



APPLIED MICROBIOLOGY AND FORENSIC SCIENCE

PROGRAMME SPECIFIC OUTCOME

- PSO1:** : Understand the basic concepts and applications of Microbiology in various sectors viz, General, Agricultural, Industrial, Medical, Food and Dairy fields.
- PSO2:** Understands the basic concepts of Forensic Science, Indian Judiciary system, and crime investigation techniques.
- PSO3:** Perform practical experiments in the area of Microbiology and Forensic Science in an interdisciplinary manner.
- PSO4:** Develop productive and socially relevant solutions to forensic and microbiological problems of the society through research oriented student academic projects

COURSE OUTCOME

SJSD1MB1: APPLIED MICROBIOLOGY AND FORENSIC SCIENCE

SJSD1MB1. 1	To evaluate history of Microbiology
SJSD1MB1. 2	To understand basic features of microorganisms using microscopic techniques
SJSD1MB1. 3	To analyse the principles of sterilisation techniques
SJSD1MB1. 4	To evaluate the ultrastructural properties of microbe
SJSD1MB1. 5	To analyse the nutritional requirements of microbes
SJSD1MB1. 6	To evaluate the growth patterns of microbes
SJSD1MB1. 7	To evaluate the modes of reproduction of microbes
SJSD1MB1. 8	Evaluate the concepts of microbial taxonomy

SJSDC1FSC1: FUNDAMENTALS OF FORENSIC SCIENCE AND CRIMINAL ACTS

SJSDC1FSC1.1	Evaluate the fundamental principles of forensic science
SJSDC1FSC1.2	To evaluate criminal justice system
SJSDC1FSC1.3	Evaluate various forensic science institutions
SJSDC1FSC1.4	To understand Indian Constitution
SJSDC1FSC1.5	To evaluate Criminal Major Acts
SJSDC1FSC1.6	understand Criminal Minor Acts

SJSDC1MB2(P) : PRACTICAL RELATED TO GENERAL MICROBIOLOGY, PHYSIOLOGY

SJSDC1MB2(P).1	To evaluate different microbial staining techniques
SJSDC1MB2(P).2	To analyse various culturing techniques of microbe
SJSDC1MB2(P).3	To evaluate the microbial growth
SJSDC1MB2(P).4	To biochemically characterise microbes

SJSDC1FSC2(P) PRACTICALS RELATED TO FORENSIC SCIENCE I (1.5)

SJSDC1FSC2(P).1	To analyse various crime cases from Forensic Science perspectives
SJSDC1FSC2(P).2	To analyse various Forensic Science establishment
SJSDC1FSC2(P).3	To study cases in which Criminal Major Acts were invoked
SJSDC1FSC2(P).4	To analyse cases in which Criminal Minor Acts were invoked

SJSDC2MB3 : ENVIRONMENTAL & INDUSTRIAL MICROBIOLOGY

- SJSDC2MB3.1 Evaluate the significance of microbes in soil, air, water environments
- SJSDC2MB3.2 To analyse the various concepts of waste management
- SJSDC2MB3.3 To verify the bioremediatory role of microbes
- SJSDC2MB3.4 Evaluate the basic principles of Fermentation Technology
- SJSDC2MB3.5 To analyse the industrial significance of microbes
- SJSDC2MB3.6 To understand the different concepts of intellectual property rights

SJSDC2FSC3: CRIMINOLOGY, PENOLOGY, VICTIMOLOGY, FORENSIC PSYCHOLOGY & INSTRUMENTATION TECHNIQUES

- SJSDC2FSC3.1 Evaluate the basic principles of criminology, penology, victimology
- SJSDC2FSC3.2 Understand the biological psychological perspectives in criminal behavior
- SJSDC2FSC3.3 Evaluate the significance of psychology in forensic investigations
- SJSDC2FSC3.4 Understand Statistics
- SJSDC2FSC3.5 Evaluate the principles of forensic instrumentation
- SJSDC2FSC3.6 Evaluate Fundamental Principles of Microscopy

SJSDC2MB4 (P): PRACTICALS ON ENVIRONMENTAL, INDUSTRIAL MICROBIOLOGY & INSTRUMENTATION TECHNIQUES

- SJSDC2MB4(P).1 To analyse various cell disruption techniques
- SJSDC2MB4(P).2 To evaluate modes of fermentation techniques
- SJSDC2MB4(P).3 To evaluate the microbial production of industrially relevant products
- SJSDC2MB4(P).4 To apply the concepts of various analytic instruments in practise

SJSDC2MB/FSC (PR1) :MINI PROJECT

- SJSDC2MB/FSC (PR1).1 Evaluate and conduct internship and project in the field of forensic science OR Microbiology
- SJSDC2MB/FSC (PR1).2 Acquiring Independent research skills
- SJSDC2MB/FSC (PR1).3 Create and develop problem solving, critical thinking and decision making skills

SJSDC3MB5 :FOOD, DAIRY & AGRICULTURAL MICROBIOLOGY

- SJSDC3MB5.1 Evaluate the contributory role of microbes in food science & dairy science
- SJSDC3MB5.2 To analyse the various principles of food spoilage & poisoning
- SJSDC3MB5.3 To evaluate the various food preservation techniques
- SJSDC3MB5.4 Evaluate the basics of agricultural Microbiology
- SJSDC3MB5.5 To analyse the different types of biological interactions
- SJSDC3MB5.6 To evaluate the concepts of plant pathology
- SJSDC3MB5.7 To analyse the microbial applications in agriculture

SJSDC3 FSC4 : FORENSIC CHEMISTRY & TOXICOLOGY

- SJSDC3FSC4.1 Evaluate the principle and significance of forensic chemistry
- SJSDC3FSC4.2 Evaluate the role of toxicology in forensics
- SJSDC3FSC4.3 Awareness on Narcotics, Drugs and Psychotropic substance

SJSDC3MB6(P) : PRACTICAL ON FOOD, DAIRY & AGRICULTURAL MICROBIOLOGY (3.4)

- SJSDC3MB6(P).1 To analyse the role of microbes in soil & environment
- SJSDC3MB6(P).2 To analyse the role of microbes in Dairy products
- SJSDC3MB6(P).3 To evaluate the role nitrogen fixing microbes
- SJSDC3MB6(P).4 To analyse plant diseases

SJSDC3FSC5 (P) : PRACTICAL ON FORENSIC SCIENCE II (2.5, 3.5)

- SJSDC3FSC5(P).1 Evaluate Crime Cases which explains the criminal behavior
- SJSDC3FSC5(P).2 Evaluate Victimology
- SJSDC3FSC5(P).3 Evaluate Penology
- SJSDC3FSC5(P).4 Familiarize the technique of data representation
- SJSDC3FSC5(P).5 Quantitative & Qualitative analysis of Forensic exhibits

SJSDC4 FSC6 : FORENSIC PHYSICS, BALLISTICS , DERMATOGLYPHICS & QUESTIONED DOCUMENTS

- SJSDC4FSC6.1 Evaluate the scope of Forensic Physics
- SJSDC4FSC6.2 Understand the destructive and non- destructive analytical method
- SJSDC4FSC6.3 Understand the basic principles of Forensic Ballistics
- SJSDC4FSC6.4 Familiarize the basics of dermatoglyphics
- SJSDC4FSC6.5 To study the scope of questioned documents
- SJSDC4FSC6.6 To study the scope of questioned documents

SJSDC4MB7: MEDICAL MICROBIOLOGY AND IMMUNOLOGY

- SJSDC4MB7.1 To analyse the various principles of Medical Microbiology
- SJSDC4MB7.2 To understand the diagnosis & prevention of bacterial diseases.
- SJSDC4MB7.3 To understand the diagnosis & prevention of viral & fungal diseases
- SJSDC4MB7.4 To understand the diagnosis & prevention of protozoan diseases
- SJSDC4MB7.5 To analyse the principles of Immunoprophylaxis
- SJSDC4MB7.6 To evaluate the principles of Immunology
- SJSDC4MB7.7 To evaluate the principles of hypersensitivity and autoimmune diseases

SJSDC4MB/FSC (PR2): MINI PROJECT

- SJSDC4MB/FSC(PR2).1 Evaluate and conduct internship and project in the field of forensic science or Microbiology
- SJSDC4MB/FSC(PR2).2 Acquiring Independent research skills
- SJSDC4MB/FSC(PR2).3 Create and develop problem solving, critical thinking and decision making skills

SJGEC5MB13: MOLECULAR BIOLOGY AND BIOINFORMATICS

- SJGEC5MB13.1 Evaluate the basic principles of Molecular Biology
- SJGEC5MB13.2 To evaluate the structural features of DNA & associated mutations
- SJGEC5MB13.3 Evaluate the principles of Central
- SJGEC5MB13.4 Dogma of Life
- SJGEC5MB13.5 Understand the basic principles of Bioinformatic tools

SJGEC5MB14: MICROBIAL GENETICS & GENETIC ENGINEERING

- SJGEC5MB14.1 To understand the basic principles of genetics & mutations
- SJGEC5MB14.2 To analyse the basic concepts of gene transfer
- SJGEC5MB14.3 To evaluate the basic steps of recombinant DNA technology
- SJGEC5MB14.4 To understand the basic principles of DNA analysis

SJSDC5 FSC7 : FORENSIC BIOLOGY, SEROLOGY & MEDICINE

- SJSDC5FSC7.1 Evaluate significance of biological evidence in forensics
- SJSDC5FSC7.2 Evaluate the significance of serological evidence in forensics
- SJSDC5FSC7.3 Understand the insects of forensic importance

- SJSDC5FSC7.4 Familiarize forensically important plants
- SJSDC5FSC7.5 Evaluate significance of wildlife forensics
- SJSDC5FSC7.6 Evaluate the fundamental aspects and scope of forensic medicine

SJSDC5FSC8: CRIME INVESTIGATION TECHNIQUES & TECHNIQUES IN PERSONAL IDENTIFICATION

- SJSDC5FSC8.1 Evaluate the various principles of crime investigation techniques
- SJSDC5FSC8.2 To Evaluate various tools & techniques in crime investigation
- SJSDC5FSC8.3 Understand the legal and ethical issues in forensic science
- SJSDC5FSC8.4 Understand the crime scene reconstruction techniques
- SJSDC5FSC8.5 Evaluate the various person identification techniques

SJSDC5FSC9 : CYBER CRIME & CYBER FORENSICS

- SJSDC5FSC9.1 Understand the fundamentals of computer hardware and software
- SJSDC5FSC9.2 Evaluate differences between computer crimes and conventional crimes
- SJSDC5FSC9.3 Evaluate the principles and techniques to prevent cybercrimes
- SJSDC5FSC9.4 Analyse the legal and privacy issues in computer forensic investigations

SJSDC5MB8 (P): PRACTICAL ON MICROBIOLOGY (4.5,5.2)

- SJSDC5MB8 (P).1 To understand the basis of cell biology
- SJSDC5MB8 (P).2 To understand the concepts of molecular biology
- SJSDC5MB8 (P).3 To evaluate the tests of medical microbiology
- SJSDC5MB8 (P).4 To understand the forensic significance of human skeletal system

SJSDC5FSC10(P): PRACTICAL ON FORENSIC SCIENCE III (4.4, 5.3,5.4, 5.5)

- SJSDC5FSC10(P).1 Study the destructive and non- destructive analytical method
- SJSDC5FSC10(P).2 Examine the basics of dermatoglyphics and questioned documents
- SJSDC5FSC10(P).3 Understand significance of forensic biology and serology
- SJSDC5FSC10(P).4 Design protocols for crime scene investigation
- SJSDC5FSC10(P).5 Evaluate advanced techniques in personal identification
- SJSDC5FSC10(P).6 Acquire knowledge in cyber forensics
- SJSDC5FSC10(P).7 Create an awareness on computer forensics related softwares

SDC6MB/FSC (PR): COURSE NAME: INTERNSHIP AND PROJECT

SDC6MB/FSC(PR).1 To develop a research aptitude in students

SDC6MB/FSC(PR).2 To evaluate a scientific problem and find a solution to it

SDC6MB/FSC(PR).3 To develop technical skills related to the industry