  
**30**  
**Credits: 3**  
**2½Hrs**

**Min. Marks:**  
  
**Duration:**

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

- Understand gradient, div & curl and their applications.
- Classify Electrostatic properties of conductors and various boundary conditions.
- Explain Magnetic field and analysis of AC circuits.

### Unit - I

Scalars and Vectors: dot products, vector product, triple vector product, gradient of scalar field and its geometrical interpretation, divergence and curl of a vector field. Electric Flux and magnetic flux, flux of vector field, Gauss's divergence theorem, Stokes theorem. Gauss's Law. Integral and differential form of Gauss's Law, Coulomb's law and vector form of Coulomb's Law. Electric potential at any point due to a charged shell and charged non-conducting solid sphere.

### Unit – II

Electric field in matter: atomic and molecular dipoles, permanent dipole moment. Capacity of parallel plate capacitor (with partially or completely filled dielectric), electric displacement, Lorentz local field and Clausius Mossotti equation

Electrostatic field – conductors in electric field, Boundary conditions for potential and field at dielectric surface, Poisson's and Laplace's equations in Cartesian, cylindrical and spherical polar coordinates (without derivation).

### Unit - III

Concept of magnetic field and magnetic flux, Biot-Savart's law, B due to a straight current carrying conductor, Ampere circuital law (integral and differential form), Force on a current carrying wire and torque on a current loop in a magnetic field, Maxwell's equations (integral and differential form) and displacement current.

Electromagnetic induction, Faraday law (its integral and differential form) Lenz's law, mutual & self inductance, Charging, discharging of condenser through resistance, rise and decay of current in LR circuit, decay constant, transient in LCR circuit

#### Reference Books:

- Ed. E.M. Procell, Electricity and Magnetism, (Mc Graw Hill)
- Haliday and Resnik, (2007) 'Physics' - Vol. II, Wiley
- D. J. Griffith (2015) 'Introduction to electrodynamics', Pearson Education India Learning Pvt.Ltd.
- A.M. Portis, 'Electromagnetic field', John Wiley & sons
- V.V. Savate, (2015) 'Electromagnetic field and Waves', (Wiley Eastern Ltd., New Delhi.)

### MJPHY–202: Practical

**Max. Marks: 25**

**10**

**Credits: 1**

**Min. Marks:**

**Duration: 3hrs**

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

- Understand scientific and practical knowledge of conversion of Galvanometer to Ammeter or Voltmeter.
- Evaluate, analyze and effective strategies to solve LCR circuit.
- Students demonstrate proficiency in using digital tools and technology to solve basic logic gates.

#### List of Experiments:

- Series LCR circuit to determine its resonance frequency and quality factor
- Verify truth table for basic logic gates OR, AND, NOT, NOR, NAND, XOR
- Study of compound pendulum
- Conversion of galvanometer into voltmeter
- Conversion of galvanometer into ammeter
- Verify maximum power transfer theorem

## DEPARTMENT OF CHEMISTRY

### Course Structure in Semester-I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJCHE-101	Fundamentals of Inorganic Chemistry	Major	03	03	5	20	50	30/75
MJCHE-102	Practical	Major	02	01	-	-	25	10/25
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

#### MJCHE – 101 : Fundamentals of Inorganic Chemistry

Max. Marks: 75

30

Credit: 03

Hrs

Min. Marks:

Duration: 2½

**Course outcomes:** On successful completion of the course the student will be able to-

- Identify basic concepts related to atomic structure.
- Interpret geometries of molecules based on VBT and MOT.
- Demonstrate concepts and properties of ionic solids.

#### Unit I

##### Atomic Structure

de-Broglie matter waves, Heisenberg uncertainty principle, Schrodinger wave equation and its derivation, significance of  $\psi$  and  $\psi^2$ , quantum numbers (Principal Quantum Number, Azimuthal Quantum Number, Magnetic Quantum number, Spin quantum number), atomic orbitals-shapes of s, p, d orbitals, Aufbau Principle, Pauli's Exclusion principle, Hund's rule of maximum multiplicity, (n+1) rule, Electronic configurations of elements, stability of half-filled and completely filled orbitals, anomalous electronic configurations, IUPAC nomenclature of elements with atomic number more than 100, Effective Nuclear Charge and Slater's rule.

#### Unit II

##### Chemical Bonding

Covalent Bond – Valence bond theory and its limitations, Hybridization – Introduction, Rules, various types of hybridization ( $sp$ ,  $sp^2$ ,  $sp^3$ ,  $dsp^2$ ,  $sp^3d$ ,  $dsp^3$ ,  $sp^3d^2$ ,  $d^2sp^3$ ,  $sp^3d^3$  with suitable examples of inorganic molecules and ions), Molecular Orbital theory – Postulates, Molecular orbital diagram of homonuclear ( $H_2$ ,  $He_2$ ,  $He_2^+$ ,  $Li_2$ ,  $Be_2$ ,  $B_2$ ,  $C_2$ ,  $N_2$ ,  $O_2$ ,  $O_2^-$ ,  $O_2^{2-}$ ,  $O_2^+$ ,  $O_2^{2+}$ ,  $F_2$ ,  $Ne_2$  and heteronuclear (CO and NO) diatomic molecules, Advantages, Similarities and differences between Valence bond and Molecular orbital Theory.

#### Unit III

##### Ionic Solids

Lattice defects – Stoichiometric (Schottky and Frenkel) defects, Non Stoichiometric (Metal Excess and Metal deficiency) defects, Impurity defects, Semiconductors and its types (Intrinsic and Extrinsic semiconductors), Lattice energy – definition, Madelung constant, calculation (Born equation), factors affecting lattice energy, Born-Haber cycle and its applications, solvation energy- definition, factors affecting solvation energy, solubility of ionic solids, polarizing power and polarisability of ions, Fajan's rule and its applications.

##### Reference Books:

- J.D. Lee: A New Concise Inorganic Chemistry, E.L.B.S.
- Ajai Kumar: Basic Inorganic Chemistry, Aaryush Education

- F.A.Cotton & G. Wilkinson: Basic Inorganic Chemistry, John Wiley.
- Douglas, McDaniel and Alexander: Concepts and Models in Inorganic Chemistry, John Wiley.
- D.F.Shriver and P.W.Atkins: Inorganic Chemistry, Oxford University Press.
- G.L.Miessler and Donald A. Tarr: Inorganic Chemistry, Pearson Publication.
- Gary Wulfsberg: Inorganic Chemistry, Viva Books Pvt. Ltd.
- Puri, Sharma, Kalia: Text book of Inorganic Chemistry, Vishal publications, Jalandhar

## MJCHE – 102 : Practical

**Max. Marks: 25**

**Credit: 01**

**Hrs**

**Min Marks: 10**

**Duration: 4**

**Course Outcomes:** On successful completion of the course the student will be able to-

- Estimate the real weights and volumes of Apparatus.
- Prepare solutions of various concentrations.
- Analyze the concentrations quantitatively through volumetric titration.

### 1. Inorganic Chemistry

- (i) Calibration of fractional weights, pipettes and burettes.
- (ii) Preparation of standard solutions.
- (iii) Dilution of solutions.

### 2. Quantitative Analysis

#### Volumetric Analysis

- (i) Determination of acetic acid in commercial vinegar using NaOH.
- (ii) Determination of alkali content-antacid tablet using HCl.
- (iii) Estimation of calcium content in chalk as calcium oxalate by potassium permanganate.
- (iv) Estimation of hardness of water by EDTA.
- (v) Estimation of ferrous and ferric by dichromate method.
- (vi) Estimation of copper using thiosulphate.

#### Reference Books:

- J. Bassett, R.C. Denney, G.H. Heffery and J Mendham: *Vogel's Textbook of Quantitative Inorganic Analysis* (revised), ELBS.
- W.W. Scott: *Standard Methods of Chemical Analysis*, The Technical Press.
- P.R. Singh, D.S. Gupta and K.S. Bajpai: *Experimental Organic Chemistry* Vol. I&II, Tata McGraw Hill.
- R.K. Bansal: *Laboratory Manual in Organic Chemistry*, Wiley Eastern.
- B.S. Furniss, A.J.Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell: *Vogel's Textbook of Practical Organic Chemistry*, ELBS

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJCHE-201	Fundamentals of Organic Chemistry	Major	03	03	5	20	50	30/75
MJCHE-202	Practical	Major	01	01	0	0	25	10/25
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	ISO	01	01	-	-	25	10/25

### MJCHE – 201: Fundamentals of Organic Chemistry

**Max. Marks: 75**

**Credit: 03**

**Hrs**

**Min. Marks 30**

**Duration: 2½**

**Course outcomes:** On successful completion of the course the student will be able to-

- Identify the structure and bonding in common organic molecules and mechanism of organic reactions.
- Comprehend aromaticity of arenes and mechanism of electrophilic substitution reactions.
- Assess the stereochemistry of organic compounds.

#### Unit I

##### Basic Concepts of Organic Chemistry

Electronic displacements: inductive effect and their applications, electromeric, resonance, Necessary conditions for resonance, contribution of resonating structures, hyperconjugation and its effects.

Types of fission: homolytic and heterolytic bond fission. Types of reagents- electrophiles and nucleophiles, Types of organic reactions: addition, elimination, substitution and rearrangement reactions.

Reactive intermediates- carbocations, carbanions, free radicals, carbenes, arynes and nitrenes (with example). Hydrogen bonding – Definition, strength, type of hydrogen bond (Intermolecular and Intramolecular hydrogen bonding), effects of hydrogen bonding on physical properties.

#### Unit II

##### 1. Arenes and aromaticity

Nomenclature of aromatic organic compounds, Isomerism in aromatic compounds, Structure of benzene: molecular formula and Kekule structure, Evidences in favour of Kekule structure, demerits of Kekule structure, Kekule's dynamic structure, MO picture, Stability of benzene. Aromaticity: Huckel rule, applications of Huckel's rule.

##### 2. Aromatic electrophilic substitution

Electrophilic attack on benzene nucleus, role of sigma and pi- Complexes, General pattern of the mechanism, Energy profile diagrams, Mechanism of nitration, halogenation, sulphonation, mercuriation and Friedel-Crafts reaction, activating and deactivating substituents, stability of arenium ion and ortho/para ratio.



### Unit III

#### Stereochemistry of Organic Compounds

Concept of isomerism, Stereoisomerism and its types, Optical isomerism-elements of symmetry, molecular chirality, enantiomers, stereogenic centre, optical activity, properties of enantiomers, chiral and achiral molecules with two stereogenic centres, diastereomers, threo and erythro diastereomers, meso compounds, resolution of enantiomers, inversion, retention and racemization, Newman projection and Sawhorse formulae, Fischer and flying wedge formulae, Difference between configuration and conformation, Relative and absolute configuration, sequence rules, D & L and R & S systems of nomenclature, Geometric isomerism- determination of configuration of geometric isomers, E & Z system of nomenclature, Conformational isomerism- conformational analysis of ethane and n-butane, conformations of cyclohexane, Qualitative treatment of stability of chair and boat conformations of cyclohexane, axial and equatorial bonds in cyclohexane.

#### Reference Books:

- R.T.Morrison & R.N.Boyd: *Organic Chemistry*, Prentice Hall.
- T.W.Graham Solomons: *Organic Chemistry*, John Wiley and Sons.
- Peter Sykes: *A Guide Book to Reaction Mechanism in Organic Chemistry*, Orient Longman
- I.L.Finar: *Organic Chemistry* (Vols. I & II), E.L.B.S.
- Jerry March: *Advanced Organic Chemistry*, John Wiley and Sons.
- E.L.Eliel: *Stereochemistry of Carbon Compounds*, Tata McGraw Hill.

## MJCHE–202: Practical

Max. Marks: 25

Credit: 01

Hrs

Min Marks: 10

Duration: 4

**Course Outcomes:** On successful completion of the course the student will be able to-

- Demonstrate basic laboratory techniques.
- Compute melting and boiling points of various organic compounds.
- Analyze the elements and functional groups in simple organic compounds.

### 1. Laboratory Techniques

#### a) Calibration of Thermometer

Naphthalene (80-82°C) Acetanilide (113.5-114°C), Urea (132.5-133°C), Distilled Water (100°C)

#### b) Determination of Melting Point

Naphthalene(80-82°C), Benzoic acid (121.5-122°C), Urea (132.5-133°C), Succinic acid (184.5-185°C), Cinnamic acid (132.5-133°C), Salicylic acid (154.5-158°C) Acetanilide (113.5-114°C), m-Dinitrobenzene (90°C), p-dichlorobenzene (52°C), Aspirin (135°C)

#### c) Determination of boiling points

Ethanol (78°C), Cyclohexane (81.4°C), Toluene(110.6°C), Benzene (80°C)

#### d) Distillation

Simple distillation of ethanol-water mixture using water condenser. Distillation of nitrobenzene and aniline using air condenser

#### e) Crystallization

Concept of induction of crystallization

Phthalic acid from hot water (using fluted filter paper and stemless funnel)

Acetanilide from boiling ethanol Benzoic acid from water

#### f) Decolorisation and crystallization using charcoal

Decolorisation of brown sugar (sucrose) with animal charcoal using gravity filtration.

Crystallization and decolorisation of impure naphthalene (100 g of naphthalene mixed with 0.3 g of Congo red using 1 g decolorising carbon) from ethanol.

#### g) Sublimation (Simple and Vacuum)

Camphor, Naphthalene, Phthalic acid and Succinic Acid.

### 2. Qualitative Analysis

Detection of extra elements (N,S and halogens) and functional groups(phenolic, carboxylic, carbonyl, esters, carbohydrates, amines, amides, nitro and anilide) in simple organic compounds.

### Reference books

- P.R. Singh, D.S. Gupta and K.S. Bajpai: *Experimental Organic Chemistry* Vol. I&II, Tata McGraw Hill.
- R.K. Bansal: *Laboratory Manual in Organic Chemistry*, Wiley Eastern.
- B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell: *Vogel's Textbook of Practical Organic Chemistry*, ELBS.
- J.B.Yadav: *Advanced Practical Physical Chemistry*, Vol. I-Physical, Goel Publishing House.
- J.N. Gurtu and R. Kapoor: *Advanced Experimental Chemistry*, Vol. I-Physical, S Chand & Co.
- Svehla: *Vogel's Qualitative Inorganic analysis*, revised, Orient Longma

## DEPARTMENT OF BOTANY

### Course Structure in Semester-I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJBOT-101	Phycology and Mycology	Major	03	03	5	20	50	30/75
MJBOT-102	Practical	Major	02	01	-	-	25	10/25
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

#### MJBOT 101: Phycology and Mycology

Max. Marks: 75

30

Credit: 03

Hrs.

Min. Marks:

Duration: 2½

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

1. Understand and compare thallus organization, pigments, reserve food, life cycle, economic importance etc. in different classes of algae.
2. Illustrate structural and developmental details of different algal genera.
3. Develop conceptual skill about identifying algae, fungi & lichens.

#### Unit I

**Algae-** General characters, Thallus organization, Pigments, Reserve food material, Classification (Fritsch), Economic importance, Algal bloom, Types of life cycle

**A General account of lichens**

#### Unit II

**Important features and life history of:**

Chlorophyceae- *Volvox*, *Oedogonium*

Xanthophyceae- *Vaucheria*

Phaeophyceae- *Ectocarpus*

Rhodophyceae- *Polysiphonia*

#### Unit III

**Fungi-** General characters, Classification (Alexopoulos & Mims, 1979), Economic importance

**Important features and life history of:**

Mastigomycotina- *Phytophthora*

Zygomycotina- *Mucor*

Ascomycotina- *Eurotium*, *Peziza*

Basidiomycotina- *Puccinia*, *Agaricus*

**Reference Books:**

- Smith, G.M. Cryptogamic Botany. Vol. I Algae and fungi. Tata McGraw Hill Publishing Co. New Delhi.
- Sharma, O.P. Text Book of Thallophytes. Mc Graw Hill Pub.Co.
- Sharma, P.D. The Fungi. Rastogi and Co., Meerut
- Dube, H.C. An introduction to Fungi. Vikas Pub. House Pvt. Ltd. Delhi.
- Gilbert, Smith, M. Cryptogamic Botany, Vol. I & II (2<sup>nd</sup> edition) Tata McGraw Hill Publishing Co. New Delhi.

## MJBOT 102: PRACTICAL

**Max. Marks: 25**  
**10**  
**Credit: 01**  
**Hrs.**

**Min. Marks:**

**Duration: 2**

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

1. Perform staining, mounting and section cutting of various genera of algae and fungi.
2. Illustrate structural details of different algal and fungal genera.
3. Develop conceptual skill about identifying algae, fungi & lichens.

### Distribution of Marks:

**Experiments: = 08 marks, Spots = 06 marks, Viva Voce: = 06 marks, Record: =05marks**

### Suggested Laboratory Exercises:

1. Study of genera included under

Algae - Chlorophyceae- *Volvox*, *Oedogonium*

Xanthophyceae- *Vaucheria*

Phaeophyceae- *Ectocarpus*

Rhodophyceae- *Polysiphonia*

Fungi - Mastigomycotina- *Phytophthora*

Zygomycotina- *Mucor*

Ascomycotina- *Eurotium*, *Peziza*

Basidiomycotina- *Puccinia*, *Agaricus*

2. Study of crustose, foliose and other types of lichen thalli.

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJBOT-201	Microbiology and Plant Pathology	Major	03	03	5	20	50	30/75
MJBOT-202	Practical	Major	02	01	-	-	25	10/25
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
ISO	Social Outreach Programme	ISO	01	01	-	-	25	10/25

## MJBOT 201: Microbiology and Plant Pathology

**Max. Marks: 75**  
**30**  
**Credit: 03**  
**Hrs.**

**Min. Marks:**

**Duration: 2½**

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

1. Relate the structure and nature of micro-organisms.
2. Understand the etiology and epidemiology of plant diseases.
3. Predict the control measures to minimize the adverse effect of pathogens on commercial crops.

### Unit I

**Classification of living world** (Whittaker's five kingdom classification)

**Bacteria-** structure, reproduction (Binary fission, transformation, conjugation & transduction). Gram staining, economic and biological importance, General account of Cyanobacteria: *Nostoc*, *Oscillatoria*

**General features of:** Rickettsias, Archaeobacteria and Actinomycetes

### Unit II

**Virus-** General account (characters, types), Structure (TMV & Bacteriophage), multiplication (Lytic & Lysogenic cycle) and methods of transmission of virus

**Mycoplasma-** Structure and economic importance; Phytoplasma, Little leaf of brinjal

**A general account of diseases caused by plant pathogens:**

**Bacterial diseases-** Citrus canker, Tundu disease of wheat

**Viral disease-** Tobacco mosaic

### Unit III

Host parasite interaction, Important symptoms of plant diseases caused by fungi

Disease cycle and control of:

**Fungal diseases-** White rust of crucifers, Green ear disease of bajra, Loose Smut of wheat, Red rot of sugarcane, Tikka disease of groundnut

### Reference Books:

- Clifton, A. Introduction of the Bacteria. Mc Graw Hill & Co. New York
- Bilgrami, K.S. and Dube, H.C. A text book of Modern Plant Pathology, Vikas Pub. New Delhi
- Biswas, S.B. and Biswas, A. An introduction to virus, Vikas Pub. New Delhi.
- Mandahar, C.L. Introduction to Plant Viruses, Chand & Co. Ltd., New Delhi.
- Rangaswamy, G. and Mahadevan, A. Diseases of Crop Plants in India (4<sup>th</sup> edition), Printice Hall of India Pvt. Ltd., New Delhi.

## MJBOT 202: PRACTICAL

**Max. Marks: 25**

**10**

**Credit: 01**

**Hrs.**

**Min. Marks:**

**Duration: 2**

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

1. Identify disease symptoms in plants infected by bacteria, virus and fungi.
2. Carry out section cutting, staining and mounting of diseased plant material.
3. Perform Gram's staining and identify the type of bacteria.

**Distribution of Marks:**

**Experiments: = 08 marks, Spots = 06 marks, Viva Voce: = 06 marks, Record: =05marks**

**Suggested Laboratory Exercises:**

- Observation of disease symptoms in hosts infected by fungi, viruses, bacteria and Mycoplasma (**Bacterial diseases-** Citrus canker, Tundu disease of wheat **Viral disease-** Tobacco mosaic, Little leaf of brinjal)
- Observation of specimens/ charts of:
  - a. White rust of crucifers
  - b. Green ear disease of bajra
  - c. Loose Smut of wheat
  - d. Red rot of sugarcane
  - e. Tikka disease of groundnut
- Section cutting of diseased material.
- Gram's staining of bacteria.

## DEPARTMENT OF ZOOLOGY

### Course Structure in Semester-I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJZOO-101	Cell Biology	Major	03	03	5	20	50	30/75
MJZOO-102	Practical	Major	02	01	-	-	25	10/25
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MJZOO-101- Cell Biology

**Max. Marks: 75**

**Marks: 30**

**Credit: 03**

**½ Hrs**

**Min.**

**Time: 2**

**Course Outcomes:** After completion of the course, the student will be able to:

- Understand the structural and functional characteristics of the eukaryotic cell membrane, including specialized features and transport mechanisms.
- Analyze the structure, function, and biogenesis of organelles like mitochondria, endoplasmic reticulum, and chromosomes in cellular organization.
- Explain the structural variations of DNA and RNA, as well as the mechanisms and regulation of cell division and the cell cycle

#### Unit- I

- Introduction to Cell:** characteristics of Eukaryotic Cell (animal cell), comparison of prokaryotic and eukaryotic cells.
- Cell-membrane:** Characteristics of cell membrane molecules, unit membrane concept.
- Fluid-mosaic model** of Singer and Nicolson. Structure and functions of membrane proteins: Integral, peripheral and lipid-anchored membrane proteins.
- Specializations of Plasma membrane-** Microvilli, desmosomes, gap junction, tight junction, inter-digitations, basal infoldings, plasmodesmata
- Cell-membrane transport:** Passive transport, facilitated passive transport, transport of glucose and sodium, active transport, endocytosis, exocytosis, osmosis.

#### Unit – II

- Structure and biogenesis of **mitochondria**; Citric Acid Cycle, Electron Transport Chain and generation of ATP molecules.
- Structure and functions of **endoplasmic reticulum, ribosomes** (prokaryotic and eukaryotic), and **Golgi complex**
- Chromosomes:** Morphology, chromonema, chromomeres, telomeres, primary and secondary constrictions, chromatids, prokaryotic chromosomes. **Giant Chromosomes:** Polytene and Lampbrush chromosomes. **Chromosomal organizations:** Euchromatin, Heterochromatin, nucleosome concept.
- Nucleus:** Structure and function of the nuclear envelope, nuclear matrix, and nucleolus.
- Structure and functions of **Lysosomes, Centrioles, Basal Bodies, cilia and flagella.**

### Unit – III

1. **DNA** Structure, polymorphism (**A, B, and Z type**)
2. **RNA** structure and types (**mRNA, rRNA, and tRNA**)
3. **Cell division**- mitosis and meiosis. Formation and fate of chiasmata and significance of crossing over
4. **Cell Cycle** and its regulation (role of Cyclins and Cdks)

#### Reference Books:

1. **Lodish, Berk, Zipursky, Matsudaria, Baltimore, Darnel.** ‘Molecular cell Biology’ W.H. Freeman and Co. New York.
2. **Wayne. M. Becker, Lewis J. Cliensmith, Jeff Hardin** ‘The World of Cell’ Pearson Publication
3. **J. Darnell, H. Lodish and D. Baltimore.** Molecular Cell Biology. Scientific American Books, Inc., USA.
4. **E.D.P. De Robertis and E.M.F. De Robertis Jr.** Cell and Molecular Biology. Lea & Febiger



## MJZOO-102-Practical

**Max. Marks: 25**

**Min.**

**Marks: 10**

**Credit: 01**

**Time: 4**

**Hrs**

**Course Outcomes:** After completion of the course, the student will be able to:

1. Develop proficiency in the principles and usage of optical microscopes for cellular and organismal observations and preparing slides, and applying techniques for staining, dehydration, and mounting biological specimens.
2. Demonstrate practical skills in cell biology techniques, including slide preparation, staining, and the study of cell division. Gain hands-on experience in studying cellular processes like mitosis, meiosis, and chromosome structure through squash preparations and live organism observation.
3. Analyze and document microscopic structures of freshwater fauna and cellular components through project-based learning, enhancing skills in observation, identification, and scientific reporting.

### **I. Microscopic Techniques:**

1. Organization and working of Optical Microscope: Dissecting and compound microscopes.

### **II. Exercises in Cell Biology**

1. Squash preparation of onion root tip for the study of mitosis.
2. Study of Cell permeability.

### **III. Study of the following through permanent slide preparation:**

1. General methods of microscopic slide preparations: Narcotisation; fixing and preservation; washing; staining; destaining; dehydration; clearing and mounting.
2. Obelia colony, Cyclops/Daphnia

### **IV. Study of Permanent Slides-** Mitosis, Meiosis, Barr Body, Giant Chromosomes (Polytene/Lambrush), Cellorganelles (Chart/ Photographs)

### **V. Project Report** on Microscopic Examination of fresh water fauna.

#### **Note:**

- (i) Use of animals for dissection is subject to the conditions that these are not banned under the Wild Life (Protection) Act.
- (ii) We will not procure Museum Specimens from now onwards and will use charts/slides/models/photographs and digital alternatives in case of need. We will arrange for the visit of students to already-established museums.

### **Scheme of External Practical Examination**

**Time: 4 hrs.**

**Max. Marks: 25**

<b>1. Exercise in organization and working of Microscope</b>	<b>04</b>
<b>2. Exercise in Cell Biology</b>	<b>04</b>
<b>3. Permanent Preparation</b>	<b>04</b>
<b>4. Spotting</b>	<b>04</b>
<b>5. Project Report</b>	<b>05</b>
<b>6. Viva &amp; Record</b>	<b>04</b>
<b>Total</b>	<b>25</b>

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJZOO-201	Invertebrate: Classification, structure and Special	Major	03	03	5	20	50	30/75
MJZOO-202	Practical	Major	01	01	-	-	25	10/25
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	SOR	01	01	-	-	25	10/25

### MJZOO-201: Invertebrate: Classification, structure and Special Features

**Max. Marks: 75**

**Credit:03**

**Min. Marks: 30**

**Time: 2 ½ Hrs**

**Course Outcomes** After the completion of the course the student will be able to:

1. Understand the basics of invertebrate classification and demonstrate its characters up to classes.
2. A comprehensive understanding of the structural, functional, and adaptive features of key invertebrate groups.
3. They will also be able to analyse the ecological, evolutionary, and economic significance of these organisms

#### Unit – I

General characters and classification of all phyla up to classes with examples; emphasizing on their biodiversity & economic importance.

1. **Basis of classification of non-chordata: Germ Layers** (Diploblastic and triploblastic) Symmetry (Asymmetrical, Radial, biradial, spherical and bilateral), coelom (acoelom, pseudocoelom, schizocoelous coelom and enterocoelous coelom), segmentation (simple and metameric) and embryogeny (fate of blastopore-protostome and deuterostome).
2. **Concept of protozoa**, Parazoa, Metazoa, Eumetazoa and levels of organization. (cellular, tissue, organ and organ system.)
3. **General principles of taxonomy** - concept of the five kingdom scheme, Binomial and Trinomial Nomenclature.
4. **Invertebrate classification**: salient features of various phyla and their classification up to classes: Protozoa, Porifera, Coelenterata, Aschelminthes, Platyhelminthes, Annelida, Arthropoda, Mollusca, Echinodermata.

#### Unit – II

1. **Protozoa**: Reproduction (asexual and sexual) and Mode of locomotion- Cilia, Flagella and pseudopodia.
2. **Porifera**: Spicules- calcareous, silicious. Canal system: Ascon, Sycon, Leucon and Rhagon Type.
3. **Coelenterata**: Polymorphism, Corals and Coral reefs
4. **Platyhelminthes**: Parasitic adaptations- Morphological and Physiological
5. **Aschelminthes**: Life cycle of Ascaris and its Economic Importance.

### Unit - III

1. **Annelida:** Reproduction in Earthworm, Locomotion-Setae and Parapodia
2. **Arthropoda:** Metamorphosis-Ametabolous, Hemimetabolous and Holometabolous Social organization in termites and Bees-life cycle, caste system and its economic importance. Unique features and systematic position of Peripatus.
3. **Mollusca:** Foot and shells, Torsion in Gastropoda (Pila)
4. **Echinodermata:** Water vascular system and its function. Unique features of Bipinnaria and Auricularia Larva

### MJZOO-202: Practical

Max. Marks: 25

Min

Marks: 10

Credit: 01

Time: 4

Hrs

**Course Outcomes** After the completion of the course the student will be able to:

1. Master the identification and analysis of permanent preparations like gemmules, spicules, and various invertebrate specimens, enhancing skills in microscopic examination.
2. Develop expertise in recognizing and understanding the anatomy and taxonomy of diverse invertebrate groups through practical observation. Project-based learning, enhancing skills in observation, identification, and scientific reporting the insects and their social organization
3. Gain proficiency in studying the microscopic details of a few invertebrates and learn external anatomy and dissection techniques using models, charts, and digital resources.

**I. Permanent preparations:** Gemmules and spicules in sponges, Obelia colony

**II. Study of invertebrate types.**

1. **Porifera:** Leucosolenia, Euplectella, spongilla
2. **Coelenterate:** Physalia, Gorgonia, Pennatula, Sea anemone.
3. **Ctenophora:** Any Ctenophore
4. **Platyhelminths:** Taenia, Fasciola, Planaria
5. **Annelida:** Heteronereis, Aphrodite, Chaetopterus, Polygordius, Peripatus.
6. **Arthropoda:** Limulus, Spider, Centipede, Millipede, Eupagurus, Crab, Mantis, Locust.
7. **Mollusca:** Chiton, Pinactida, Dentalium, Nautilus
8. **Echinodermata:** Pentaceros, Echinus, Cucumaria, Antedon.

**III. Study of Microscopic Slides:**

1. **Protozoa:** Trypanosoma, Elphidium (Polystomella), Plasmodium, Paramecium, Paramecium showing binary fission and conjugation, Vorticella.
2. **Porifera:** T.S. of Sycon, spicules, spongin fibers
3. **Coelentrata:** Obelia colony, Auerlia life cycle
4. **Platyhelminthes:** Miracidium, Sporocyst, Redia, and Cercaria larvae of Fasciola, Scolex, T.S. mature proglottid of Taenia, Cysticercus.
5. **Aschelminthes:** Wuchereria, Dracunculus.
6. **Arthropoda:** Crustacean larvae.
7. **Mollusca:** Glochidium

### Scheme of External Practical Examination

Time: 4 hrs.

Max. Marks: 25

1. Permanent Preparation	05
2. Spotting	10
3. Project Report	06
4. Viva & Record	04
<b>Total</b>	<b>25</b>

**SOPHIA GIRLS' COLLEGE**  
**(AUTONOMOUS)**  
**AJMER**



**Scheme of Examination**  
**And**  
**SYLLABUS**  
**BATCH 2023**

**FOR**  
**BACHELOR OF COMMERCE**  
**Four-Year Under Graduate Honours**  
**Program**

**(Accountancy & Business Statistics as Major  
Subject)**

**Under**  
**Choice Based Credit System (NEP)**

**Semester - I to II**

## BACHELOR OF COMMERCE

Eligibility for admission in First Year of BCOM is 10+2 examination of any Board with at least 48% marks. With regard to admission on reserved category seats government rules will be applicable.

### SCHEME OF EXAMINATION

The number of the paper and the maximum marks for each paper together, with the minimum marks required to pass are shown against each subject separately. It will be necessary for a candidate to pass in the theory as well as the practical part of a subject/paper, wherever prescribed, separately.

Classification of successful candidates shall be as follows:

First Division 60%	of the aggregate marks prescribed in Semesters I to VI taken together
Second Division 50%	

All the rest shall be declared to have passed the examination.

- For passing a candidate shall have to secure at least 40% marks in each course (Theory and Practical separately).
- No division shall be awarded in Semesters I to V.
- Whenever a candidate appears for a due paper examination, she will do so according to the syllabus in force.
- A candidate not appearing in any examination/absent in any paper of term end examination shall be considered as having DUE in those papers.

### End Semester Examination Pattern

**Maximum Marks: 70**

**Duration:**

**2½ Hrs**

#### **Section A**

**10 × 1 = 10 Marks**

Contains 10 Questions of 1 mark each and all are compulsory. Three questions from each unit and one extra question from any one unit

#### **Section B**

**5+5+5 = 15 Marks**

Contains 3 questions with internal choice (Two questions from each unit). A student has to attempt 3 questions, choosing at least one question from each unit.

#### **Section C**

**15 × 3 = 45 Marks**

Contains 3 questions with internal choice (Two questions from each unit). Each Question carries 15 marks. A Student has to attempt 3 questions, choosing at least one question from each unit.

## FYUP CREDIT SCHEME 2023

### STRUCTURE OF 3 YEAR UNDERGRADUATE PROGRAM BASED ON NEP (NON- PRACTICAL SUBJECTS)

SEM	Honours With Research	Multi-Disciplinary Course	Ability Enhancement Course (AEC)	Skill Enhancement Course	Value Added Course	Summer Internship/ Social Outreach	Research Project OR Dissertation	Total	
	Required Credit for Major Course (4)	Total Required Credit (3) (6)	Total Required Credit (2) (6)	Total Required Credit (3) (9)	Total Required Credit (2) (8)	Total Required Credit (3)	Total Required Credit 20	Credit	Marks
Sem-I	MAJOR A (4) MAJOR B (4) MAJOR C (4)	MDC-I (3)	AEC-104 General English	SEC-I	-	-	-	20	500
Sem-II	MAJOR A (4) MAJOR B (4) MAJOR C (4)	MDC-II (3)	AEC-105 General Hindi	-	VAC-I Physical Fitness	SOR – 25 (1)	-	20	500
<b>Total</b>	<b>24</b>	<b>6</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>		<b>40</b>	<b>1000</b>

**The allocation of the 2 Majors and minor subject is strictly based on merit**

**(Performance in Sem - I & II)**

**The student requires 40 credits during the first year of the undergraduate program for qualifying for an Undergraduate Certificate**

**40**

**1000**

Sem-III	MAJOR-A1(4) MAJOR-A2(4) MAJOR-B1(4) MAJOR-B2(4) <b>MINOR-C(4)</b>	-	-	-	VAC-III GEN-106- Env. Cons. (2)	-	-	22	550
Sem-IV	MAJOR-A1(4) MAJOR-A2(4) MAJOR-B1(4) MAJOR-B2(4) <b>MINOR-C (4)</b>	-	50 COMM. ENG (2)	-	-	-	-	22	550
<b>Total</b>	<b>40</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>-</b>		<b>44</b>	<b>1100</b>
	<b>64</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>1</b>		<b>84</b>	<b>2100</b>

**The student requires 84 credits during the second year of the undergraduate program for qualifying for a Diploma**

Sem-V	MAJOR-A1(4) MAJOR-A2(4) <b>/DSE-A2</b> MAJOR-B1(4) MAJOR-B2(4) <b>/DSE-B2</b>	-	-	<b>SEC-V (3)</b>	VAC-V Moocs/ swayam/ EEA(1)	SOR - 50 (2)	-	22	550
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Sem-VI	MAJOR-A1(4) MAJOR-A2(4) <b>/DSE-A2</b> MAJOR-B1(4) MAJOR-B2(4) <b>/DSE-B2</b>	-	-	SEC-VI (3)	VAC-VI Democratic awareness with legal literacy/ NSS/NCC(3)	-	-	22	550
<b>Total</b>	<b>32</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>4</b>	<b>02</b>	<b>-</b>	<b>44</b>	<b>1100</b>
	<b>96</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>		<b>128</b>	<b>3200</b>

**On successful completion of three years, the relevant Undergraduate Degree shall be awarded. A Bachelor's degree requires 128 credits**

#### 4 YEAR UNDER GRADUATE HONOURS PROGRAM

Sem-VII	MAJOR-A1(6) MAJOR-A2(6)	-	-	-	-	-	MAJOR-A3 (6) <b>/DSE-A3</b> MAJOR-A4 (6)	24	400
Sem-VIII	MAJOR-A1(6) MAJOR-A2(6)	-	-	-	-	-	MAJOR-A3 (6) MAJOR-A4 (6)	24	400
<b>Total</b>	<b>24</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24</b>	<b>48</b>	<b>800</b>
	<b>120</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>	<b>24</b>	<b>176</b>	<b>4000</b>

**On the successful completion of the fourth year, a student shall be awarded an HONOURS Degree. A Bachelor's degree with Honours requires a total of 176 credits (to have an Honours Degree Major Subject should have 50% of total credits)**

#### 4 YEAR UNDER GRADUATE HONOURS WITH RESEARCH

Sem-VII	MAJOR-A1(6) MAJOR-A2(6)	-	-	-	-	-	MAJOR-A3 (6) <b>/DSE-A3</b> MAJOR-A4 <b>Research Methodology (6)</b>	24	400
Sem-VIII	MAJOR-A1(6) MAJOR-A2(6)	-	-	-	-	-	Research Project-II(12) <b>OR</b> Dissertation-II (12)	24	400
<b>Total</b>	<b>24</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24</b>	<b>48</b>	<b>800</b>
	<b>120</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>	<b>24</b>	<b>176</b>	<b>4000</b>

**On the successful completion of the fourth year, a student shall be awarded a Degree Honours with Research.**

**A Bachelor's degree of Honours with Research requires a total of 176 credits**

## **OUTLINE FOR UNDERGRADUATE COURSES UNDER NEP**

The UGC has formulated a new student-centric “Curriculum and Credit Framework for Undergraduate Programmes (CCFUP)” incorporating a flexible choice-based credit system, multidisciplinary approach, and multiple entry and exit options. This will facilitate students to pursue their career path by choosing the subject/field of their interest.

The NEP 2020 undergraduate curriculum is a significant shift towards a more student-centric and flexible learning experience. It empowers students to design their own educational journeys and graduate with the knowledge and skills to thrive in the 21<sup>st</sup> century workforce.

Undergraduate degree programmes of either 3 or 4-year duration, with multiple entry and exit points and re-entry options, with appropriate certifications such as:

- A UG Certificate after completing 1 year (two semesters) of study in the chosen fields of study.
- A UG Diploma after 2 years (four semesters) of study.
- A Bachelor’s degree after a 3-year (six semesters) programme of study.
- A 4-year bachelor’s degree (Honours) after eight semesters programme of study.
- If the student completes a rigorous research project in their major area(a) of study in the 4<sup>th</sup> year of a bachelor’s degree (Honours with Research).

### **Course Under Choice Based Credit System (CBCS)**

#### **17. Major Discipline:**

- a. Discipline Specific Core Courses (DSCC):** A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core Course. Each core course carries 4 credits for non-practical course and for practical core course carries 4 credits (3 theory + 1 practical).
- b. Discipline Specific Elective (DSE):** Choice of specific topics as per a student’s need. Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective. Each core course carries 4 credits.

**18. Minor Course:** is a program that allows students to explore topics that cross traditional academic boundaries. These are designed to foster a more holistic and flexible education, encourage students to develop a broader skill set and a diverse knowledge base. Each minor course carries 4 credits.

**19. Multi-Disciplinary Course (MDC):** MDC are designed to bridge gaps between traditional academic boundaries, allowing students to explore and integrate knowledge from multiple disciplines. MDC courses offer a broad perspective and encourage creative problem-solving by exposing students to a range of subjects, 3 credits is assigned to MDC, students can select MDC in Semester 1 and 2. Student take elective courses outside their major, fostering cross-disciplinary knowledge.

**20. Ability Enhancement Core Courses (AECC) :** AECC are a category of courses designed to help students develop essential skills and knowledge that enhance their overall learning experience and personal development. It carries 2 credits each in Semester 1, 2 and 4.

**21. Skill Enhancement Course (SEC):** SEC are designed to equip students with practical skills and competencies that are relevant to the workforce and society. Skill-based education and vocational training to ensure students are employable and can contribute to economic and social needs. SEC has 3 credits each in semester 1, 5 and 6. These courses may be chosen from the SEC table as given in Semester 1, 5 and 6.

**22. Value Added Course (VAC):** VAC are designed for holistic development, encourage



interdisciplinary learning, and prepare students for the demands of the modern workforce. These courses offer flexibility and can be tailored to meet emerging trends and industry needs. These courses are available in Semester 2, 3, 5 and 6. Each VAC carries 2 credits.

**23. Social Outreach / Summer Internship (SOR):** Community service involve students engaging in activities that benefit their communities, fostering a sense of social responsibility and civic engagement. SOR carries 3 credits each in Semester 2 and 5.

**24. Project, Dissertation & Internships:** These activities play a significant role in the NEP, as they offer students practical experience, real-world exposure and the opportunity to apply their knowledge to real-world situations. These elements are designed to bridge the gap between academic learning and industry requirements, ensuring that graduates are better prepared for employment or further studies.

## Program Outcome

Program outcomes for a Bachelor of Commerce (B.Com.) program, designed to align with the guidelines of the National Assessment and Accreditation Council (NAAC) and the National Education Policy (NEP) in India:

- 1. Enhance the foundational knowledge of management, finance, and economics:** It enables the learners to get theoretical and practical exposure in the field of commerce including accounts, management, economics, marketing, and human resources.
- 2. Quantitative Skills:** Students will be able to utilize quantitative methods and statistical tools to make informed business decisions based on data analysis.
- 3. Legal Awareness and Ethical Decision Making:** Students will gain a comprehensive understanding of business, companies, industries, and insurance. Students will be able to recognize and address ethical issues in business, ensuring responsible and sustainable practices in their professional conduct.
- 4. Environmental Sustainability:** Students will gain in-depth knowledge of key components of the business environment, including economic, political, legal, technological, social, and cultural factors.
- 5. Financial and Digital Literacy:** Students will be provided with the essential knowledge and skills to navigate e-commerce, management, and banking domains.
- 6. Critical and Creative Thinking Skills:** Students will demonstrate the ability to think critically and creatively by analyzing complex business problems, synthesizing diverse information, and generating innovative solutions.

## Course Structure in Semester-I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJCOM-101	Financial Accounting	Major	04	04	10	20	70	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MJCOM-101: Financial Accounting

**Max. Marks: 100**  
**Credits: 4**

**Min. Marks: 40**  
**Duration: 2 ½ Hrs.**

**Course Outcomes:** After completion of the course, student will be able to:

1. Apply accounting standards and insolvency procedures to analyze and interpret financial information and make informed decisions.
2. Allocate costs and revenues accurately to different departments and branches, and analyze the performance of each segment.
3. Account for hire purchase transactions and calculate insurance claims for loss of stock and profit, considering various factors and clauses.

**Note:** Please make a 60:40 distribution in numerical : theory questions

#### Unit-I

**Financial accounting standards:** concept, benefits, procedure for issuing accounting standards in India, Need for a global standard, IFRS-Concept, Need and Procedure.

**Dissolution of the partnership firm:** Accounting of Dissolution of the partnership firm including insolvency of partners, sales to a limited company and piecemeal distribution.

**Insolvency Accounts:** Insolvency of Individuals, Firms and Companies; Preparation of Statement of Affairs and Deficiency Accounts in the light of Indian Bankruptcy Code.

#### Unit-II

**Departmental Accounts:** Apportionment of Indirect Expenses; Trading and Profit & Loss Account; Inter departmental Transfers.

**Branch accounts:** objective, types of branch, stock and debtors' method, wholesale branch method and independent branch and inter branch transactions (excluding foreign branches)

#### Unit-III

**Hire Purchase System:** Features, Difference between Hire purchase and Installment purchase systems, Accounting for Hire Purchase and Installment System: Journal Entries and Ledger Accounts in the Books of Vendor and Purchaser. Default in payment.

**Insurance claim for loss of stock and for loss of profit:** Loss of Stock-Physical & ownership concept; concept of under-insurance and average clause; computation of claim – with price change; consideration of unusual selling line; price reduction etc. Loss of profit- Concept – insured & uninsured standing charges, GP rate, short sales and increased cost of working, average clause and computation of claim (simple type).

#### Reference Books:

- Gupta, R.L. and Radhaswamy M. Advanced Accountancy, Sultan Chand & Sons., New Delhi.
- Tulsian P.C., Tulsian Bharat, Tulsian Tushar, Financial Accounting, S. Chand Publishing.
- Shukla, M.C., Grewal, T.S. and Gupta, S.C.: Advanced Accounts, S. Chand & Co., New Delhi
- Paul, S.K., Advanced Accounting, Sultan Chand & Sons, New Delhi.
- Jain S.P. & Narang K.L. Advanced Accounting, Kalyani Publishers.
- Maheshwari & Maheswari. Advanced Accountancy-I, Vikash Publishing Co.

- Sehgal & Sehgal, Advanced Accountancy Vol. I, Taxman Publication.  
Note: Latest edition of the book to be referred.

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJCOM-201	Cost Accounting	Major	04	04	10	20	70	40/100
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	SOR	01	01	-	-	25	10/25

### MJCOM-201: Cost Accounting

**Max. Marks: 100**  
**Credits: 4**

**Min. Marks: 40**  
**Duration: 2 ½ Hrs.**

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

1. Understand the fundamentals of cost accounting, including cost concepts, classification, and the techniques used to control and analyze costs.
2. Allocate and apportion overheads to cost units and determine product costs using various costing methods, including job, batch, process, and operating costing.
3. Apply specific costing techniques to different production scenarios, including job, batch, contract, and process costing, to determine product costs and assess profitability.

**Note: Please make a 60:40 distribution in numerical : theory questions**

#### Unit I

**Introduction:** Definition of Costing, Objectives of Cost Accounting; Importance of Cost Accounting to Business Concern, Advantages of a Cost Accounting system, Installing a Cost Accounting System, Essentials of a good Cost Accounting System. Cost, Cost object, Cost units and Cost Centers, Types of costs, classification of costs, cost sheet, total costs and unit costs. Costing Methods and Techniques.

**Accounting for Material:** Material control: concept and techniques; pricing of material issues, treatment of material losses.

**Accounting for Labour:** Labour cost and control procedure; labour turnover, idle time and overtime; methods of wage payment - time and piece rates; incentive schemes.

#### Unit II

**Accounting for overheads:** Introduction Definition, Classification of Overhead- Element-wise, Functional and Behavioral; Need for classifying overhead into fixed and variable; various types of overheads. Allocation and apportionment of Overhead; Absorption of Overhead: various methods and their application; Treatment of under absorption/over absorption of overheads.

**Unit Costing:** Definition, Objectives, Types of Cost unit, Production Account, Differences between cost sheet and production account, treatment of work in progress, scrap and wastage, spoilage and defectives, opening and closing stock of finished goods, determination of tender price, absorption of overheads.

**Operating costing:** Introduction, Transport Costing, Hotel Costing, Power house Costing, Hospital Costing and Cinema Costing.

### Unit III

**Job Costing:** Definition, features, procedure, Job Cost sheet.

**Batch Costing:** Definition, Economic Batch Quantity and its determination, Batch Cost Sheet.

**Contract Costing:** Progress payments, Retention money, Escalation clause, Contract accounts, Treatment of notional profit, Presentation of work in progress in Balance Sheet.

**Process Costing:** Meaning, Features, Process v/s Job Costing, preparation of process accounts, Treatment of Normal loss, abnormal loss and abnormal gain, Treatment of Opening and closing Stock, Inter process profit, By Product and Joint Product Cost Accounting.

**Reference Books:**

- Oswal, Maheshwari, Sharma, Mantri Sharma, Cost Accounting, Ramesh Books Depot Jaipur
- Dr. D.C. Jain, Dr. M.C. Khandelwal and R. Govind Pareek, Cost Accounting, Ajmera Books Co., Jaipur.
- Dr. P.C. Tulsian, Cost Accounting, S. Chand & Co. Ltd, New Delhi.
- Dr. B.K. Mehta, Cost Accounting, S.B.P.D Publishing House, Agra.
- Arora M.N., Cost accounting- Principles and Practice, Vikas Publishing House, New Delhi
- Jain S.P. and Narang K.L., Cost Accounting; Kalyani Publications, New Delhi.
- Horgren, Charles, Foster and Datar, Cost Accounting – A Managerial Emphasis; prentice-Hall of India, New Delhi.
- Maheshwari S.N., Advanced Problems and Solutions in Cost Accounting, Sultan and Chand: New Delhi.

*Note: Latest edition of the book to be referred.*

## Course Structure in Semester-I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJCOM-102	Principles of Management	Major	04	04	10	20	70	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MJCOM-102-Principles of Management

**Max. Marks: 100**

**Credits: 4**

**Min. Marks: 40**

**Duration: 2 ½ Hrs.**

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

1. Interpret the concept of management, planning & decision-making.
2. Assess motivation and leadership techniques.
3. Simulate various management skills

#### UNIT – I

**Introduction to Management:** Meaning, Definition, Nature, Characteristic, Scope, Levels of Management, Administration Vs. Management, Functions of Management, Schools of management thought, Principles of F.W. Taylor and Henry Fayol.

**Planning:** Meaning, Importance, Types and Process

**Decision Making:** Process, techniques.

**Organizing:** Meaning and Definition, Formal Vs. Informal Organisation, Types of Organisation, Organisation Structure, Departmentation, Decentralisation & Centralisation of authority with respective advantages and disadvantages and Delegation of authority.

#### UNIT II

**Directing:** Meaning, Importance and Techniques.

**Leadership:** Meaning, Qualities of a good leader, Types of Leadership styles **Motivation:** concept and theories – Maslow's hierarchy of needs, Herzberg's dual factor theory, McGregor's theory X and theory Y.

**Controlling:** Meaning and Definition, Importance, Process, techniques

**Management by objectives, Management by exception** with respective meaning and importance.

#### UNIT III

**Co-ordination** – Meaning, need and Principles

**Strategic Management:** Concept, Importance, Functions and Scope, Techniques

**Organisational Behaviour:** Introduction, Elements, Scope, Advantages & Limitations

**Management of change:** Meaning, Importance, Process of Change

**Resistance to change:** Meaning, Reasons for resistance to change on part of employees, Measures to overcome.

**Reference Books :**

- Naulakha R.L, Principles Of Management, RBD Publications
- Sudha G.S, Management, Ramesh Book Depot
- Rajpurohit, Sharma, Sharma, Gupta, Management, Ajmera Book Company, Jaipur.
- Note: Latest Edition of the book to be referred

## Course Structure in Semester-II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJCOM-202	Business Law	Major	04	04	10	20	70	40/100
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	SOR	01	01	-	-	25	10/25

### MJCOM-202-Business Law

**Max. Marks: 100**  
**Credits: 4**

**Min. Marks: 40**  
**Duration: 2½ Hrs**

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

1. Interpret the legislative framework relating to Contracts as per Indian Contract Act, 1872.
2. Interpret the legislative framework relating to sale of goods as per Sale of Goods Act, 1930.
3. Interpret the legislative framework relating to consumer protection as per Consumer Protection Act, 2019 and partnership as per Partnership Act, 1932 & LLP Act, 2008.

#### UNIT-I

**The Indian Contract Act 1872:** Introduction and Essentials of a valid Contract, Classification of Contracts, Contractual Capacity, Free consent and Consideration, Void Agreement, Contingent Contract, Performance and Discharge of Contract, Remedies for Breach of Contract, Quasi Contract.

#### UNIT-II

**The Indian Contract Act 1872:** Contract of Indemnity and Guarantee, Contract of Pledge and Bailment, Agency.

**Sale of Goods Act 1930:** Introduction of Act, Goods and their classification, conditions and warranties, Doctrine of Caveat Emptor, passing (transfer) of property (ownership) in goods, Performance of the contract of sale, Rights of Unpaid Seller, Auction sale.

#### Unit –III

**Consumer Protection Act 2019:** Introduction of Act, Consumer Rights and Duties, Consumer Protection Councils, Central Consumer Protection Authority, Consumer Dispute Redressal Commission, Mediation, Product Liability.

**Partnership Act 1932:** Introduction, Types of Partnership and types of Partners, Rights and duties of Partners, Dissolution of partnership.

**Limited Liability Partnership Act 2008:** Meaning, Need, advantages and disadvantages. Incorporation and Dissolution of LLP, Difference between Limited liability Partnership & Partnership.

**The Insolvency and Bankruptcy Code, 2016:** Concept, Need and Procedure.

#### Reference Books:

- Kapoor N.D, Elements of Mercantile Law, Sultan Chand & sons, New Delhi.
- Nolakha, R. L. Business Law, RBD Publications, Jaipur.

**Note:** Latest Edition of the book to be referred

## Course Structure in Semester – I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJCOM-103	Business Economics	Major	04	04	10	20	70	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MJCOM-103-Business Economics

**Max. Marks: 100**  
**Credits: 4**

**Min. Marks: 40**  
**Duration: 2 ½ Hrs**

**Course Outcomes:** After completion of the course, student will be able to:

1. Understand and identify the economic variables in general business atmosphere.
2. Perceive the knowledge about economics at Micro level and various economic concepts such as marginal Concepts, demand Function and law of variable proportion
3. Understand the different theories of factor pricing and also about different market structure and various pricing techniques

#### Unit I

**Business Economics-** concept, characteristics, importance of business economics, scope. Micro & Macro Economic Analysis - Concept, Scope and application in formulation of Business Policies. Economic Problems and Functions of an Economic System. Functions of an economic system. Production Possibility Curve.

**Consumer Behaviour:** Utility Analysis - Cardinal Approach - Marshall's Approach, the law of diminishing marginal utility, the law of equi marginal utility. Ordinal Approach - Indifference Curve Analysis, Budget Line, Price effect, income effect and substitution effect, application of indifference curve analysis, Consumer Surplus - concept and significance.

#### Unit II

**Demand Analysis** - Concept, features, objectives, demand function, determinants of demand, types of demand, the law of demand, extension and contraction of demand, shift of demand curve. Elasticity of demand - concept, types, degree of price elasticity of demand, measurement of price elasticity of demand.

**Production & Cost Analysis:** factors of production, production Function: Laws of Returns, Returns to Scale, Economies and diseconomies of scale. Cost Analysis -Cost Concepts and Classification, Cost Function and determinants of Cost. Short-term and Long -term Cost Analysis.

Concept of Supply, Law of Supply and Elasticity of Supply.

#### Unit III

**Market:** Classification and structure, General theory of price determination, time element in price determination, Price and output determination under Perfect and Imperfect Competition, Monopoly and Discriminating Monopoly. Oligopoly - Characteristics, Price Leadership and Kinked Demand Curve.

**Factor Pricing** - Marginal productivity theory of distribution; Wages – concept, kinds and modern theory; Rent-concept; Ricardian and modern theory, Quasi Rent. Interest- concept, liquidity preference theory & modern theory of interest. Profit- Concept, Risk bearing theory, Uncertainty bearing theory, Marginal Productivity theory & Innovation theory and Demand & Supply theory of Profit.

**National income**-Meaning, Concepts & Significance

### Reference Books-

- Saraswat, Lodha, Sharma, Godha, Kiradoo, Tailor – Business Economics – Ajmera Book Company
- Jhingan M.L. – Micro Economic Theory, Vrinda Publications.
- Agarwal M.D and Deo Som –Business economics – R.B.D. Publishing House.
- Jhingan M.L. Advanced Economic Theory, Vrinda Publication P. Ltd.

Note: Latest Edition of the book to be referred

## Course Structure in Semester – II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJCOM-203	Economic Environment in India	Major	04	04	10	20	70	40/100
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	SOR	01	01	-	-	25	10/25

### MJCOM-203-Economic Environment in India

Max. Marks: 100  
Credits: 4

Min. Marks: 40  
Duration: 2 ½ Hrs

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

1. Assess the achievements of economic planning in India.
2. Analyze the effects of population explosion, unemployment & poverty on economic development and evaluate the role of small scale & cottage industries in developing Indian economy
3. Summarize all the factors of Foreign Trade in India

#### Unit I

**Economic environment** - Meaning, Factors affecting economic environment; Economic planning in India - Objectives, Strategies, Achievements and Failures. New Economic Policy and Reforms – with special reference to Tax reforms viz GST and Problems of Black Money. National Institution for Transforming India (NITI Aayog): organization and functions. Basic features of Indian Economy: Growth and development of Indian Economy.

#### Unit II

**Problems of Indian Economy-** Population - Characteristics, causes of growth, problems. New Population Policy and its evaluation. Problems of Unemployment, Poverty, Industrial Sickness and Regional Imbalances.

**Industrial Development in India:** Problems, Industrial policy of 1991 and Recent changes. Small Scale Industries: Importance, Problems and Present Position. Privatization and Disinvestment.

**Agriculture:** Role of Agriculture in Indian Economy, Problems and present position in India. New Agriculture Strategy and its impact. Land Reforms and Agriculture Credit. Organic Farming. eNAM Portal (e-National Agriculture Market)



### Unit III

**Foreign Trade in India-** Meaning, volume, composition & direction, export promotion, export and import policy of the government, investment of foreign capital in India, role of multi- national corporations in the Indian economy.

**Foreign exchange rate-** fixed and flexible rate, Foreign Direct Investment- Meaning, advantages, limitations, Foreign Indirect Investment: meaning and its role in economic development, Foreign Aid: meaning, types: tied and untied aid, role of foreign aid in economic development, determinant factors of foreign aid for economic development

#### Reference Books-

- Vashistha, Bhinda, Sharma, Lodha, Sharma – Economic Environment in India – Ajmera Book Company .
- Swami H.R. , Gupta B. P – Economic Environment in India – R.B.D Publications

**Note:** Latest Edition of the book to be referred

**SOPHIA GIRLS' COLLEGE**  
**(AUTONOMOUS)**  
**AJMER**



**Scheme of Examination**  
**And**

**SYLLABUS**

**BATCH 2023**

**FOR**

**Bachelor of Computer Application**

**Under**

**Choice Based Credit System (NEP)**

**Semester I to VI**

## Bachelor of Computer Application

Eligibility for admission in First Year of BCA is 10+2 examination of any board with at least 50% marks. As regards admission on reserved category seats government rules will be applicable.

### SCHEME OF EXAMINATION

The number of the paper and the maximum marks for each paper together, with the minimum marks required to pass are shown against each subject separately. It will be necessary for a candidate to pass in the theory as well as the practical part of a subject/paper, wherever prescribed, separately.

Classification of successful candidates shall be as follows:

First Division 60%	of the aggregate marks prescribed in
Second Division 50%	Semesters I to VI taken together

All the rest shall be declared to have passed the examination.

- For passing a candidate shall have to secure at least 40% marks in each course (Theory and Practical separately).
- No division shall be awarded in Semesters I to V.
- Whenever a candidate appears for a due paper examination, she will do so according to the syllabus in force.
- A candidate not appearing in any examination/absent in any paper of term end examination shall be considered as having DUE in those papers.

### End Semester Examination Pattern

**Maximum Marks: 50**  
**Hrs**

**Duration: 2½**

#### Section A

**10 × 1 = 10 Marks**

Contains 10 Questions of 1 mark each and all are compulsory. Three questions from each unit and one extra question from any one unit

#### Section B

**3+3+4 = 10 Marks**

Contains 3 questions with internal choice (Two questions from each unit). (2 Questions of 3 marks each and 1 Question of 4 marks) A student has to attempt 3 questions, choosing at least one question from each unit.

#### Section C

**3 × 10 = 30 Marks**

Contains 3 questions with internal choice (Two questions from each unit). Each Question carries 10 marks. A Student has to attempt 3 questions, choosing at least one question from each unit.

### End Semester Practical Examination Pattern

1. A Laboratory Exercise File should be prepared by each student for practical paper and should be submitted during practical examination.
2. Practical Marks is awarded on the basis of Written Work (Laboratory Exercise), Viva-voce & File Work.
3. Duration of practical exam is 3 hours.

**FYUP CREDIT SCHEME 2023**

Structure of 3 Year Undergraduate Program Based On NEP (Practical Subjects)

S. No.	Honours With Research	Multi-Disciplinary Course	Ability Enhancement Course (AEC)	Skill Enhancement Course	Value Added Course	Summer Internship/Social Outreach	Research Project Or Dissertation	Total	
	Required Credit for Major Course (4) (Theory +Prac.)	Total Required Credit (3) (6)	Total Required Credit (2) (6)	Total Required Credit (3) (9)	Total Required Credit (2) (8)	Total Required Credit (3)	Total Required Credit 20	Credit	Marks
<b>Sem - I</b>	MAJOR A (3+1) MAJOR B (3+1) MAJOR C (3+1)	MDC-I (3)	AEC-104 General English	SEC-I	-	-	-	20	500
<b>Sem - II</b>	MAJOR A (3+1) MAJOR B (3+1) MAJOR C (3+1)	MDC-II (3)	AEC-105 General Hindi	-	VAC-I: Physical Fitness (2)	ISO - 25 (1)	-	20	500
<b>Total</b>	<b>24</b>	<b>6</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>		<b>40</b>	<b>1000</b>

**The allocation of the 2 Majors and minor subject is strictly based on merit (Performance in Sem - I & II)**

**The student requires 40 credits during the first year of the undergraduate program for qualifying for an Undergraduate Certificate**      **40**      **1000**

<b>Sem -III</b>	MAJOR-A1 (3+1) MAJOR-A2 (3+1) MAJOR-B1 (3+1) MAJOR-B2 (3+1) <b>MINOR-C (3+1)</b>	-	-	-	VAC-III GEN-106- Env. Cons. (2)	-	-	22	550
<b>Sem -IV</b>	MAJOR-A1 (3+1) MAJOR-A2 (3+1) MAJOR-B1 (3+1) MAJOR-B2 (3+1) <b>MINOR-C (3+1)</b>	-	50 COMM. ENG (2)	-	-	-	-	22	550
<b>Total</b>	<b>40</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>-</b>		<b>44</b>	<b>1100</b>
	<b>64</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>1</b>		<b>84</b>	<b>2100</b>

**The student requires 84 credits during the second year of the undergraduate program for qualifying for a Diploma**

<b>Sem - V</b>	MAJOR-A1 (3+1) MAJOR-A2 (3+1) <b>/DSE - A2</b> MAJOR-B1 (3+1) MAJOR-B2 (3+1) <b>/DSE - B2</b>	-	-	<b>SEC-V (3)</b>	VAC-V MOOCs/ swayam/EEA (1)	ISO -50 (2)	-	22	550
<b>Sem - VI</b>	MAJOR-A1 (3+1) MAJOR-A2 (3+1) <b>/DSE - A2</b> MAJOR-B1 (3+1) MAJOR-B2 (3+1) <b>/DSE - B2</b>	-	-	<b>SEC-VI (3)</b>	VAC-VI Democratic awareness with legal literacy/ NSS/NCC (3)	-	-	22	550
<b>Total</b>	<b>32</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>4</b>	<b>02</b>	<b>-</b>	<b>44</b>	<b>1100</b>
	<b>96</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>		<b>128</b>	<b>3200</b>

**On successful completion of three years, the relevant Undergraduate Degree shall be awarded. A Bachelor's degree requires 128 credits**

**4 YEAR UNDER GRADUATE HONOURS PROGRAM**

Sem -VII	MAJOR-A1 (6) MAJOR-A2 (6) (Practical) MAJOR-A5 (6)	-	-	-	-	-	MAJOR- A3 (6) /DSE – A3 MAJOR- A4 (6)	30	500
Sem - VIII	MAJOR-A1 (6) MAJOR-A2 (6) (Practical) MAJOR-A5 (6)	-	-	-	-	-	MAJOR- A3 (6) MAJOR- A4 (6)	30	500
Total	36	-	-	-	-	-	24	60	1000
	132	6	6	9	8	3	24	188	4200

**On the successful completion of the fourth year, a student shall be awarded an HONOURS Degree.  
A Bachelor's degree with Honours requires a total of 188 credits (to have an Honours Degree  
Major Subject should have 50% of total credits)**

**4 YEAR UNDER GRADUATE HONOURS WITH RESEARCH**

Sem -VII	MAJOR-A1 (6) MAJOR-A2 (6) (Practical) MAJOR-A5 (6)	-	-	-	-	-	MAJOR- A3 (6) /DSE – A3 MAJOR- A4 Research Methodology (6)	30	500
Sem - VIII	MAJOR-A1 (6) MAJOR-A2 (6) (Practical) MAJOR-A5 (6)	-	-	-	-	-	Research Project -II (12) <b>OR</b> Dissertation - II (12)	30	500
Total	36	-	-	-	-	-	24	60	1000
	132	6	6	9	8	3	24	188	4200

**On the successful completion of the fourth year, a student shall be awarded a Degree Honours with  
Research.  
A Bachelor's degree of Honours with Research requires a total of 188 credits**

## OUTLINE FOR UNDERGRADUATE COURSES UNDER NEP

The UGC has formulated a new student-centric “Curriculum and Credit Framework for Undergraduate Programmes (CCFUP)” incorporating a flexible choice-based credit system, multidisciplinary approach, and multiple entry and exit options. This will facilities students to pursue their career path by choosing the subject/field of their interest.

The NEP 2020 undergraduate curriculum is a significant shift towards a more student-centric and flexible learning experience. It empowers students to design their own educational journeys and graduate with the knowledge and skills to thrive in the 21<sup>st</sup> century workforce.

Undergraduate degree programmes of either 3 or 4-year duration, with multiple entry and exit points and re-entry options, with appropriate certifications such as:

- A UG Certificate after completing 1 year (two semesters) of study in the chosen fields of study.
- A UG Diploma after 2 years (four semesters) of study.
- A Bachelor’s degree after a 3-year (six semesters) programme of study.
- A 4-year bachelor’s degree (Honours) after eight semesters programme of study.
- If the student completes a rigorous research project in their major area(a) of study in the 4<sup>th</sup> year of a bachelor’s degree (Honours with Research).

### **Course Under Choice Based Credit System (CBCS)**

#### **25. Major Discipline:**

- a. Discipline Specific Core Courses (DSCC):** A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core Course. Each core course carries 4 credits for non-practical course and for practical core course carries 4 credits (3 theory + 1 practical).
- b. Discipline Specific Elective (DSE):** Choice of specific topics as per a student’s need. Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective. Each core course carries 4 credits.

**26. Minor Course:** is a program that allows students to explore topics that cross traditional academic boundaries. These are designed to foster a more holistic and flexible education, encourage students to develop a broader skill set and a diverse knowledge base. Each minor course carries 4 credits.

**27. Multi-Disciplinary Course (MDC):** MDC are designed to bridge gaps between traditional academic boundaries, allowing students to explore and integrate knowledge from multiple disciplines. MDC courses offer a broad perspective and encourage creative problem-solving by exposing students to a range of subjects, 3 credits is assigned to MDC, students can select MDC in Semester 1 and 2. Student take elective courses outside their major, fostering cross-disciplinary knowledge.

**28. Ability Enhancement Core Courses (AECC) :** AECC are a category of courses designed to help students develop essential skills and knowledge that enhance their overall learning experience and personal development. It carries 2 credits each in Semester 1, 2 and 4.

**29. Skill Enhancement Course (SEC):** SEC are designed to equip students with practical skills and competencies that are relevant to the workforce and society. Skill-based education and vocational training to ensure students are employable and can contribute to economic and social needs. SEC has 3 credits each in semester 1, 5 and 6. These courses may be chosen from the SEC table as given in Semester 1, 5 and 6.

**30. Value Added Course (VAC):** VAC are designed for holistic development, encourage interdisciplinary learning, and prepare students for the demands of the modern workforce. These courses offer flexibility and can be tailored to meet emerging trends and industry needs. These courses are available in Semester 2, 3, 5 and 6. Each VAC carries 2 credits.

**31. Social Outreach / Summer Internship (SOR):** Community service involve students engaging in activities that benefit their communities, fostering a sense of social responsibility and civic

engagement. SOR carries 3 credits each in Semester 2 and 5.

**32. Project, Dissertation & Internships:** These activities play a significant role in the NEP, as they offer students practical experience, real-world exposure and the opportunity to apply their knowledge to real-world situations. These elements are designed to bridge the gap between academic learning and industry requirements, ensuring that graduates are better prepared for employment or further studies.

## Program Outcome

### 1. Foundation knowledge & Digital Competence

The student will possess a solid foundation in key computer science concepts, including programming fundamentals, algorithms, data structures, discrete mathematics, and software engineering. This knowledge will enable them to approach problems methodically and design effective solutions using appropriate techniques.

### 2. Effective Communication & Logical Understanding

The student will be equipped with the skills to present complex technical concepts in an understandable manner, engage in discussions, and collaborate in teams, fostering interpersonal and professional communication. They will demonstrate proficiency in problem-solving, coding, and the ethical use of digital platforms, ensuring they can navigate and contribute to the ever-evolving digital landscape.

### 3. Technical Proficiency & Problem Analysis

The student will have a strong foundation in computer science principles, including algorithms, programming languages, data structures, software engineering, and system design. They will be proficient in applying theoretical knowledge to solve practical problems in diverse domains of computing.

### 4. Critical Thinking & Decision Making

The students will develop strong critical thinking skills, enabling them to analyze complex problems, evaluate various solutions, and make informed decisions. They will apply logical reasoning, systematic approaches, and data-driven analysis to solve real-world computing problems, ensuring optimal and efficient solutions.

### 5. Ethical Development

The student will value lifelong learning and commit to keeping abreast of emerging technologies, ethical issues, and industry best practices. They will strive for self-improvement in both technical skills and ethical conduct, promoting an ongoing commitment to professional development and responsible computing practices.

### 6. Project Management & Adaptability to Industry needs

The student will be capable of designing, developing, testing, and deploying software solutions that meet user requirements and industry standards.

They will stay current with rapidly evolving technology trends and be capable of adapting to new tools, platforms, and programming languages. They will be prepared to continuously update their skill sets, ensuring they remain competitive and capable in the dynamic field of information technology.

## Course Structure in Semester – I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJBCA-101	Computer Fundamentals and PC Software	Major	03	03	5	20	50	30/75
MJBCA-102	‘C ‘ Programming	Major	03	03	5	20	50	30/75
MJBCA-103	Multimedia	Major	03	03	5	20	50	30/75
MJBCA-104	Practical: PC Software	Major	02	01	-	-	25	10/25
MJBCA-105	Practical: ‘C’ Programming	Major	02	01	-	-	25	10/25
MJBCA-106	Practical: Multimedia (Flash)	Major	02	01	-	-	25	10/25
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MJBCA – 101 Computer Fundamentals and PC Software

Max. Marks : 75

Min. Marks:

30

Credits: 03

Duration: 2½

hrs

**Learning Outcome:** On successful completion of the course, the students will be able to :-

1. Describe computer systems, their types and the uses of various input devices
2. Categorize different output devices on the basis of operation and study different tools of Microsoft Word by hands on practice
3. Develop charts and validation on the data Apply various functions on the excel sheet and Design effective presentation by implementing different formatting styles.

#### Unit – I

**Introduction to Computer:** Definition, Diagram, Characteristics, Classification of Computers: Analog Computers, Digital Computers, Hybrid Computers, Classifications of computer on the basis of size and speed, different type of computers, Indian Super Computer, Applications of Computers

**Input Devices:** keyboard, mouse, touch pad, touch screens, data scanning devices, optical recognition systems: bar code readers, optical mark readers, Optical character reader. Digital camera

#### Unit – II

**Output Devices:** Hard copy devices: Printer (impact printers), dot matrix printer, line printer, (non-impact printers), inkjet, laser printer, 3D printer, barcode printers. Soft copy devices: (Computer Display) CRT, Flat Panel Display: LCD, plasma display panel.

**Introduction to memory:** classifications, volatile memory, non-volatile memory

**Software:** System software, application software, programming software.

**MS-Word:** Introduction to MS-Word, Features, Application Areas and its uses, types of views, Creating & Saving : New Document, copy, cut, paste, paste special, clipboard, undo, redo, Fonts, Paragraphs: Indentation and Spacing, Columns & Breaks, Styles, Find, Replace & Goto. Inserting Tables, Picture, ClipArt, Shapes, Smart Art and Charts, Symbols and Equations, Hyperlink, Bookmark. Header & Footer. Drop Cap, Textbox, WordArt, Date and Time. Table of contents, Footnotes and Endnotes, Page



ackground. Mail merge, Macros, Auto correct and Auto Text. Comments, Page Setup, Size, Margins, Gutter, Orientation.

### UNIT-III

**MS-Excel:** **MS-Excel:** Introduction, Features, Application Areas and its uses, views and its types, formatting and its types. **Charts:** Line, bar, column, area, pie. Pivot Tables, Data management (Sort, filters, Validation, consolidation, Text to column), auditing and tracing.

**Functions and Formulas -Text:** char, concatenate exact, find, left, right, mid, lower, upper, proper, search, substitute, trim. **Logical:** and, or, not **Math and trig:** abs, int, even, odd, fact, mod, pi, power, product, round, roman, sign, sqrt, trim. **Statistical:** Average, count. Protecting sheet and workbook.

**MS-PowerPoint:** Introduction to PowerPoint, Features, Application Areas and its uses, Creating Presentations through Blank Presentations, Templates, Slide Master, Views of PowerPoint, Formatting of Presentations: Inserting Graphics and Animations, Formatting & Customizing Presentations: Slide Transactions, Custom Animation, Inserting sounds. Set up and Custom Slide Show, Handouts.

#### Reference Books:

- Pradeep K. Sinha, Priti Sinha, "Computer Fundamentals". BPB Publications.
- Rajaraman, V., "Fundamental of Computers". Prentice Hall India, New Delhi.
- Fundamentals Of Information Technology, 2E , Alexis Leon & Mathews Leon, Vikas Publishing
- Microsoft Office 2007 – Joyce Cox & Joan Preppernau – PHI Publication

## MJBCA – 102 'C' Programming

**Max. Marks : 75**

**30**

**Credits: 03**

**hrs**

**Min. Marks:**

**Duration: 2½**

**Learning Outcome:** On successful completion of the course, the students will be able to :-

1. Understand the fundamental concepts of the C programming language, proficient in using input/output instructions, operators and looping
2. Demonstrate proficiency in working with arrays in C and understanding of function mechanisms.
3. Gain proficiency in working with pointers and arrays, structures and union.

### Unit - I

**'C' Language:** Character Set, Keywords, Constants, Variables, Data Types, Type Conversion.

**Instruction & its types:** Input Output Instructions, Operators & Expressions: Arithmetic, Relational, Logical, Conditional , Arithmetic Instructions.

**Control Instructions:** Decision Control (if, if-else, if else ladder, nested if, switch case), Loop Control (while, for, do-while, Nesting Loops), Jump statements (break, continue, goto)

### Unit – II

**Arrays:-** Concept of Arrays, One dimensional array & Two dimensional array, Storage strategy, Array Initialization, Operations on Arrays (traversing, addition, subtraction, transpose), Search – linear & binary. Sorting - bubble sort & selection sort.

**Functions:-** Declaration, Calling (Call by value, Call by reference) & Definition of functions, Recursion, Storage Class (auto, static, register, extern), Scope rules (Local, Global).

### Unit – III

**Pointers:-** Pointers and addresses, Pointers as Function arguments, Pointers and Arrays, Address Arithmetic. Character Pointers, String handling and String functions (strlen, strcat, strcmp, strcmpi, strrev, strcpy).

**Structure and Union:** Basics, Structures and Functions, Arrays of Structures, structure pointer variables. Union definition and its use.

**Reference Books:**

- Let Us 'C' -Yashavant P Kanetkar, BPB Publications
- Programming in Ansi 'C' – Balaguruswami – TMH.
- 'C' Programming Language – Kernighan & Ritchie - PHI
- 'C' How to Program – Dietel & Dietel - PHI
- 'C' Programming - Dr. Neeraj Bhargava & Dr. Ritu Bhargava, Alka Publications

**MJBCA – 103: Multimedia**

**Max. Marks : 75**  
**30**  
**Credits: 03**  
**hrs**

**Min. Marks:**  
**Duration: 2½**

**Learning Outcome:** On successful completion of the course, the students will be able to:–

1. Identify terminology associated with the concepts, techniques, and processes used throughout the multimedia environment.
2. Compare different image types and compression
3. Study laws of multimedia and design environment and design basic animations and gif images using flash

**Unit – I**

Introduction to Multimedia Technology – Application areas of Multimedia, Advantages and disadvantages of Multimedia, Media Elements d(text, sound, image, video & animation), user interface and its types, importance and features of user interface, MM hardware & software requirements(Image , Video, Audio, Sound editing software's), Images: Raster and Vector image

**Unit – II**

Image compression: Lossy and Lossless Compression, advantages and disadvantages of image compression, audio compression, audio synthesis, speech recognition and Speech Synthesis, Jpeg image compression, mpeg video compression(P,B, I frames).

Developing Applications using multimedia, methodology and design, Various multimedia laws: Patent law, Trademark Law, Trade secret Law, Copyright Law.

**Unit – III**

**Flash:** Introduction, Features , Advantages ,Concepts of Frame Rate and Resolution, Exploring The Flash Interface ,The Flash stage ,Timeline- Play head/Frames/Key Frames/ Blank frames ,Menus, Tools of Flash (Pen, Pencil, Paint Bucket Tool, spray brush ,Text, 3D rotation, deco tool), Custom colors and gradients ,Drawing object in flash (line, curve, oval, Rectangle , Polystar tool ) , stroke and fill, Layers and its types in flash, Key frames, symbols-how to create and reuse it, Object based animation, motion tween, classic tween and shape tween, adding sound.

**Reference Books**

- Fundamental of multimedia ,Ritu Bhargava, Alka Publications
- Fundamental of multimedia “Drew, Feurun, 2004.
- Adobe Flash CS4: Illustrated Barbara M. Waxer

## Course Structure in Semester – II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJBCA-201	Data Structure & Algorithm	Major	03	03	5	20	50	30/75
MjBCA-202	E- Commerce	Major	03	03	03	5	20	50
MJBCA-203	Discrete Mathematics	Major	03	03	03	5	20	50
MJBCA-204	Practical: Data Structure through 'C'	Major	02	01	-	-	25	10/25
MJBCA-205	Practical: HTML	Major	02	01	-	-	25	10/25
MJBCA-206	Practical: Discrete Mathematics	Major	02	01	-	-	25	10/25
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	SOR	01	01	-	-	25	10/25

### MJBCA – 201 : Data Structure & Algorithm

**Max. Marks : 75**  
**Credits: 03**

**Min. Marks: 30**  
**Duration: 2½ hrs**

**Learning Outcome:** On successful completion of the course, the students will be able to:

1. Understand the basic principles of data structures and the operations performed on arrays.
2. Apply suitable searching and sorting algorithms to manipulate and organize given data structures.
3. Design and implement stack and queue data structures for efficient data management.

#### Unit I

**Data Structures and its Types:** Primitive and Composite Data Types

**Arrays:** - Concept of Arrays, Single dimensional array, Two dimensional array. Operations on Arrays with Algorithms (Insertion, deletion).

Searching :(Linear and Binary), Concept of sorting, Sorting algorithms (Bubble Sort, Insertion Sort, Selection Sort). **Recursion:** Factorial, Fibonacci, Tower of Hanoi.

#### Unit II

**Linked Lists:-** Introduction to linked list and double linked list, Representation of linked lists in Memory, Traversing a linked list, Searching linked list, Insertion and deletion into linked list, Doubly linked lists, Traversing a doubly linked lists.

**Stacks and Queues:** Representation of stacks, Implementation of stacks using Array & Link List, Uses of stacks, evaluating expression.

Introduction to queues, Implementation of queues by using array and Link lists

#### Unit III

**Trees:** Definition & Basic concepts, linked tree representation, Introduction to Binary Tree, Traversing Binary Trees (Pre order, Post order and In-order), Concept of Binary search tree, algorithm of Searching, inserting and deleting in binary search trees.

**Graph:** Introduction to graphs, types of graphs (complete, weak and strong, simple), Representation of Graph: adjacency Matrix, Graph Traversal: Breadth first search, Depth first search.

**Reference Books:**

- Data Structure Through C - Y.P. Kanetkar – BPB Publication
- Data Structure Using C - E Balagurusamy – McGraw Hill
- Data Structures And Algorithm Analysis In C – Mark Allen Weiss – Pearson Education

## MJBCA–202 : E-Commerce

**Max. Marks : 75**  
**Credits: 03**

**Min. Marks: 30**  
**Duration: 2½ hrs**

**Learning Outcome:** On successful completion of the course, the students will be able to

1. Define E-commerce and its impact in different areas. Understand different Business Models
2. Handle electronic transactions in secure way
3. Applying various tags to create HTML web pages, including formatting text, adding images, creating links, constructing tables and various style sheets.

### Unit – I

E-Commerce -Introduction, Advantage, Disadvantages, Traditional commerce Vs. E-Commerce, Partial Vs Pure E-commerce. Impact of E-Commerce in different areas, the anatomy of E-commerce,

**EDI:** Introduction, Types of EDI, EDI Security and Privacy Issues, Application of EDI in business, Electronic-Catalogs, Digital Libraries. Framework of E-commerce, Business Models based on the relationship of Transaction Parties Business-to-Business (B2B), Business-to-Consumer (B2C), Consumer-to-Consumer (C2C), Consumer-to-Business (C2B), Business-to-Government (B2G), Government-to-Business (G2B), Government - to - Citizen (G2C), Intra- Business Organizational.

### Unit – II

**What is E-Governance:** Objectives, Benefits, Developmental stages of E-Governance, Prerequisites for E-Governance, E-Governance models.

**Business Models based on the relationship of Transaction types:** Brokerage model, Aggregator and Advertising model. **Electronic Payment Systems:** Introduction, Features, Types (E-Cash, E-cheque, credit card, Smart Card, Electronic Purses), Electronic Payments and Protocols E-Customer Relationship Management, Security Threats (Active, Malicious, Server Side).

Ethical, Social, and Political issues in E-commerce: Understanding ethical, social, and political issues in E-commerce, Privacy and information rights, Intellectual property rights, Governance, Public safety and welfare.

### Unit – III

**Introduction of HTML:** introduction, markup language, editing common tags, headers, text styles, working with links: creating a hyperlink, selecting hyperlink color, linking different sections of the webpage, formatting text, horizontal rules and more line breaks, unordered lists, nested and ordered lists.

**Working with images:** Inserting an image, adding border to image, aligning an image, using image as hyperlink. **Working with tables:** creating table, specifying caption to a table, setting width of table and table columns, setting cell spacing and padding, spanning rows and columns, image maps.

**Basic HTML forms,** working with frames: creating vertical and horizontal frames, applying hyperlink targets to a frame.

**Cascading style sheets:** inline, internal and external style sheets.

**Reference Books:-**

1. The Complete E Commerce Book – Janice Reynolds – CRC Press
2. E Commerce A Beginners Guide - Daniel D'Apollonio– Google Books
3. HTML Black Book – Steven Holzner–DreamTech

## MJBCA–203 : Discrete Mathematics

**Max. Marks : 75**  
**Credits: 03**

**Min. Marks: 30**  
**Duration: 2½ hrs**

**Learning Outcome:** On successful completion of the course, the students will be able to:

1. Apply set operations to solve applied problems
2. Examine the validity of argument by using Propositional Calculus
3. Understand different graphs and matrix operations

### Unit I

Basic terminology of Graph Theory –Vertices, Edges, Loop, Path, degree, **Types-** Undirected- Directed, weighted-Un-weighted, Simple-Multigraph, Labelled, Null, Di-graph, Subgraph, Connected-disconnected, Cyclic-Acyclic, Dijkstra's shortest path algorithm, Minimum Cost spanning Tree Algorithm (Prim's and Kruskal's).

**Sets:** Elements of a set, methods of describing a set, types of sets, Operations on sets-- union, intersection and difference of sets, Associative Laws, Distributive laws, De Morgan's laws (proofs) Venn Diagrams, Cartesian product of two sets.

### Unit II

Relation: Basic definition of relation and types of relations (reflexive, irreflexive, symmetric, A-symmetric, transitive, anti symmetric, equivalence), Binary relations, domain, range, inverse and composite.

Language of Logic: Proposition, Compound Proposition, Conjunction, Disjunction, Implication, Converse, Inverse & Contra positive, Biconditional Statements, tautology, Contradiction & Contingency, Logical Equivalences, Universal and existential quantifiers .

### Unit III

**Matrices:** Definition of a matrix, types of matrices, Basic operations(Addition, subtraction and Multiplication), Transpose, Determinant of a square Matrix, Minor and Co-factors , Adjoint of a square Matrix, Inverse of a matrix, Solution to System of Linear equations- Matrix Inverse method and Cramer's method.

### Reference Books:

- Keneth H. Rosen, "Discrete Mathematics and Its Applications", TMH
- C.L. Liu, "Elements of Discrete Mathematics", TMH.
- Kolman, Busby & Ross, "Discrete Mathematical Structures", PHI.
- Narsingh Deo, "Graph Theory With Application to Engineering and Computer Science", PHI.

**SOPHIA GIRLS' COLLEGE,  
(AUTONOMOUS)**

**AJMER**



**Scheme of Examination  
And  
SYLLABUS  
BATCH 2023**

**FOR**

**Four-Year Under Graduate Honours Program  
BACHELOR OF BUSINESS  
ADMINISTRATION**

**Semester – I to II**

# BACHELOR OF BUSINESS ADMINISTRATION

Eligibility for admission in First Year of BBA is 10+2 examination of any board with at least 50% marks. With regard to admission in reserved category seats, government rules will be applicable.

## SCHEME OF EXAMINATION

The number of the paper and the maximum marks for each paper together, with the minimum marks required to pass are shown against each subject separately. It will be necessary for a candidate to pass in the theory as well as the practical part of a subject/paper, wherever prescribed, separately.

Classification of successful candidates shall be as follows:

First Division 60%	of the aggregate marks prescribed in Semesters I to VI taken together
Second Division 50%	

All the rest shall be declared to have passed the examination.

- For passing a candidate shall have to secure at least 40% marks in each course (Theory and Practical separately).
- No division shall be awarded in Semesters I to V.
- Whenever a candidate appears for a due paper examination, she will do so according to the syllabus in force.
- A candidate not appearing in any examination/absent in any paper of term end examination shall be considered as having DUE in those papers.

### End Semester Examination Pattern

**Maximum Marks: 70**

**Duration: 2½**

**Hrs**

#### **Section A**

**10 × 1 = 10 Marks**

Contains 10 Questions of 1 mark each and all are compulsory. Three questions from each unit and one extra question from any one unit

#### **Section B**

**5+5+5 = 15 Marks**

Contains 3 questions with internal choice (Two questions from each unit). A student has to attempt 3 questions, choosing at least one question from each unit.

#### **Section C**

**15 × 3 = 45 Marks**

Contains 3 questions with internal choice (Two questions from each unit). Each Question carries 15 marks. A Student has to attempt 3 questions, choosing at least one question from each unit.

## FYUP CREDIT SCHEME 2023

### STRUCTURE OF 3 YEAR UNDERGRADUATE PROGRAM BASED ON NEP (NON- PRACTICAL SUBJECTS)

SEM	Honours With Research	Multi-Disciplinary Course	Ability Enhancement Course (AEC)	Skill Enhancement Course	Value Added Course	Summer Internship/ Social Outreach	Research Project OR Dissertation	Total	
	Required Credit for Major Course (4)	Total Required Credit (3) (6)	Total Required Credit (2) (6)	Total Required Credit (3) (9)	Total Required Credit (2) (8)	Total Required Credit (3)	Total Required Credit 20	Credit	Marks
Sem-I	MAJOR A (4) MAJOR B (4) MAJOR C (4)	MDC-I (3)	AEC-104 General English	SEC-I	-	-	-	20	500
Sem-II	MAJOR A (4) MAJOR B (4) MAJOR C (4)	MDC-II (3)	AEC-105 General Hindi	-	VAC-I Physical Fitness	ISO – 25 (1)	-	20	500
<b>Total</b>	<b>24</b>	<b>6</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>		<b>40</b>	<b>1000</b>

**The allocation of the 2 Majors and minor subject is strictly based on merit (Performance in Sem - I & II)**

**The student requires 40 credits during the first year of the undergraduate program for qualifying for an Undergraduate Certificate**

Sem-III	MAJOR-A1(4) MAJOR-A2(4) MAJOR-B1(4) MAJOR-B2(4) MINOR-C(4)	-	-	-	VAC-III GEN-106- Env. Cons. (2)	-	-	22	550
Sem-IV	MAJOR-A1(4) MAJOR-A2(4) MAJOR-B1(4) MAJOR-B2(4) MINOR-C (4)	-	50 COMM. ENG (2)	-	-	-	-	22	550
<b>Total</b>	<b>40</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>-</b>		<b>44</b>	<b>1100</b>
	<b>64</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>1</b>		<b>84</b>	<b>2100</b>

**The student requires 84 credits during the second year of the undergraduate program for qualifying for a Diploma**

Sem-V	MAJOR-A1(4) MAJOR-A2(4) /DSE-A2 MAJOR-B1(4) MAJOR-B2(4) /DSE-B2	-	-	SEC-V (3)	VAC-V Moocs/ swayam/ EEA(1)	ISO - 50 (2)	-	22	550
Sem-VI	MAJOR-A1(4) MAJOR-A2(4) /DSE-A2 MAJOR-B1(4) MAJOR-B2(4) /DSE-B2	-	-	SEC-VI (3)	VAC-VI Democratic awareness with legal literacy/ NSS/NCC(3)	-	-	22	550



<b>Total</b>	<b>32</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>4</b>	<b>02</b>	<b>-</b>	<b>44</b>	<b>1100</b>
	<b>96</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>		<b>128</b>	<b>3200</b>

**On successful completion of three years, the relevant Undergraduate Degree shall be awarded. A Bachelor's degree requires 128 credits**

#### 4 YEAR UNDER GRADUATE HONOURS PROGRAM

Sem-VII	MAJOR-A1(6)	-	-	-	-	-	MAJOR-A3 (6) <b>/DSE-A3</b>	24	400
	MAJOR-A2(6)						MAJOR-A4 (6)		
Sem-VIII	MAJOR-A1(6)	-	-	-	-	-	MAJOR-A3 (6)	24	400
	MAJOR-A2(6)						MAJOR-A4 (6)		
<b>Total</b>	<b>24</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24</b>	<b>48</b>	<b>800</b>
	<b>120</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>	<b>24</b>	<b>176</b>	<b>4000</b>

**On the successful completion of the fourth year, a student shall be awarded an HONOURS Degree. A Bachelor's degree with Honours requires a total of 176 credits (to have an Honours Degree Major Subject should have 50% of total credits)**

#### 4 YEAR UNDER GRADUATE HONOURS WITH RESEARCH

Sem-VII	MAJOR-A1(6)	-	-	-	-	-	MAJOR-A3 (6) <b>/DSE-A3</b>	24	400
	MAJOR-A2(6)						MAJOR-A4 <b>Research Methodology</b> (6)		
Sem-VIII	MAJOR-A1(6)	-	-	-	-	-	Research Project-II(12)	24	400
	MAJOR-A2(6)						<b>OR</b> Dissertation-II (12)		
<b>Total</b>	<b>24</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24</b>	<b>48</b>	<b>800</b>
	<b>120</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>3</b>	<b>24</b>	<b>176</b>	<b>4000</b>

**On the successful completion of the fourth year, a student shall be awarded a Degree Honours with Research.**

**A Bachelor's degree of Honours with Research requires a total of 176 credits**

## **OUTLINE FOR UNDERGRADUATE COURSES UNDER NEP**

The UGC has formulated a new student-centric “Curriculum and Credit Framework for Undergraduate Programmes (CCFUP)” incorporating a flexible choice-based credit system, multidisciplinary approach, and multiple entry and exit options. This will facilities students to pursue their career path by choosing the subject/field of their interest.

The NEP 2020 undergraduate curriculum is a significant shift towards a more student-centric and flexible learning experience. It empowers students to design their own educational journeys and graduate with the knowledge and skills to thrive in the 21<sup>st</sup> century workforce.

Undergraduate degree programmes of either 3 or 4-year duration, with multiple entry and exit points and re-entry options, with appropriate certifications such as:

- A UG Certificate after completing 1 year (two semesters) of study in the chosen fields of study.
- A UG Diploma after 2 years (four semesters) of study.
- A Bachelor’s degree after a 3-year (six semesters) programme of study.
- A 4-year bachelor’s degree (Honours) after eight semesters programme of study.
- If the student completes a rigorous research project in their major area(a) of study in the 4<sup>th</sup> year of a bachelor’s degree (Honours with Research).

### **Course Under Choice Based Credit System (CBCS)**

#### **33. Major Discipline:**

- a. Discipline Specific Core Courses (DSCC):** A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core Course. Each core course carries 4 credits for non-practical course and for practical core course carries 4 credits (3 theory + 1 practical).
- b. Discipline Specific Elective (DSE):** Choice of specific topics as per a student’s need. Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective. Each core course carries 4 credits.

**34. Minor Course:** is a program that allows students to explore topics that cross traditional academic boundaries. These are designed to foster a more holistic and flexible education, encourage students to develop a broader skill set and a diverse knowledge base. Each minor course carries 4 credits.

**35. Multi-Disciplinary Course (MDC):** MDC are designed to bridge gaps between traditional academic boundaries, allowing students to explore and integrate knowledge from multiple disciplines. MDC courses offer a broad perspective and encourage creative problem-solving by exposing students to a range of subjects, 3 credits is assigned to MDC, students can select MDC in Semester 1 and 2. Student take elective courses outside their major, fostering cross-disciplinary knowledge.

**36. Ability Enhancement Core Courses (AECC) :** AECC are a category of courses designed to help students develop essential skills and knowledge that enhance their overall learning experience and personal development. It carries 2 credits each in Semester 1, 2 and 4.

**37. Skill Enhancement Course (SEC):** SEC are designed to equip students with practical skills and competencies that are relevant to the workforce and society. Skill-based education and vocational training to ensure students are employable and can contribute to economic and social needs. SEC has 3 credits each in semester 1, 5 and 6. These courses may be chosen from the SEC table as given in Semester 1, 5 and 6.

**38. Value Added Course (VAC):** VAC are designed for holistic development, encourage

interdisciplinary learning, and prepare students for the demands of the modern workforce. These courses offer flexibility and can be tailored to meet emerging trends and industry needs. These courses are available in Semester 2, 3, 5 and 6. Each VAC carries 2 credits.

- 39. Social Outreach / Summer Internship (SOR):** Community service involve students engaging in activities that benefit their communities, fostering a sense of social responsibility and civic engagement. SOR carries 3 credits each in Semester 2 and 5.
- 40. Project, Dissertation & Internships:** These activities play a significant role in the NEP, as they offer students practical experience, real-world exposure and the opportunity to apply their knowledge to real-world situations. These elements are designed to bridge the gap between academic learning and industry requirements, ensuring that graduates are better prepared for employment or further studies.

### **Program Outcomes**

Program outcomes for a Bachelor of Business Administration (B.B.A.) program, designed to align with the guidelines of the National Assessment and Accreditation Council (NAAC) and the National Education Policy (NEP) 2020 in India:

- 1. Enhancement of Knowledge of Business Management and Accounts:** Empowers students with a deep understanding of core Business Management principles and accounting practices.
- 2. Entrepreneurship and Ethical Leadership:** Students will be able to develop and assess business plans, identify market opportunities and mitigate risks associated and will be able to recognize and address ethical issues in business.
- 3. Communication and Interpersonal Skills:** Students will be able to effectively communicate business concepts and ideas, both orally and in writing, to diverse audiences, fostering collaboration and teamwork.
- 4. Functional Management:** Provides students with a comprehensive understanding of core business functions and their interdependencies.
- 5. Business Environment and Legal Awareness:** Equip students with comprehensive knowledge of the external and legal frameworks that influence businesses. This program fosters an understanding of economic, legal and regulatory dynamics, ensuring compliance and ethical practices in organizations.
- 6. Research Skills:** Students will be able to conduct independent research projects, including literature review, data collection, analysis, and presentation of findings.

## Course Structure in Semester– I

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJBBA-101	Basics of Accounting	Major	04	04	10	20	50	40/100
MJBBA-102	Principles of Business Management	Major	04	04	10	20	50	40/100
MJBBA-103	Business Ethics & Sustainability	Major	04	04	10	20	50	40/100
AEC	General English	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 1.1	MDC	03	03	5	20	50	30/75
SEC	Select SEC From Table 1.2	SEC	03	03	5	20	50	30/75

### MJBBA-101: Basics of Accounting

**Max. Marks: 100**

**Marks:40**

**Credits: 4**

**2½Hrs**

**Min.**

**Duration:**

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

1. Understand and apply the basic concepts of accounting.
2. Identify different types of errors in accounting and prepare the final accounts of a business.
3. Demonstrate proficiency in computerised financial accounting.

**Note: Please make a 60:40 distributions in numerical: theory questions.**

#### Unit – I

**Meaning and scope of Accounting;** Need, development and definition of accounting, Bookkeeping and accounting, Objectives of Accounting, Accounting Transactions.

**Accounting Concepts & Conventions.**

**Journal, Ledger, Trial Balance.**

#### Unit- II

**Rectification of Errors:** Types, Rectification of error traced before preparation of Trial Balance and after preparation of Trial Balance.

**Final accounts:** Trading Account, Profit and Loss Account, Balance Sheet, Adjustment Entries.

#### Unit- III

**Depreciation Accounting:** Meaning, Objective, Causes. Methods of Depreciation- Straight Line Method, WDV Method, Sinking Fund Method and Annuity Method. Change in method of Depreciation from Straight Line to WDV and WDV to straight Line with retrospective and without retrospective.

**Computerized Financial Accounting:** Meaning, Need, Importance, Objective, Basic concepts, Fundamentals of Tally, Features of Tally.

**Reference Books:**

- Hanif, M., Mukherjee A., Modern Accountancy-Part I, , Tata McGraw Hill.
- Jain, Khandelwal, Pareek, Fundamentals of Accountancy Part-I, , Ajmera Book Co.
- Gupta Vikas Business Accounting & Tally ERP9 DEOTECH.
- Kumar V Mishra, Tally with GST, T. Balaji, New Delhi.
- Note: Latest edition of books to be referred.

## MJBBA-102: Principles of Business Management

Max. Marks: 100  
Credits:4

Min. Marks:40  
Duration: 2 ½ Hrs

**Course Outcome:** On successful completion of the course the students will be able to: -

1. Interpret the concept of management, decision-making & MBO.
2. Analyse organisation structure, authority & responsibility relationships.
3. Collaborate the various concepts of Office Management with Management.

### Unit- I

**Introduction:** concept, nature, process and significance of management; Principles of Management, Development of management thought

**Planning:** concept, process, types, Essentials of effective planning. Decision making-concept, Types and process; Management by Objectives.

### Unit- II

**Organization:** concept, nature, process and significance, Authority- Meaning, Types, Sources, Characteristics; Responsibility & Accountability-Meaning & Characteristics, Centralization and decentralization with their respective meaning, advantages & disadvantages,

**Delegation of Authority-** Meaning, Importance, Limitations & Essentials to make effective delegation. Organization structure-forms.

**Managerial control-** concept and Process; Effective control system; Techniques of control - Traditional and modern.

### Unit- III

**Office management:** objectives, responsibility for office work, selection of office site, layout. Organizing and method, office machinery and equipments, the future offices.

**Electronic data interchange-** concept, objectives and importance.

### Reference Books:

- Naulakha R.L, Principles of Management RBD Publications
- Sudha G.S, Management, Ramesh Book Depot
- Rajpurohit, Sharma, Sharma, Gupta, Management Ajmer a Book Company, Jaipur.

Note: Latest edition of books to be referred

## MJBBA-103: Business Ethics and Sustainability

Max. Marks: 100  
Min.Marks:40

Credits:4  
Duration:2½ Hrs

**Learning Outcome:** On successful completion of the course, the student will be able to:

1. Explore the relationship between ethics and business and the relationship between ethics, morals and values in the workplace.
2. Analyze and understand various ethical principles to explain how they contribute to current management practices.
3. Evaluate the significance of corporate governance in India

### Unit-I

**Business Ethics:** Meaning, Features, Objectives, Importance, Factors influencing business ethics, Relation between Ethics and Business Management.

**Moral & Values:** Meaning, Types of values, Sources of ethics, Values for Indian Managers, Workplace Ethics, Religion & Ethics, Moral and Ethics.

**Ethics in Management-** Vision, Mission, Corporate Culture. Role of Board of directors, Code of Ethics, Code of Conduct, Ethics Committee, Concept of Whistle Blower, Ethics Audit.

### Unit-II

**Ethics in Functional and Operational Management-** Ethics in Marketing, Finance, HRM, Operations and Technology, IT, E-Commerce and BPO, Accountancy.

**Corporate Social Responsibility-** Meaning, Benefits, Arguments for and against CSR, Responsibilities towards the Stakeholders, Latest initiatives by corporates.

### Unit- III

**Ethical Decision Making-** Meaning and Process, Ethical values and Dilemmas, **Corporate Governance-** Meaning, features of good corporate governance, Factors influencing corporate governance, Corporate governance in India, Environmental Concerns and Corporations. **KYOSEI** Technique, **Triple Bottom Line (TBL)**.

#### Reference Books:

- K Aswathappa, J Usha Rani, Sunanda GundaVajhala; Himalayala Publishing house; First edition 2017.
- Business Ethics and Corporate Governance: Dr. S S Khanka; S Chand and Company Pvt Ltd; First edition 2014
- Albuquerque Daniel (2013): Business Ethics, Principles and Practices, Oxford university press, New Delhi
- Murthy C.V (2016), Business ethics, Himalaya Publishing House, Mumbai
- Velasquaz G Manual (2016), Business Ethics, Dorling Kindersley Pvt. Ltd.
- Business ethics and corporate governance, B.N.Ghosh

**Note: Latest edition of books to be referred**

## Course Structure in Semester– II

Paper Code	Nomenclature of the Paper	Paper Type	Contact Hrs Per Week	Credits	CP	CIA	ESE	Min/Max
MJBBA-201	Organisation Behaviour	Major	04	04	10	20	50	40/100
MJBBA-202	Business Statistics	Major	04	04	10	20	50	40/100
MJBBA-203	Fundamentals of Entrepreneurship	Major	04	04	10	20	50	40/100
AEC	General Hindi	AEC	02	02	-	15	35	20/50
MDC	Select MDC From Table 2.1	MDC	03	03	5	20	50	30/75
VAC	Physical Fitness	VAC	02	02	-	15	35	20/50
SOR	Social Outreach Programme	SOR	01	01	-	-	25	10/25

## MJBBA-201: Organization Behaviour

**Max. Marks: 100**

**Credits:4**

**Min. Marks: 40**

**Duration: 2½ Hrs**

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

1. Interpret the concepts of Personality, Perception and Attitude.
2. Appraise group behaviour, group decision making, leadership theories.
3. Assess the concepts of conflict management and motivation.

### Unit-I

**Understanding and managing Individual behaviour- Personality:** concept, theories, determinants of personality, personality development, personality traits affecting behaviour, personality traits of Indian managers, Personality measurement, organizational applications of personality.

**Perception:** Concept, Importance, process, perceptual selectivity, perceptual organization, Interpersonal perception, factors in perceiver, factors in person perceived, situational factors, developing perceptual skills. Attitudes: concept, attitudes and behaviour, factors in attitude formation, attitudes relevant for organizational behaviour, attitude change (methods, developing positive attitudes)

### Unit-II

**Foundation of Group Behaviour:** Concept, elements of groups, external conditions, group member resources, group formation and development  
–Four stage model, five stage model, punctuated equilibrium model, dimensions of group behaviour.

**Group decision making:** concept, importance, positive and negative aspects, methods.

**Leadership:** concept, theories- Trait theory, behavioural theory, situational theory, leadership styles based on behavioural approach.

### Unit-III

**Motivation:** concept, features, motivation & behaviour, motivation & performance, theories of motivation- Maslow's need hierarchy, Herzberg's two factor theory, Vroom's expectancy theory, Equity theory, Carrot & stick approach, McGregor's theory 'X'&'Y', Theory Z, Porter –Lawler model of motivation.

**Conflict management:** concept, nature, types, stages and levels, causes of organizational conflict, process, or model of conflict, approaches, process and methods of conflict management.

#### Reference Books:

- K. Aswathappa Organizational Behaviour Himalaya Publishing House.
- Subba Rao P., Organizational behavior, Himalaya Publishing House
- Sudha G.S., Organisational Behaviour, Malik & Company.

**Note: Latest edition of books to be referred**

## MJBBA-202: Business Statistics

**Max. Marks: 100**

**Credits:4**

**Min. Marks: 40**

**Duration: 2½Hrs**

**Learning outcome:** On successful completion of the course the students will be able to: -

1. Develop the skill to collect, present, classify data and analyse it using measures of central tendency and dispersion
2. Interpret the degrees of correlation & construct the regression lines
3. Illustrate the concept and computation of index numbers, time series and probability.

### Unit-I

**Introduction to statistics:** Definition, function of statistics, scope and importance of statistics, limitations and distrust of statistics, types of statistical methods, Data collection and Analysis, Types of data - primary and secondary, methods of data collection, classification of data.

**Measures of central tendency:** Meaning and definition, types of average, Median, Mode (excluding Graphical method), Arithmetic mean. Measures of Dispersion-Range, Quartile Deviation, Mean deviation and Standard Deviation. (Excluding Graphical method)

### Unit- II

**Measures of correlation:** Meaning and definition of correlation, uses of correlation, types of correlation, methods of Correlation- Karl Pearson, Rank Correlation, Probable error, coefficient of Determination and Non-determination.

**Regression Analysis:** Meaning, definition of regression, difference between correlation and regression. Linear Regression, Methods of constructing Regression Lines.

### Unit- III

**Index Number:** Meaning, types, characteristics and uses, Methods of constructing of price and quantity indices (simple and aggregate), Test of adequacy; chain base index number, Consumer price Index, problems in constructing index numbers. Analysis of Time series; Causes of variations in time series data; components of a time series: Decomposition-Additive and multiplicative models; Determination of trend-Moving averages method and method of least squares, Computation of seasonal indices by simple averages, ratio to trend, ratio to moving averages and link relative methods.

**Theory of Probability** - Concept, Theorems of Probability - Addition & Multiplication, Conditional Probability, Bayes' Theorem, Mathematical Expectation Value

### Reference Books:

- Oswal, Agrawal, Saraswal Paldecha, Agrawal - Statistics Ramesh Books Depot publications, Jaipur.
- Ranga, Gupta, Goyal, Bhatnagar, Soni; - Business Statistics & Statistical Methods; Ajmera Book Co., Jaipur.
- Dr. Agarwal Business Statistics; Vrinda Publications (P)Ltd.
- Hooda, R.P.: Statistics for business and economics - Macmillan, New Delhi
- Lewin and Rubin: Statistics for management; - Prentice-Hall of India, New Delhi

**Note: Latest edition of books to be referred**



## MJBBA-203: Fundamentals of Entrepreneurship

Max. Marks: 100

Credits:4

Min. Marks: 40

Duration: 2½ Hrs

**Learning outcome:** On successful completion of the course the students will be able to: -

1. Understand the concept of entrepreneurship
2. Identify the opportunities for business and develop a business plan.
3. Analyse financing and managing the new ventures and evaluate the benefit of women entrepreneurship.

### Unit I

**Entrepreneur-** Definition, Functions, Qualities, Types and Benefits of becoming an entrepreneur

**Entrepreneurship-** Meaning, Factors motivating entrepreneurship, Types.

Qualities/Traits of Entrepreneur

Role of an Entrepreneur in socio-economic development.

### Unit II

**Forms of Ownership** – Sole Proprietorship, Joint Hindu Family, Partnership, Limited Liability Partnership, Joint Stock Company, Co-operative Society -Meaning and Features.

**Creating and Starting the Venture** - Identifying and evaluating business opportunities, Risk taking; Decision making process.

**Business planning** – Meaning, Characteristics, Need, Importance and Process to make a business plan.

**Legal requirements** for establishing a new unit and documentation needed.

### Unit III

**Financing and managing the new venture** – Sources of Venture capital, Record keeping, Recruitment, Motivating and Leading teams, Marketing and sales controls - Meaning and Importance,

**E-commerce and Entrepreneurship** -Meaning and benefit.

**Women Entrepreneurship-** Concept, Characteristic, Obstacles, Remedies for women entrepreneurs. Role of SHG in women entrepreneurship development.

**Example of Budding Entrepreneurs** (Any 2)

### Reference Books:

- G.S.Sudha, Fundamentals Of Entrepreneurship, R.B.D. Publications.
- Ramchandani, Sharma, Pareek, Saxena, Fundamentals Of Entrepreneurship, Ajmera Book Company.
- Dr. S. S. Khanka, Entrepreneurial Development, S. Chand & Company Pvt. Ltd.
- Drucker P. Innovation and Entrepreneurship. Butterworth-Heinemann Publication
- Prasanna Chandra: Project Planning, Analysis, Selection, Implementation and Review, Tata McGraw Hill.

**Note: Latest edition of books to be referred**

  
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