



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

Accredited "A" Grade by NAAC | 12B Status by UGC | Approved by AICTE

www.sathyabama.ac.in

02-08-2020

STUDENT'S CIRCULAR

This is to inform that Department of Biomedical Engineering is offering Open Elective Courses listed below for the Batch 2017-2021 (IV year) during the academic year 2020-2021 ODD Semester.

1. Medical Laser & Fibre optics
2. Drug Delivery Systems
3. Biomems & Nanotechnology
4. Forensic Science
5. Theory of robotics

Students are requested to register their names with respective year coordinators before the end date of registration (10-08-2020).

HOD/BIO MEDICAL

Dr. T. SUDHAKAR

DEPARTMENT OF BIOMEDICAL ENGINEERING
SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Jagadalar Nagar, Rajiv Gandhi Salai
Chennai - 600 079

Copy to:

1. Dean (Staff Affairs)
2. Dean (Student Affairs)
3. Deans of Schools
4. All HODs
5. III & IV Year UG and all PG class rooms (School of Electronics & Electrical, and Bio and chemical Engineering)

SBM1602	MEDICAL OPTICS & LASER APPLICATIONS	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVE

To enable the student to understand the basics of tissue properties, instrumentation principles in medical optics and the the therapeutic applications thereof

UNIT 1 OPTICAL PROPERTIES OF THE TISSUES

9 Hrs.

Refraction, Scattering, Absorption, Light transport inside the tissue, Tissue properties, Laser Characteristics as applied to medicine and biology-Laser tissue Interaction-Chemical-Thermal Electromechanical – Photoablativ processes.

UNIT 2 INSTRUMENTATION IN PHOTONICS

9 Hrs.

Instrumentation for absorption, Scattering and emission measurements, excitation light sources – high pressure arc lamp, LEDs, Lasers, Optical filters, - optical detectors – Time resolved and phase resolved detectors.

UNIT 3 SURGICAL APPLICATIONS OF LASERS

9 Hrs.

Lasers in ophthalmology- Dermatology – Types of lasers used in dermatology – Dentistry- Types of Dental lasers - Urology – Surgical therapy in urology - Otolaryngology - Tissue welding – Specifications

UNIT 4 NON THERMAL DIAGNOSTIC APPLICATIONS

9 Hrs.

Optical coherence tomography, Elastography, Laser Induced Fluorescence (LIF)-Imaging, FLIM Raman Spectroscopy and Imaging, FLIM – Holographic and speckle application of lasers in biology and medicine.

UNIT 5 THERAPEUTIC APPLICATIONS

9 Hrs.

Phototherapy, Photodynamic therapy (PDT) - Principle and mechanism - Oncological and nononcological applications of PDT - Biostimulation effect – applications-Laser Safety Procedures.

Max. 45 Hours

Course Outcomes:

At the end of the course, the student should be able to:

CO1: Understand the basic concepts of optical properties and their interaction with tissues.

CO2: Discuss about the instrumentation and detectors involved in photonics.

CO3: Acquire knowledge about various kinds of lasers used in medicine.

CO4: Analyse the application of lasers in diagnosis.

CO5: Explore the laser techniques in therapy

CO6: Identify the use of lasers that can be used for specific medical applications.

TEXT / REFERENCE BOOKS

- 1.Leon Goldman, M.D., & R.James Rockwell, Jr., Lasers in Medicine, Gordon and Breach Science Publishers Inc., 1975.
- 2.Abraham Katzir, Lasers and Optical Fibers in Medicine, Academic Press Edition,1998.
- 3.Tuan Vo Dirh, Biomedical Photonics – Handbook, CRC Press, Bocaraton, 2003.
- 4.Glasser, O., Medical Physics -- Vol 1, 2, 3 Adam Hilgar Brustol Inc, 1987.
- 5.G.David Baxter, Therapeutic Lasers – Theory and practice, Churchill Livingstone Publications Edition-2001.

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks : 80

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each - No choice

20 Marks

PART B : 2 questions from each unit of internal choice; each carrying 12 marks

60 Marks

DEPARTMENT OF BIOMEDICAL ENGINEERING

BATCH: 2017-2021

COURSE NAME: MEDICAL OPTICS AND LASER APPLICATIONS

COURSE CODE: SBM1602

ELECTIVE - 1

S. No	ROLL NO	REG NO	Name of the Student
1	17SBM501	37240001	AHAMED NIZAMUDDIN M S
2	17SBM801	37240003	AJIN R
3	17SBM503	37240004	AKSHAYA P C
4	17SBM001	37240005	ANGELINE J
5	17SBM539	37240006	ANTONY FATHIMA SHINY J
6	17SBM002	37240010	ARAVINDHAN G
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51	17SBM824	37240079	NIVEDHA.S
52	17SBM825	37240080	SOFICA.B

SBM1610	DRUG DELIVERY SYSTEMS	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVE

To educate the student on drug delivery system which would enable a comprehensive analysis and give direction of these drug delivery systems as an important tool in improving the efficacy and safety of the release of drugs in the body and explores the present and future strategies within the drug delivery market.

UNIT 1 SUSTAINED AND CONTROLLED DRUG DELIVERY

9 Hrs.

Introduction, properties of drugs, Pharmacokinetic properties of drugs, sustained release formulations – concept, physicochemical biological properties of drugs, advantages and disadvantages – controlled drug delivery systems – automatically controlled drug delivery systems and their biomedical applications.

UNIT 2 POLYMERS & TARGETTED DRUG DELIVERY SYSTEMS

9 Hrs

Polymers used in drug delivery systems – modules, classification, characterization, advantages and disadvantages of polymer, targeted drug delivery systems – concepts – nanoparticles – liposomes, microspheres – hydrogels

UNIT 3 TRANSDERMAL DRUG DELIVERY SYSTEMS

9 Hrs.

Transdermal penetration of drugs – formulation – addition – polymers in transdermal drug delivery system – iontophoresis – transdermal controlled release products and devices

UNIT 4 IMPLANTABLE DRUG DELIVERY SYSTEMS

9 Hrs.

Implantable micro – pump systems – peristaltic micro pump – osmotic micro pump - diaphragm micro pump – Fluorocarbon propellant driven micro pump – solenoid driver reciprocate micro pump – programmable implanted drug administrative device (DAD)

UNIT 5 SITE SPECIFIC DRUG DELIVERY SYSTEMS

9 Hrs.

Development in insulin therapy using biomedical controlled drug delivery systems – drug delivery using monoclonal antibodies – role of biosensors and transducers in diagnostic

Max. 45 Hours

Course Outcomes:

At the end of the course, the student should be able to:

CO1: Critically evaluate the design of drug delivery systems for various routes of administration.

CO2: Critically evaluate selected techniques used in the development of drug delivery systems.

CO3: Discuss current trends in drug targeting, biotechnology products and modified release drug delivery

CO4: Identify and resolve technological and documented problems associated with the development of drug delivery systems.

CO5: interpretes effectively in groups and to communicate scientific results in written reports.

CO6: Formulates industrially feasible, cost effective strategy for development of new dosage forms

TEXT / REFERENCE BOOKS

- 1.Vyas S. P. Khar R K Targetted and controlled drug delivery Novel Carrier System CBSPD, 2006.
2. Anya M Hillery et al Drug delivery and targeting CRC press, 2000
3. Robinson R Robinson Conventional drug delivery systems CRC press, 2004

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks : 80

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each - No choice

20 Marks

PART B : 2 questions from each unit of internal choice; each carrying 12 marks

60 Marks

DEPARTMENT OF BIOMEDICAL ENGINEERING

BATCH: 2017-2021

COURSE NAME: DRUG DELIVERY SYSTEMS

COURSE CODE: SBM1602

ELECTIVE 2

S. No	ROLL NO	REG NO	Name of the Student
1	17SBM502	37240002	AISHWARJA J
2	17SBM802	37240007	ANUMOLU VENKATA SIVA SANKAR
3	17SBM822	37240008	ANUPRIYA SONI
4	17SBM508	37240015	BANDARU SAIMANIDEEP
5	17SBM520	37240044	KAVITHA LAKSHMI J
6	17SBM544	37240049	MAHESH KUMAR S
7	17SBM531	37240072	SOUNDHARYA B
8	17SBM826	37240081	GOMATHI BALA.M. K

SBM1606	BIOMEMS AND NANOTECHNOLOGY	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVE

To enable the student to acquire adequate knowledge on micro mechanical devices and their applications in drug delivery and nanotechnology.

UNIT 1 INTRODUCTION

9 Hrs.

MEMS – definition. Origin of MEMS – Types – Materials used and their properties. MEMS Technology. Applications in health care. Integrated MEMS and microsystem.

UNIT 2 PROCESSING: MICRO MACHINING TECHNOLOGY

9 Hrs.

Lithography- etching- Ion implantation- wafer bonding- Integrated processing- Bulk micro machining- surface micro machining- coating technology and CVD-LIGA process.

UNIT 3 MICROSYSTEMS AND MICROFLUIDS

9 Hrs.

General principles- Microsensors – Actuators- Electrostatic forces- Piezoelectric crystals – Intelligent materials and structures. Fundamentals of micro fluids, lab – on – a chip devices - Silicon and glass micromachining for micro total analysis systems. Surface chemistry in polymer microfluidic systems.

UNIT 4 APPLICATION IN MEDICINE

9 Hrs.

Trends in MEMS for health care. Drug delivery systems - Biochip – Micro needles- Microelectrodes- Neural prosthesis – shape memory implants.

UNIT 5 BIOMEDICAL NANOTECHNOLOGY

9 Hrs.

Nanotechnology- Medical applications of Nanotechnology- Drug synthesis and delivery- Nanofabrication methods – Nanomaterials in human body- Toxicity in nanomaterials.

Max. 45 Hours

Course Outcomes:

At the end of the course, the student should be able to:

CO1: Understand the main issues stemming from operating in micro and nanolength scales

CO2: Learn how to effectively utilize the available tools and procedures to analyze and design micro/nano-scale engineering systems

CO3: Understand basic principles, tools and future directions of micro/nanotechnology

CO4: Demonstrate professionalism in interactions with team members, colleagues, faculty, and staff

CO5: Identify the application of nanoscience and nanotechnology, including theory and experiment

CO6: Analyse to critique journal papers on nanoscience/nanotechnology

TEXT / REFERENCE BOOKS

Tai-Ran Hsu, MEMS & Microsystem, Design and manufacture, Mc. Graw Hill 2002.

Malsch, NeelinaH., ed., Biomedical Nanotechnology, Washington, DC: CRC Press, 2005

Marc J. Madou, Fundamentals of Microfabrication and Nanotechnology, 3rd Edition, Three-Volume Set, CRC Press 2011.

Mohamed Gad-el-Hak, The MEMS Handbook, CRC Press, 2005

HocineYahia, Shape Memory Implants Springer Verlag 2000.

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks : 80

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each - No choice

20 Marks

PART B : 2 questions from each unit of internal choice; each carrying 12 marks

60 Marks

DEPARTMENT OF BIOMEDICAL ENGINEERING

BATCH: 2017-2021

**COURSE NAME: BIOMEMS AND
NANOTECHNOLOGY**

COURSE CODE: SBM1606

ELECTIVE

S. No	ROLL NO	REG NO	Name of the Student
1	17SBM501	37240001	AHAMED NIZAMUDDIN M S
2	17SBM502	37240002	AISHWARJA J
3	17SBM801	37240003	AJIN R
4	17SBM503	37240004	AKSHAYA P C
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21-01-2021

STUDENT'S CIRCULAR

This is to inform that Department of Biomedical Engineering is offering Open Elective Courses listed below for the Batches 2018 / 2019 during the academic year 2020-2021 EVEN Semester.

1. Medical Waste Management
2. Hospital Management
3. Drug Delivery Systems
4. Forensic Science

Students are requested to register their names with respective year coordinators before the end date of registration (31-01-2021).

HOD/BIOMEDICAL

Dr. T. SUDHAKAR

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5. III & IV Year UG and all PG class rooms (School of Electronics & Electrical, and Bio and chemical Engineering)

SBM1608	MEDICAL WASTE MANAGEMENT	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVE

The study would ensure safe practices and proper management of medical waste, in order to safeguard the patient, health care, community and the environment.

UNIT 1 INTRODUCTION & WASTE SEGREGATION

9 Hrs.

General Introduction, Definition of Biomedical Waste, General and Hazardous health care waste – Colour Coding and types of containers for disposal of medical waste, Segregation, Collection & Disposal.

UNIT 2 TYPES OF BIOMEDICAL WASTE

9 Hrs.

Infectious waste, Genotoxic waste, Waste Sharps – Categories, Categorization and composition of Biomedical waste. Liquid Biomedical Waste - Radioactive wastes, Metals, Chemicals & drugs

UNIT 3 HOSPITAL GENERATED WASTE

9 Hrs.

Human Blood and Blood Products, pathological wastes, Contaminated sharps, Contaminated animal carcasses, body parts, and bedding Basic information about infection, Infectious agents on organizations spread of infection, Basic information about Hospital acquired infection.

UNIT 4 TYPES OF WASTE DISPOSAL

9 Hrs.

Disinfections unit container for Autoclaving, Sharp waste containers for storage & transportation, autoclaving, Incineration, Plasma Pyrolysis /Gasification systems, Composting.

UNIT 5 BIOETHICS AND RECENT TRENDS

9 Hrs.

Modern Technology for handling Biomedical Wastes – Monitoring & Controlling of Cross Infections, Protective Devices – Bioethics and Handling of Waste Management.

Max. 45 Hours

Course Outcomes:

At the end of the course, the student should be able to:

CO1: Understand the importance colour coding for waste segregation and collection

CO2: Attain the adequate knowledge about types of biomedical waste and the severity of hazardousness

CO3: Understand the amount of waste generated in hospital and quantify for discard

CO4: Demonstrate the types of waste disposal and its process to dispose

CO5: Learn about modern technology and protective devices for handling biomedical waste

CO6: Outline the methods of bioethics and environment safety.

TEXT / REFERENCE BOOKS

- 1.V. J. Landrum, Medical Waste Management and disposal, Elsevier, 1991, ISBN: 978-0-8155-1264-6
- 2.S A Tabish, Principles of Hospital Management, OUP, Jaypee Publishers.6th Edition 2000.
3. S L Goel, Dr. R. Kumar, Encyclopedia of Hospital Management - Text and Case Studies Hospitals in Community Health Care, ISBN(Hardbound): 8184502273, 9788184502275. 2010.
4. J. Glyn Hendry & Gary W Heinke, Environmental Science and Engineering, Prentice Hall India, 2004
5. Shyam Divan, Environmental law and policy in India, Oxford India Press, 2004.
6. Charles A Wentz, Hazardous Waste Management, McGraw Hill Inc, Newyork, 1995

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks : 80

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each - No choice

20 Marks

PART B : 2 questions from each unit of internal choice; each carrying 12 marks

60 Marks

DEPARTMENT OF BIOMEDICAL ENGINEERING

BATCH: 2017-2021

COURSE NAME: MEDICAL WASTE MANAGEMENT

COURSE CODE: SBM1608

ELECTIVE - 1

S. No	ROLL NO	REG NO	Name of the Student
1	17SBM501	37240001	AHAMED NIZAMUDDIN M S
2	17SBM502	37240002	AISHWARJA J
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CO1: Critically evaluate the design of drug delivery systems for various routes of administration.

CO2: Critically evaluate selected techniques used in the development of drug delivery systems.

CO3: Discuss current trends in drug targeting, biotechnology products and modified release drug delivery **CO4:** Identify and resolve technological and documented problems associated with the development of drug delivery systems.

CO5: Interpret effectively in groups and to communicate scientific results in written reports.

CO6: Formulates industrially feasible, cost effective strategy for development of new dosage forms

TEXT / REFERENCE BOOKS

1. Vyas S. P. Khar R K Targeted and controlled drug delivery Novel Carrier System CBSPD, 2006.
2. Anya M Hillery et al Drug delivery and targeting CRC press, 2000
3. Robinson R Robinson Conventional drug delivery systems CRC press, 2004

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks : 80

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each - No choice

20 Marks

PART B : 2 questions from each unit of internal choice; each carrying 12 marks

60 Marks

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF BIOMEDICAL ENGINEERING
BATCH 2018-2022
SBM1610 - DRUG DELIVERY SYSTEM – ELECTIVE 1

S. NO	REG NO	NAME	SUBJECT CODE	SUBJECT NAME
1	38240001	ABHISHEK. S	SBM1610	DRUG DELIVERY SYSTEM
2	38240003	AJAY. R	SBM1610	DRUG DELIVERY SYSTEM
3	38240004	AKSHYA. V	SBM1610	DRUG DELIVERY SYSTEM
4	38240006	AVIGNA SAI	SBM1610	DRUG DELIVERY SYSTEM
5	38240009	HEMAPRAKASH. V. K	SBM1610	DRUG DELIVERY SYSTEM
6	38240014	MARILYN RIJA. W	SBM1610	DRUG DELIVERY SYSTEM
7	38240015	MERCY. S	SBM1610	DRUG DELIVERY SYSTEM
8	38240019	NANDHA KUMAR. P	SBM1610	DRUG DELIVERY SYSTEM
9	38240022	PARTHA SARATHY. S	SBM1610	DRUG DELIVERY SYSTEM
10	38240023	PAVITHRA. G. S	SBM1610	DRUG DELIVERY SYSTEM
11	38240024	POOJASAKTHI. S	SBM1610	DRUG DELIVERY SYSTEM
12	38240026	RAHUL NANDY MAJUMDAR	SBM1610	DRUG DELIVERY SYSTEM
13	38240027	RAMACHANDRAN. K. S	SBM1610	DRUG DELIVERY SYSTEM
14	38240033	SHAMRUTHI. T	SBM1610	DRUG DELIVERY SYSTEM
15	38240035	SINDESH. C. S	SBM1610	DRUG DELIVERY SYSTEM
16	38240039	SUNDAR. T	SBM1610	DRUG DELIVERY SYSTEM
17	38240040	VASANTH KUMAR.S	SBM1610	DRUG DELIVERY SYSTEM
18	38240041	VASUNDARA. J	SBM1610	DRUG DELIVERY SYSTEM
19	38240042	VUKKA LAKSHMIDHAR	SBM1610	DRUG DELIVERY SYSTEM
20	38240043	HARISH. T.S	SBM1610	DRUG DELIVERY SYSTEM

SBM1609	FORENSIC SCIENCE	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVE

The syllabus is designed to provide a brief and basic knowledge to understand the forensic science particularly to the biomedical student. The main aim is to provide reasonable coverage of subject to know the basic concepts of the science so that the student can implement their knowledge in higher studies.

UNIT 1 ANIMAL CELL STRUCTURE

9 Hrs.

Cell and its inclusions – structure and function – types of cells: Blood & Body fluids – forensic significance – morphological identification of bones – forensic importance.

UNIT 2 BLOTTING TECHNIQUES

9 Hrs.

Identification of Human remains – methods of reconstruction – personal identity in the living and the dead – DNA fingerprinting – PCR - Blotting types (Southern, Northern and Western)

UNIT 3 FINGERPRINTS

9 Hrs.

FingerPrints – importance of plastic and visible finger prints – transfer methods of finger prints – fingerprint patterns – their classification – ridge characteristics – foot prints – importance – gait patterns and their characteristics – photography of foot prints – sunken and surface foot prints.

UNIT 4 TOXINS

9 Hrs.

Forensic toxicology – poison and drugs, classifications, Source, nature, Actions and diagnosis of poisoning cases, postmortem findings and examination, treatment of poisoning cases, medico legal aspects; corrosive agents, irritants – mechanical and animal.

UNIT 5 SEROLOGICAL AND CHROMOSOMAL TECHNIQUES

9 Hrs.

Serology – basic principles of serology – concept of antigen and antibody and their reaction – application of serology in forensic science. Karyotyping – banding patterns - chromosomal abnormalities – sex determination – sex linked inheritance.

Max. 45 Hours

Course Outcomes:

At the end of the course, the student should be able to:

CO1: Gain the basic knowledge about forensic importance human cell and body fluids.

CO2: Understand the molecular characterization of DNA for the identification of human beings.

CO3: Recognize the forensic importance of finger print and foot print for legal proceedings.

CO4: Demonstrate information about medico legal aspects of different types of poisoning cases.

CO5: Familiarity to identify unnatural causes of death based on immunological techniques.

CO6: Employ karyotyping technique to identify chromosomal abnormality.

TEXT / REFERENCE BOOKS

1. De Robertis, General Cytology, Saunders, 6th Edition, 2008
2. Apurba Nandy, Principles of Forensic Medicine, New Central Book Agency, 2nd Edition, 2001
3. M. Krawczak and J. Schmidtke, DNA Finger printing, BIOS Scientific Publisher, 2nd Edition, 1995
4. Richard Saferstein Ed, Forensic Science Hand Book, Prentice Hall, 2010
5. P L Carpenter, Immunology and Serology, W B Saunders Company, 2nd Edition, 1965
6. David Friedfielder, Molecular Biology, Narosa, 4th Edition, 1995
7. Narayan Reddy, The Essential of Forensic Medicine and Toxicology, 31st Edition, 2012.

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks : 80

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each - No choice

20 Marks

PART B : 2 questions from each unit of internal choice; each carrying 12 marks

60 Marks

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF BIOMEDICAL ENGINEERING

BATCH 2018 - 2022

SBM1609 - FORENSIC SCIENCE – ELECTIVE 2

S. NO	REG NO	NAME	SUBJECT CODE	SUBJECT NAME
1	38240002	AFIF. A.S	SBM1609	FORENSIC SCIENCE
2	38240005	ANEESHWAR. M	SBM1609	FORENSIC SCIENCE
3	38240007	BLESSY. N. S	SBM1609	FORENSIC SCIENCE
4	38240011	JINU JACOB. Y	SBM1609	FORENSIC SCIENCE
5	38240012	KANIMOZHI. K	SBM1609	FORENSIC SCIENCE
6	38240013	KAVITHA. E	SBM1609	FORENSIC SCIENCE
7	38240017	MOHAMED BASHIM	SBM1609	FORENSIC SCIENCE
8	38240018	MONICA. P	SBM1609	FORENSIC SCIENCE
9	38240020	NISITHA. S	SBM1609	FORENSIC SCIENCE
10	38240021	NIVETHA. J	SBM1609	FORENSIC SCIENCE
11	38240025	RAGHAVI. T	SBM1609	FORENSIC SCIENCE
12	38240028	RENUKA. S	SBM1609	FORENSIC SCIENCE
13	38240029	SAHEER ANAS	SBM1609	FORENSIC SCIENCE
14	38240030	SANDRA ANN. R	SBM1609	FORENSIC SCIENCE
15	38240032	SANTRA. E	SBM1609	FORENSIC SCIENCE
16	38240034	SHARON BENETTA. W	SBM1609	FORENSIC SCIENCE
17	38240036	SIVAGAMI. K	SBM1609	FORENSIC SCIENCE
18	38240037	SNEGA. V	SBM1609	FORENSIC SCIENCE
19	38240038	STEPHIN BRITTO. A	SBM1609	FORENSIC SCIENCE

SBMA3009	HOSPITAL MANAGEMENT	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVES

- The paper provides opportunities for training and research in all aspects of hospital / health administration. It helps to promote scientific management of hospital and advancement of health care systems so as to make it rational, responsive and cost efficient.
- The student is thus educated in the development of high quality of hospital care in the community and the country so as to provide a satisfactory environment to the patient and clinical research

UNIT 1 STANDARD OF HOSPITAL 9 Hrs

Concept of Hospital Management - Role of Administrator - Responsibilities of Administrator - Hospital Design
- Outlines for establishing Departmental Zones - Hospital Engineering

UNIT 2 HOSPITAL ORGANIZATION 9-Hrs.

Organization of Out-Patient Services - Problems encountered in functioning of O.P Department - Organization of In-Patient Services - Casualty & Emergency Services - Organization and management of Operation theatres

UNIT 3 SERVICES IN HOSPITAL 9 Hrs

Organization of Ancillary Services: Lab Services - Department of Physiotherapy & Occupational Therapy -
Organization of Blood Transfusion Services - Department of Radio - diagnosis - Hospital Pharmacy

UNIT 4 STERILIZATION AND HOSPITAL SAFETY 9 Hrs

Disease transmission, Sterilization and disinfection methods, Hospital safety - Radiation Safety, hazardous safety, safety disposal of biological waste - Maintenance of Equipments & Instruments.

UNIT 5 SUPPORTIVE SERVICES IN HOSPITAL 9 Hrs

Organization and management of Nursing services and Dietary Services in hospital - House-keeping and maintenance - Medical Records - Staffing the hospital - Human resources management in hospital - Management Assisted by Computers: Reservation, Admission, Registration & Discharge Module

Max. 45 Hours

Course Outcomes:

At the end of the course, the student should be able to:

- CO1: Understands the principles of Hospital administration.
CO2: Outline the problem encountered during outpatient and inpatient services.
CO3: Recognize the importance of ancillary services in healthcare based upon the patient's perceived need
CO4: Demonstrate the types of waste disposal and its process to dispose
CO5: explains the safety procedures followed for hospitals equipment and precautionary about disease transmission.
CO6: Identify the importance of Human resource management in organizing the hospital

TEXT / REFERENCE BOOKS

- Dr. L.L. Rao, Hospital Management. Annamalai University Press
- R. D. Lele, Computers in Medicine, Tata McGraw Hill, 2008
- Mohan Bansal, Medical informatics, Tata McGraw Hill, 2005

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks: 80

PART A: 10 questions of 2 marks each - No choice

PART B: 2 questions from each unit of internal choice; each carrying 12 marks

Exam Duration : 3 Hrs.

20 Marks

60 Marks

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF BIOMEDICAL ENGINEERING
SBMA3009 - FORENSIC SCIENCE – CBCS – Batch 2019-2023

S.NO	REGNO	NAME	Subject	Sub.Code
1	39240003	AISHWARYA J	Hospital management	SBMA3009
2	39240009	ATCHAYA. E	Hospital management	SBMA3009
3	39240011	CATHERINE MELITA PRADHIKSHA P	hospital management	SBMA3009
4	39240016	DIVYA R	Hospital management	SBMA3009
5	39240017	GEETHANJALI G	Hospital management	SBMA3009
6	39240018	HEPZIBAH SUSAN. M	Hospital management	SBMA3009
7	39240019	KEERTHANA R	Hospital management	SBMA3009
8	39240023	LOCHANA. P	Hospital Management	SBMA3009
9	39240025	MEENA MANJURI. J	Hospital management	SBMA3009
10	39240027	NISHA.S	Hospital management	SBMA3009
11	39240028	PERIYANAYAGAM ROZARIO.B	Hospital Management	SBMA3009
12	39240033	SABARI K	Hospital management	SBMA3009
13	39240034	SABITHA S	Hospital Management	SBMA3009
14	39240036	SHEEBA SRI. B	Hospital management	SBMA3009
15	39240038	STEFFY REENA. N	Hospital management	SBMA3009
16	39240039	TAMIL MARAN K	Hospital management	SBMA3009

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY	
DEPARTMENT OF BIOMEDICAL ENGINEERING	
Batch - 2019-2023	

CBCS

S.NO	REGNO	NAME	Subject	Sub.Code
1	39240022	KRISHA. H	Industrial Robotics And Expert System	SMEX3012
2	39240026	MONICA.S	Industrial Robotics And expert system	SMEX3012
3	39240040	TAMIZHLARRASI. R	Industrial robotics and expert system	SMEX3012

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY	
DEPARTMENT OF BIOMEDICAL ENGINEERING	
Batch - 2019-2023	

CBCS

S.No	REGNO	NAME	Subject	Sub.Code
1	39240035	SANTHIP SHANMUGAM A	Industrial Safety and Hazard Analysis	SCHA3010