Medi-Caps University, INDORE (M. P.)

B. Sc Forensic Science(Hons.) Credit Point details (2024-27)

3 Year Degree Programme

NEW Updated Scheme (2024-27)

Semester- I

S.No.	Subject Code	Course Description	Name of Papers	L	T	P	Credit
1	FS3CO01	Core (CO)	Introduction to Forensic Science	2	0	2	3
2	FS3CO17	Core (CO)	Elements of Criminology & police	3	0	2	4
3	FS3CO03	Core (CO)	Human Anatomy	4	0	2	5
4	FS3EL01	Elective Discliline	Forensic Physics	2	0	2	3
5	FS3EG01	Elective Generic	Computer Science	3	0	2	4
6	FS3AE01	Ability	English Communication	2	0	2	3
			Total	16	0	12	22
			Total Contact Hours	28			

Semester- II

S.No.	Subject Code	Course Description	Name of Papers	L	T	P	Credit
1	FS3CO16	Core (CO)	Forensic Psychology	3	0	2	4
2	FS3CO18	Core (CO)	Criminal Law	3	0	2	4
3	FS3EL11	Elective Discliline	Human Physiology	3	0	2	4
4	FS3EG05	Elective Generic	Zoology	3	0	2	4
5	FS3AE03	Ability	Environmental Studies	2	0	0	2
6	FS3SE05	Skill Enhancement	Cyber Security	3	0	2	4
7	FS3NG01	Non-Gradial (NG)	Soft Skill-1	2	0	0	2
			Total	19	0	10	24
			Total Contact Hours	29			

Semester- III

S.No	Subject Code	Course Description	Name of Papers	L	T	P	Credit
1	FS3CO06	Core (CO)	Technological Methods in Forensic	3	0	2	4
2	FS3CO19	Core (CO)	Forensic Dermatoglyphics	3	0	2	4
3	FS3CO20	Core (CO)	Advancement in Forensic Science	3	0	2	4
4	FS3EL03	Elective Discliline	Criminalists	3	0	2	4
5	FS3EG03	Elective Generic	Entomology	2	0	2	3
6	FS3SE06	Skill Enhancement	Digital Biometric	2	0	2	3
7	FS3NG02	Non-Gradial (NG)	Soft Skill-2	2	0	0	2
			Total	18	0	12	24
			Total Contact Hours	30			

Semester- IV

S.No.	Subject Code	Course Description	Name of Papers	L	T	P	Credit
1	FS3CO09	Core (CO)	Forensic Chemistry	3	0	2	4
2	FS3CO10	Core (CO)	Questioned Document	3	0	2	4
3	FS3CO21	Core (CO)	Forensic Biology	3	0	2	4
4	FS3EL04	Elective Discliline	Digital & Cyber Forensic sciene	3	0	2	4
5	FS3EG06*	Elective Generic	Chemistry	3	0	2	4
6	FS3SE03	Skill Enhancement	Scientific Investigation	2	0	2	3
			Total	17	0	12	23
			Total Contact Hours	29			

Semester- V

S.No.	Subject Code	Course Description	Name of Papers	L	T	P	Credit
1	FS3CO22	Core (CO)	Forensic Ballstics	3	0	2	4
2	FS3CO23	Core (CO)	Forensic Toxicology	3	0	2	4
3	FS3EL05*	Elective Discliline	Genetics	3	0	2	4
3	FS3EL06*	Elective Discliline	DNA Typing	3	0	2	4
4	FS3EL07	Elective Discliline	Forensic Serology	3	0	2	4
6	FS3SE08*	Skill Enhancement	Digital & Fraud Investigation	2	0	2	3
	FS3NG03	Non-Gradial (NG)	Soft Skill-3	2	0	0	2
			Total	19	0	10	21
			Total Contact Hours			29	

Semester- VI

S.No.	Subject Code	Course Description	Name of Papers	L	T	P	Credit
1	FS3CO24	Core (CO)	Forensic Anthropology	3	0	2	4
2	FS3CO25	Core (CO)	Forensic medicines	3	0	2	4
3	FS3CO26	Elective Discliline	Advance Instrumentation	3	0	2	4
4	FS3EL09*	Elective Discliline	Forensic Statistics	2	0	2	3
5	FS3EL11*	Elective Discliline	Mobile Forensic	2	0	2	3
6	FS3SE04	Skill Enhancement	Project work	0	0	6	3
			Total	11	0	14	18
			Total Contact Hours			25	

Total Credit Semester Wise

Semester- I	22
Semester- II	24
Semester- III	24
Semester- IV	23
Semester- V	21
Semester- VI	18
Total	132

Dr. Baljeet Yadav.
HOD. FS.

Dr. A.A. Kaser
Dean Science.

To
Increase Pay

Approved.

22/8/2024.

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I SEM

Paper -I

Course Code	Courses	Hours Per week			Total	
		L	T	P	Hrs	Credit
FS3CO01	Introduction to Forensic Science	2	-	2	4	3

Course Objectives:

After studying this paper, the students will be able to

1. Know the history of development of forensic science in India
2. Understand the fundamental principles and functions of forensic science.
3. Know about the various organizations and institutes of forensic science in India.
4. Classify and differentiate various crimes and their causes.
5. Understand the investigation procedures at various crime scenes.

Prerequisites: 12th

Co-requisites: Nil

Unit I

History of the Development of Forensic Science

History and development of forensic science Functions of forensic science. Nature and scope of forensic science. Definitions and concepts in forensic science Need for forensic science. Basic principles of forensic science.

Unit II

Domains in Forensic Science

Branches of Forensic Science, Police officers, prosecution officers, Judicial Officers medico-legal experts, etc. Role and qualifications of forensic scientists, Code of conduct for forensic scientists, Ethical issues in forensic science, professional standards for the practice of criminalistics, and sanctions against experts for unethical conduct.

Unit III

Organization set up for the Forensic Science Laboratory
Structure and function of the state, regional, and Central Forensic Science Laboratories Mobile Forensic Science Laboratory. Directorate of Forensic Science Service. Police and Forensic scientist relationship, role of FSL in criminal investigation, relationship between forensic expert and judiciary officer.

Unit IV

Crime
Definition of crime, characteristics of crime, classification of crimes, A brief idea about crime against human body, crime against property, Crime against Nation or state, Cybercrime and it's types and the present scenario of crime in India.

Unit V

Crime scene Investigation
Definition of crime Scene. Classification of crime scenes: indoor and outdoor, primary and secondary, Significance of the crime scene, argument, and ethics of the crime scene. Physical evidence; definition, classification, types, significance and value of physical evidence; linkage between crime scene and evidence, victim and criminal, study of some special crime scenes such as mass disasters, terror attacks, geological scenes, explosives, etc.

List of Practical

1. To study the history of crime cases from a forensic science perspective.
2. To examine the hierarchical set up of different forensic science labs.
3. To compare the code of conduct prescribed by different establishments for forensic scientists.
4. To review the sections of forensic science at Central Forensic Science Laboratories in India. Include suggestions for improvements, if any.
5. To study the annual reports of the National Crime Records Bureau and depict the data on different types of crime cases by way of smart art/templates.
6. To examine the list of projects undertaken by the Bureau of Police Research and Development and suggest the thrust areas of research in Police Science.
7. To write reports on different types of crime cases.
8. To conduct a crime scene management mock drill at the scene of crime.
9. Searching outdoor scenes of crime using grid search techniques.
10. Collection, preservation, sealing and forwarding of physical evidence from crime scenes.

Case Studies: Optional
Project: Optional

Course Outcomes

After completion of the course, Students will be able to

1. Understand the development and history of forensic science in India.
2. Classify different crimes and their types.
3. Explain the various organizational set-ups of forensic science and their roles and functioning in India and other countries.
4. Apply concepts and fundamental principles of forensic science.
5. Analyse potential evidence at the crime scene.

References

1. B.B. Nanda and R.K. Tiwari, Forensic Science in India: A Vision for the Twenty First Century, Select Publishers, New Delhi.
2. M.K. Bhasin and S. Nath, Role of Forensic Science in the New Millennium, University of Delhi, Delhi.
3. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2nd Edition, CRC Press, Boca Raton.
4. W.G. Eckert and R.K. Write in Introduction to Forensic Sciences, 2nd Edition, W.G. Eckert (ED.), CRC Press, Boca Raton.
5. R. Saferstein, Criminalistics, 8th Edition, Prentice Hall, New Jersey.
6. W.J. Tilstone, M.L. Hastrup and C. Hald, Fisher's Techniques of Crime Scene Investigation, CRC Press, Boca Raton

Suggested Readings

1. S.H. James and J.J. Nordby, *Forensic Science: An Introduction to Scientific and Investigative Techniques* Latest edition
2. M.K. Bhasin and S. Nath, *Role of Forensic Science in the New Millennium.*
3. W.G. Eckert and R.K. Write, in *Introduction to Forensic Sciences*
4. R. Saferstein, *Criminalistics*

Web Source:

www.texts books.com

www.barnesnodble@gmail.con

Open Learning Source:

1. https://swayam.gov.in/courses/public
2. http://nptel.ac.in/course.php

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Paper-II

Course Code	Courses	Hours Per week			Total	
		L	T	P	Hrs	Credit
FS3CO17	Element of criminology & police organization	3	-	2	5	4

Prerequisites: 12th
Co-requisites: Nil

Course objective:

After studying this paper, the students will be able

1. To know the various types of crimes, their causes, and consequences.
2. To understand the concepts of criminology and penology
3. To make the students conversant with the concepts of victimology and youth crimes.
4. To educate the roles of the central police organizations and their functions.
5. To know the structure and functions of State Police Organizations.

UNIT-I

Basics of Crime
Definition of crime, Elements of crime, Nature of crime. Causes and consequences of crime. Deviance and Crime; Traditional Crimes: Crimes against Property and Crimes against Person Victimless Crimes, Family-centered Crimes. Organized Crimes, Corruption, Corporate Crimes, Environmental Crimes, Hate Crimes, Crime and Politics.

UNIT-II

Basics of Criminology
Definition of criminology, aim, and scope of criminology, schools of Criminology: Pre-classical school, classical school, positivist school, sociological, theories of criminal behavior.
Basics of Penology – definition, nature, and scope. Punishment in ancient, medieval, and modern times.

UNIT-III

Basics of Victimology

Basics of Victimology: Definition, Aim and Scope. Historical development of Victimology. Victim-Offender relationship. Impact of Victimization– Physical, Financial and Psychological (Including Post-Traumatic Stress Disorder (PTSD), (Acute Stress Disorder (ASD),

Juvenile delinquency and youth crime

Definition and Concept. Causes and Prevention of Juvenile Delinquency. Juvenile and Youth Institutions: Juvenile Justice Board, Child Welfare Committee and Juvenile Observation Homes.

UNIT-IV

Central Police organisation

Central Armed Police Forces: Organizational Structure and Duties of Assam Rifles, BSF, CRPF, CISF, NSG and SSB

Central Police Organizations: Organizational Structure and Duties of RAW, IB, CBI, NIA, NCRB, BPR&D and Central Police Training Schools.

Central Forensic science laboratories.

UNIT-V

State Police organization

General organization of police at state and Hierarchical structure.

Structure and Role of CID, State Armed Forces, Home Guard, Traffic Police Force, Woman Police Force and State Police Training Schools.

Organizational Structure and Function of State Forensic Science Laboratories.

Case Studies: Optional

Project: Optional.

List of Practical:

1. To review past criminal cases and elucidate which theory best explains the criminal behaviour of the accused.
2. To review crime cases where criminal profiling assisted the police to apprehend the accused.
3. To cite examples of crime cases in which the media acted as a pressure group.
4. To examine a case of juvenile delinquency and suggest remedial measures.
5. To evaluate how rising standards of living affect crime rate.
6. To review the organisational structure of the Para-military force in India.
7. To study the organisation of police in India.
8. To Study the cases of psychological cases in India.
9. To study the White-collar crime.

Course outcome

1. To remember the definition of crime, elements of crime and types of crime.
2. To Understand the basics of criminology and penology

3. To apply the basics of victimology and juvenile delinquency.
4. To analyze structure and functions of Forensic Science Labs and Police organizations
5. To analyze structure and roles of Central Armed Police Forces and Organisations

Text books

1. Criminology - Ram Ahuja
2. Criminology & Penology with Victimology - Prof. N. V. Paranjape
3. Compendium of police powers and duties- Dr. Nikhil Gupta

References

1. B.B. Nanda and R.K. Tiwari, Forensic Science in India: A Vision for the Twenty FirstCentury, Select Publishers, New Delhi
2. M.K. Bhasin and S. Nath, Role of Forensic Science in the New Millennium, University of Delhi, Delhi.
3. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific andInvestigative Techniques, 2nd Edition, CRC Press, Boca Raton.
4. W.G. Eckert and R.K. Wright in Introduction to Forensic Sciences, 2nd Edition, W.G. Eckert (ED.), CRC Press, Boca Raton.
5. R. Saferstein, Criminalistics, 8th Edition, Prentice Hall, New Jersey.
6. W.J. Tilstone, M.L. Hastrup and C. Hald, Fisher's Techniques of Crime SceneInvestigation, CRC Press, Boca Raton.
7. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific andInvestigative Techniques, 2nd Edition, CRC Press, Boca Raton.
8. D.E. Zulawski and D.E. Wicklander, Practical Aspects of Interview and Interrogation, CRC Press, Boca Raton.
9. R. Saferstein, Criminalistics, 8th Edition, Prentice Hall, New Jersey.
10. J.L. Jackson and E. Barkley, Offender Profiling: Theory, Research and Practice, Wiley, Chichester.
11. R. Gupta, Sexual Harassment at Workplace, LexisNexis, Gurgaon.

Web Source:

https://application.wiley-vch.de
www.researchgate.net
http://www.ipu.ac.in

Open Learning Source:

1. https://swayam.gov.in/courses/public
2. http://nptel.ac.in/course.php
3. https://www.goodreads.com/book/show/779610.Introduction_to_Forensic_Science_and_Criminalistics

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Paper-III

Course Code	Courses	Hours Per week			Total	
		L	T	P	Hrs	Credit
FS3CO03	Human Anatomy	4	-	2	6	5

Course objectives

After studying this paper, the students shall be able:

1. To understand different types of Cells, its components & Tissues with its components with its working and function.
2. To Understand & identify various types of organ systems and functioning of their anatomy.
3. To understand the structure, function & working of the integumentary, Circulatory, Cardiovascular and Respiratory system.
4. To understand the structure, function & working of the Nervous & Endocrine system.
5. To elucidate structure, function & working of the Digestive and Urinary system.

Prerequisites: 12th

Co-requisites: Nil

Unit I

Introduction to Human anatomy

Definition of anatomy, history and development, levels of body organizations and systems. Basic anatomical terminology, body cavities, abdominopelvic regions and quadrants. A typical cell structure, plasma membrane, cytoplasm. Tissues, types of tissues, cell junctions.

Unit II

Integumentary & Skeletal system

Structure of skin, accessory structures of the skin, types of skin, function of the skin, development of the integumentary system. Bone tissue, functions of bone and skeletal system, types of bone, anatomy of bone, bone surface markings, histology of bone tissue, blood and nerve supply and bone formation, Axial skeleton, appendicular skeleton, joints classification, function and fractures.

Unit III

Cardiovascular & Respiratory system

Blood, physical characteristics of blood, components of blood, formation of blood cells. Heart, structure of the heart, circulation of blood, cardiac cycle. Anatomy of blood vessels, blood distribution. Respiratory system anatomy, upper respiratory system anatomy, lower respiratory system anatomy, development of respiratory system.

Unit IV

Nervous & Endocrine system

Overview of the nervous system, histology and functions of neurons, neuroglia, neural circuits. The spinal cord and spinal nerves, the brain and cranial nerves, the autonomic nervous system, somatic senses and motor control. Endocrine glands, hormone, hypothalamus and pituitary gland, pineal gland and thymus, thyroid gland and parathyroid gland, adrenal gland, pancreas, ovaries and testes.

Unit V

The digestive & urinary system

Overview of the digestive system, layers of the GI tract, peritoneum, mouth, pharynx, oesophagus, stomach, pancreas, liver and gallbladder, small intestine and large intestine. Overview of the urinary system, anatomy of the kidneys, nephron, urine transportation, storage and elimination.

Case Studies: Optional

Project: Optional.

List of practical:

1. Study the various component of compound microscopes with its working & Principle.
2. Microscopic study of epithelial and connective tissue.
3. Microscopic study of muscular and nervous tissue.
4. Identification of axial bones.
5. Identification of appendicular bones.
6. To study the integumentary and special senses using specimen, models, etc.,
7. To study the nervous system using specimen, models, etc.,
8. To study the endocrine system using specimen, models, etc
9. To study the blood and its composition with ABO blood grouping.
10. To examine heart rate and blood pressure activity & body temperature.

Course outcomes

1. To understand different types of Cells, its components & Tissues with its components with its working and function.
2. To Understand & identify various types of organ systems and functioning of their anatomy.
3. To understand the structure, function & working of the integumentary, Circulatory, Cardiovascular and Respiratory system.
4. To understand the structure, function & working of the Nervous & Endocrine system.
5. To elucidate structure, function & working of the Digestive and Urinary system.

Text books

1. E.J. Gardner, M. Simmons and D.P. Snustad; Principles of Genetics; John Wiley, New York
2. P.K. Gupta; Cytology, genetics and evolution;Rastogi Publication, New Delhi.
3. T.S. Ranganathan; A textbook of human anatomy, S Chand and Co Ltd.
4. B.D. Chaurasia's; Human Anatomy, CBCS Publisher, New Delhi.
5. Gray and Carter; GRAY'S anatomy, Elsevier publishing house.
6. Chakraborty and Chakraborty; Fundamentals of human anatomy, CBCS Publisher, New Delhi.
7. C. Vanputte; Fundamentals of human anatomy and physiology, Tata McGraw-Hill Education.
8. J. G. Betts et al.; Anatomy and physiology, OpenStax.

References

1. E.J. Gardner, M. Simmons and D.P. Snustad; Principles of Genetics; John Wiley, New York
2. P.K. Gupta; Cytology, genetics and evolution;Rastogi Publication, New Delhi.
3. T.S. Ranganathan; A textbook of human anatomy, S Chand and Co Ltd.
4. B.D. Chaurasia's; Human Anatomy, CBCS Publisher, New Delhi.
5. Gray and Carter; GRAY'S anatomy, Elsevier publishing house.
6. Chakraborty and Chakraborty; Fundamentals of human anatomy, CBCS Publisher, New Delhi.
7. C. Vanputte; Fundamentals of human anatomy and physiology, Tata McGraw-Hill Education.
8. J. G. Betts et al.; Anatomy and physiology, OpenStax

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http://nptel.ac.in/course.php
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Paper –IV

Course Code	Courses	Hours Per week			Total	
		L	T	P	Hrs	Credit
FS3EL01	Forensic Physics	2	-	2	4	3

Course Objectives

After studying this paper, the students should know

1. Fundamental principles and functions of forensic Physics
2. Methods of searching, documenting and analysis of glass.
3. The art of collecting, packaging and preserving different types of soil evidence and its analysis.
4. The standard procedure of collecting, packaging and preserving different types of cement and paint evidence and its analysis.
5. Tools and techniques for analysis of different types of fibres.

Prerequisites: 12th

Co-requisites: Nil

UNIT I

Forensic Physics

Introduction, definition and scope, Density, refractive index, birefringence, and other optical properties of crystalline material, A brief idea of the electromagnetic spectrum, General idea of instruments used in forensic physics like microscopy, spectroscopy, densitometer, Vernier calliper, and screw gauge.

UNIT II

Glass

Types of glass and their composition, Matching and comparison of samples, Forensic examinations of glass fractures- rib marks, hackle marks, cone fracture, wavy, backward fragmentation, concentric, and radial fractures, Physical examination of glass-Colour, fluorescence, physical measurements, refractive index, density gradient, becke-line, specific gravity, and elemental analysis of glass evidence.

UNIT III

Soil

Types and composition of soil, sample preparation, removal of contaminants, colour, molecular particle size distribution, turbidity test, pH measurements, microscopic examination, density gradient analysis, ignition-loss test, elemental analysis, and interpretation of soil evidence.

UNIT IV

Cement & Paint

Basics of cement, types of cement, and analysis of cement, Physical & Chemical methods, Identification of adulterated cement, Mortar and concrete analysis.

Paint-Types and their compositions; cases involve the collection and preservation of paint evidence. Microscopic analysis of paint pigments, micro-chemical analysis, solubility tests, and chemical and instrumental analysis of paint evidence.

UNIT V

Fibre

Basic of fibre, Types of fibres, forensic aspects of fibre examination- fluorescence, optical properties, refractive index, birefringence, dye analysis, Physical fit and chemical testing of fibres samples, Difference between natural and man-made fibres, fibre comparison of dye and its ingredients.

Case Studies: Optional.
Project: Optional.

List of Practical

1. Preliminary examination of soil, glass, cement and paint evidence.
2. Analysis of paint and pigment by microscopic, chemical analysis.
3. To compare glass and soil samples by refractive index method.
4. Standard operating procedures for using Vernier-calliper Micrometre Screw Gauge.
5. Standard operating procedures for using a Travelling Microscope, Comparison Microscope
6. Standard operating procedure for using Abbe's Refractometer, Stereo Microscope.
7. Determination of refractive index of physical material.
8. Analysis of different types of fibres.

Course Outcomes

1. To understand key concepts in forensic physics, including density, refractive index, birefringence, and the use of various instruments.
2. To compare natural and synthetic fibres through forensic techniques, including optical properties, dye analysis, and physical and chemical testing.
3. To classify soil types, prepare samples, and perform tests such as microscopic examination, pH measurement, and elemental analysis

4. To analyze types and compositions of glass, identify fracture patterns, and perform physical and elemental examinations.
5. To analyze cement types, identify adulteration, and examine paint samples using microscopy, chemical tests, and instrumental methods.

Text Books

1. Henry C. Lee, Howard A. Harris Physical Evidence in Forensic Science
2. B.R. Sharma Forensic Science in Criminal Investigation & Trials
3. B.S. Nabar Forensic Science in Crime Investigation

References

1. Caddy, B; Forensic Examination of Glass and Paint Analysis and Interpretation,
2. CRC Press, New York,
3. Shaw, D; Physics in the Prevention and Detection of Crime, Contem Phys.
4. Saferstein, R; Forensic Science Handbook. Vol. I, II, (Edition), Prentice Hall, New
5. Jersey,
6. Working Procedure Manual; Physics BPR&D Publication,
7. Sharma, B.R; Forensic Science in Criminal Investigation and Trials (3Rd Edition.), Universal Law Publishing Co., New Delhi,
8. Working Procedure Manual- Physics, BPR&D Publication.

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http://www.ipu.ac.in

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1. https://swayam.gov.in/courses/public
2. http://nptel.ac.in/course.php
3. https://www.goodreads.com/book/show/779610.Introduction_to_Forensic_Science_and_Criminalistics

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Paper -V

Course Code	Courses	Hours Per week			Total	
		L	T	P	Hrs	Credit
FS3EG01	Computer Science	3	-	2	5	4

Course Objectives:

After studying this paper, the students will know

1. Understand the basics of computer hardware and how software interacts with it.
2. Analyse and evaluate different Number System.
3. Understand how computers represent and manipulate data
4. To understand the basics of C Programming language.
5. To understand the basics of Array and Function.

Prerequisites: 12th
Co-requisites: Nil

UNIT- I

Fundamentals of Computer System

Evolution of Computers and Computer Generations, Computer Classification, Processing speed of a computer, Functional units, and Components in Computer organization Computers block diagram, Memory addressing, capability of a CPU, length of a computer, Basic components of a Digital Computer - unit, ALU, IO Subsystem of a Computer, Bus structures Input Devices, Keyboard, Mouse Output Devices, CRT Monitors, LCD Displays, Touch Screen Displays, Print Devices, Multiprocessors, and Multi core Architecture

UNIT- II

Number System

Number systems decimal number system, Binary number system, octal number system, hexadecimal number system, 1's and 2's complement, Representation of Positive and Negative Numbers, Binary Fixed-Point Representation, Arithmetic operation on Binary numbers, Overflow and underflow Floating Point Representation, Codes, ASCII

UNIT- III

Computer Memory

Storing data and Program in Memory, Memory Hierarchy in a Computer, Internal Organization of Semiconductor Main Memory Chips, Semiconductor Memory RAM and ROM, Auxiliary Memory Peripheral Devices, Secondary Storage Memory, Magnetic Memories and Hard Disk Optical Disks and CD Memories.

UNIT –IV

Introduction to C programming language

Basics of programming Language: Character set, Identifier, Keywords, Constants, Data Types, variables, and declarations Operators and Expressions: Operator precedence and associativity, Expression Evaluation (Simple Examples), Input and output functions, Control Statements: Selection, Conditional Operator, Iteration (for, while, do-while), Branching (switch, break, continue, go to).

UNIT – V

Array and Function

Arrays and Strings: 1D and 2D arrays, Strings and basic operations on strings, Strings functions, and Programs on String Manipulation Functions: Definition, Calling Declaration, Parameter Passing (by value and by reference), recursion

Case Studies: Not applicable

Project: Optional.

List of Practical:

1. To study the components of computers
2. To study the network system in computers
3. To study different hardware in computers
4. To study different storage devices in computers
5. Write a program to print Hello World.
6. Write a program to take input from user and print the value of input
7. Write a C program for even or odd using for loop
8. Write a C program to print multiplication table using while loop and for loop
9. Write a C program to delete an element in an array
10. Write a C program to insert an element in an array

Course outcome

After the completion of the course, the student will be able

1. To understand the basic parts and function of computer.
2. To analyse and evaluate various number system.
3. To understand the functioning of computer memory and its applications.
4. To apply the basic concepts of C Programming language.
5. To apply the basic concepts of Array and Function.

Text books

1. Computer Fundamentals, B. Ram, New Age International Publishers
2. "Introduction to the Theory of Computation" by Michael Sipser.
3. "Computer Science: An Overview" by J. Glenn Brookshear.
4. "C Programming Language" by Brian W. Kernighan and Dennis M. Ritchie
5. "Expert C Programming: Deep C Secrets" by Peter van der Linden.

References

1. Rashid Sheikh, "Computer Organization and Architecture,"
2. William Stallings, "Computer Organization and Architecture", Pearson.
3. BARTEE, "Digital Computer Fundamentals," TMH Publication
4. MORRIS MANO, "Computer System Architecture," PHI
5. W. Hayes, Computer Architecture, McGraw-Hill

Web Source:

1. https://application.wiley-vch.de
2. www.researchgate.net
3. http://www.ipu.ac.in

Open Learning Source:

1. https://swayam.gov.in/courses/public
2. http://nptel.ac.in/course.php
3. https://www.goodreads.com/book/show/779610.Introduction_to_Forensic_Science_and_Criminalistics

मेडी-कैप्स विश्वविद्यालय, इंदौर

Medi-Caps University, Indore

Syllabus

Paper –IV

Course Code	Courses	Hours Per week			Total	
		L	T	P	Hrs	Credit
FS3AE04	Communication Skills	2	-	2	4	3

Course Objectives
After studying this paper, the students should know

Prerequisites: 12th
Co-requisites: Nil

UNIT I

Grammar and Vocabulary Development
Applied Grammar and usage: Parts of Speech, Tenses, Subject-Verb Agreement, Active and Passive Voice, Clauses, Modals, Reported Speech, common errors. Vocabulary: Synonyms, Antonyms, Homophones, One Word Substitution, Affixation: Prefixes & Suffixes, Correctly Spelt Words, Idioms, Proverbs, and Derivation from root words.

UNIT II

Developing Effective Communication Skills
Corporate Communication, Process, Characteristics and principles, Verbal and non-verbal communication, Barriers to effective communication, Importance of effective communication, Importance of Feedback in communication. Seven Cs of Communication.

UNIT III

Speaking Skills and Oral Presentation
Preparing for and conducting presentations, introducing yourself, use of formal expressions, Delivery using Audio – Visual Aids with stress on body language and voice modulations, audience research, objective of presentation, Assimilation of data and post presentation strategy.

UNIT IV

Developing Reading and Listening Skills

Reading Comprehension, Process, note-making, note - taking, SQ3R reading technique. Listening Skills: Meaning, process hearing and listening, types, barriers.

UNIT V

Developing Writing Skills

Précis, Paragraph writing, digital communication etiquettes. Business Letters: Parts & Layouts of Business Letters, writing job application and Resume, Calling/ Sending Quotations/ Orders/ Complaints and E-mails.

Case Studies: Optional.
Project: Optional.

Text Books:

1. P.C. Wren and Martin, High School English Grammar & Composition, , S Chand and Co Pvt Ltd.
2. S. Kumar and P. Lata, English for Effective Communication, Oxford UP, New Delhi.
3. J.S. Korlahalli and R. Pal, Essentials of Business Communication All Courses, Sultan Chand & Sons.

References Books

1. A.C. Gimson, An introduction to the Pronunciation of English, ELBS.
2. S. Greenbaum, The Oxford English Grammar, Oxford University Press.
3. K.Mohan and M. Raman, Effective English Communication, Tata Mc-Graw Hill.
4. A.J. Thompson and A. V. Martinet, A Practical English Grammar, Oxford UP, New Delhi.
5. U. S. Rai and S.M, Rai, Effective Communication, Himalaya Publishing House.

List of Practical's

1. Exercises on Grammar and vocabulary
2. Exercises based on reading and comprehension which also include taking notes during presentation.
3. Exercises based on listening which also include taking notes.
4. Writing technical description precis, business letters.
5. Presentations on various issues.
6. Presentations with Nonverbal communication.
7. Delivering speeches and exercising voice modulation transcription.
8. Performing extempore.
9. Role plays.
10. Group discussions.