

**KRISHNA INSTITUTE OF MEDICAL SCIENCES “DEEMED TO BE”  
UNIVERSITY, KARAD.**

**Diploma in Operation Theatre Technician**

(Program Code- 1801) (Course Code- 1801-11)

**RULES, REGULATIONS AND SYLLABUS**

**Statement of Philosophy– Why this profession holds so much importance**

A latest study by the Harvard School of Public Health has found that while the South-East Asia region has just 2.6 OTs per 1 lack population, the number is as low as 1.3 OT per 1 lack population in India and Pakistan. Whereas, developed regions like Eastern Europe have the highest number of OTs per 1 lack population - 25.1, followed by Asia Pacific (high income countries) 24.3, Central Europe 15.7, Western Europe 14.7, North America and Australasia 14.3, Central Asia 11.7 and the Caribbean 10.4 OTs). So we may interpret that there is an enormous scope and need for the profession not only in India as well as in other developing countries but at the same time along with skilled manpower we need adequate manpower. Moreover, a variety of electrical and electronic equipment are in use in modern operation theatres for monitoring anesthesia & surgical procedures, the success of the procedures and safety of patients depend largely on the reliability, smooth and trouble free performance of these equipment's and ability of skilled manpower to operate the same. Thus, there is increased need for qualified and trained professionals in the system. This course is aimed at satisfying this need.

**About Operation Theatre Technology**

An operation theatre (OT) technologist forms an intrinsic part of any hospital. To become a trained professional one must undertake operation theatre technology course. An OT professional is the one, who facilitates the surgical procedures, planned and emergency

both, by preparing in advance the equipment that are necessary for any surgical procedures. He/she also looks after all the work and management of the operation theatre which includes managing the patients in & out of operation theatre, looking after all the surgical equipment, arrangement of operation theatre table, dressing table, anesthesia table as well as management of the staff. As the surgical branch has various specialty including General Surgery, OBG, Cardiac, Ortho and genito-urinary, the OT technologist needs to know about these various sp

### **Definition of Operation Theatre Technologist**

Operation theatre Technologist is a member of a multidisciplinary team in operation theatres who prepare and maintain an operating theatre. Assists anaesthetist and surgical team during peri-operative period and provides support to patients in the recovery room.

### **Scope of practice**

- a. Setup, check, and maintain anesthesia machine, monitors life support equipment like airway equipment, ventilator, emergency equipment, defibrillator, anesthetic and resuscitation drugs.
- b. Orders, Maintains and keep records of all anesthesia equipment and drug.
- c. Assist Anesthetist in patient procedures like setting up of invasive lines, airway management, setting up of monitors and administer anesthesia to patient
- d. Assists during emergency situations by assisting in basic and advanced life support, critical events
- e. Prepares and maintains operation table, light, electric cautery, tourniquets etc.
- f. Management of central sterile services department. Packing of equipment and linen. Sterilization procedures like autoclaving, plasma sterilization and disinfection procedures as per guidelines, checking, storage and dispatch.
- g. Management in Intensive Care unit and emergency department of equipment like ventilators, monitors, infusion pumps, defibrillators etc.

- h. Assist disaster team in disaster situations and national emergencies on field and safe transport in ambulance.
- i. Assist anesthesia and surgical team in all kinds of surgical disciplines.

## **Introduction**

The operation theatre (OT) technologist is an integral person in the dynamic operating theatre team. The success of the procedures and safety of patients depends largely on the reliability of the OT technologist. This course aims in providing the technical and interpersonal skills required to work under the supervision of anesthetists and surgical personnel.

## **Learning Objectives:**

At the completion of this course, the student should be -

1. Able to help the anesthesiologist in administering anesthesia, assist in various procedures and also help in continuous monitoring of patients during surgery.
2. Able to train and develop an individual to independently handle the latest technology and high end biomedical equipment in Operation Theatre
3. Able to assist anesthesiologists in developing and plummeting patient anesthesia care plans, including pre-operative, surgical theater, recovery room, and post-operative intensive care procedures.
4. Able to do- patient data collection, catheter insertion, airway management , assisting the administration and monitoring of regional and peripheral nerve blockades, support therapy, adjusting anesthetic levels during surgery, inter-operative monitoring, postoperative procedures, pain clinics and patient education, and administrative tasks.
5. Able to manage medical gases and pipeline system
6. Able to assist in Intensive care unit
7. Able to manage Central sterile supply department
8. Able to assist during Disaster and emergency situations.

## Eligibility for admission

He/she has passed the G.N.M or B.BSC or P.B.BSC from any Indian University or a duly constituted Board with pass marks (50%)

## Duration of the DIPLOMA OF OPERATION THEATRE TECHNOLOGY Course:-

- 1) The Course duration is one year
- 2) On completion of the Course, Examination will be held.
- 3) The Course shall include the respective subjects as given in the Tables as well as the minimum number of hours devoted to each subject, lectures, practical and demonstration.

The detailed syllabus of each subject is given below.

### Appendix I.

No of paper	Name of subject	Theoretical Hours	Demonstrations Hours	Practical Hours
1	Basic sciences, concept of OT General surgical procedures C.P.R.	75hrs	100hrs	150 hrs
2	Maintenance of equipments Sterilization technique Drugs and Transfusion Special surgical procedure	75hrs	100hrs	150 hrs

There will be 4 lectures in a week and daily 3 hrs practical and demonstration.

## Examination for the Diploma Course:

3. (a) There will be Final examination at the end of the year, time and place as may be determined by the Governing Body.

### (b) Internal Assessment

Marks for all Para Medical Courses have been introduced from the academic session 2019, **20% of allotted marks in Theory and 10% of allotted marks in Oral and Practical in each paper of Diploma courses** would be assigned for internal assessment marks. **Pass marks in Internal assessment is 50% in each paper rounded off to the nearest five.** A candidate should not be allowed to sit for examination without pass marks in Internal Assessment.

The Examination will be conducted according to the following table:

Subject of Examination Total marks Theory +IA Total marks Oral/Practical +IA

## EXAMINATION

### FINAL Examination at the end of year

**Theoretical Practical & Oral** (Total 160 marks) (Total 180 marks) Pass Marks- 80 Pass Marks -90

No of paper	Name of subject	Theory Marks	Internal assessment	Oral/Practical Marks	Internal assessment
1	PART I Basic sciences, concept of OT PART II General surgical procedures C.P.R.	40  40	20	90	10
2	PART I Maintenance of equipments Sterilization technique PART II Drugs and Transfusion Special surgical procedure	40  40	20	90	10

Candidates should pass separately in theoretical as also in oral and practical parts

A candidate declared to have passed the above examinations if he/she secures 50% of the total marks in each subject – Theoretical + Oral – 50% and Practical – 50%. A candidate securing 75% marks or above in any subject or subjects, shall be declared to have obtained “Distinction” in that subject or subjects, provided he/she passes in all the subjects of the examination at the same time and at his/her first appearance at the examination.

A candidate, who appears at the Final Examination for the course but fails to pass in all the subjects or in one or more subjects, may be admitted to one or more subsequent examinations in subject or subjects in which he/she failed provided, however, that he/she passes in all the subjects in three subsequent examinations within a period of two years computed from the date of the examination in which he/she appeared for the first time. If he/she does not pass the entire examination within a period of two years, as mentioned above, he/she shall have to take the whole examination in all the subjects at the time when he/she appears next.

## Appendix V.

The general rules and regulations regarding conduct of examinations KIMS DEEMED UNIVERCITY shall apply with necessary modifications for the conduct of Diploma in Operation Theatre Technology Course examinations.

Detailed rules and regulations may be framed by the Governing Body from time to time.

SR NO	TOPIC NAME	SUB TOPIC NAME	ALLOTTED HOURS	NAME OF TEACHER
1	Introduction to Operation Theatre Technology, health care.	<b>Duration of the course:</b> Duration shall be for a period of one year <b>Medium of instruction:</b> English. <b>Scheme of examination:</b> There shall be examinations at the end	4	Dr A.Y.Kshirsagar.

		<p>of year.</p> <p><b>Attendance:</b> Every candidate should have attended at least 80% of the total number of classes conducted in An academic year</p> <p><b>Internal Assessment</b></p> <p><b>Schedule of Examination</b></p> <p><b>Pass criteria</b></p> <p><b>Main Subjects:</b> A candidate is declared to have passed in a subject, if he he/she secures, 50% of Marks in University Theory exam and internal assessment added together. <b>Subsidiary Subjects:</b> The minimum prescribed marks for a pass in subsidiary subject shall be 35% of the maximum marks prescribed for a subject.</p> <p><b>Introduction to Health</b> Definition of Health, Determinants of Health, Health Indicators of India, Health Team Concept. National Health Policy National Health Programmes (Briefly Objectives and scope) Population of India and Family welfare programme in India</p>		
2	Operating room ethics, discipline, layout,	<b>Professional values-</b> Integrity, Objectivity, Professional competence and due care,	2	Mrs Rohini Babar

		<p>Confidentiality</p> <p><b>Personal values-</b> ethical or moral values</p> <p><b>Attitude and behavior-</b> professional behavior, no discrimination.</p> <p><b>Code of conduct ,</b> professional accountability and responsibility, misconduct</p> <p>Differences between professions and importance of team efforts</p>		
3	Introduction to equipments in OT-	<p>Concept of Modular OT</p> <p>Laminar air Flow ,O T Sterilization</p> <p>Lights, OT Table Sucker, Diathermy etc.</p>	6	Mrs Rohini Babar
4	English	<p>Study Techniques</p> <p>Organization of effective note taking</p> <p><b>Applied grammar :</b></p> <p>Correct usage</p> <p>The structure of sentences</p> <p>The structure of paragraphs</p> <p>Enlargements of Vocabulary</p> <p><b>Written composition :</b></p> <p>Precise writing and summarizing</p> <p>Writing of bibliography</p> <p>Enlargement of Vocabulary</p> <p><b>Reading and comprehension :</b></p> <p>Review of selected materials and express oneself in one's words.</p> <p>Enlargement of Vocabulary</p> <p><b>The study of the various</b></p>	3	



		<p><b>forms of composition :</b> Paragraph, Essay, Letter, Summary, Practice in writing</p> <p><b>Verbal communication :</b> Discussions and summarization, Debates, Oral reports, use in teaching</p>		
5	Anatomy & physiology	<ol style="list-style-type: none"> <li>1. Introduction to Human Anatomy</li> <li>2. Skeletal system- bones, joints muscles of extremities.</li> <li>3. Abdominal wall, Chest wall, Back, head &amp; Neck.</li> <li>4. Heart &amp; vascular system – arteries, veins, lymphatic's.</li> <li>5. Airway, Larynx, Trachea, Bronchi, Lungs, Mediastrium, pleum, Diaphragm</li> <li>6. GI Tract, Liver, Spleen, Pancreas, Peritoneum.</li> <li>7. Kidney, Ureter, Bladder, Prostate, Genital Organs (M/F)</li> <li>8. Thyroid, Breast, Brains, Spinal Cord &amp; Nerves.</li> </ol> <ol style="list-style-type: none"> <li>1. Introduction of physiology</li> <li>2. Circulatory system</li> <li>3. Respiratory system</li> <li>4. Gastrointestinal system</li> <li>5. Hepatobiliary &amp; Pancreas</li> <li>6. Excretory system &amp; skin</li> <li>7. Reproductive, Endocrine and Metabolic system</li> <li>8. Musculoskeletal &amp; Neurological system, Eye &amp; ENT</li> </ol>	12Hrs	<p>Mrs Sandhya Jagadale.</p> <p>Mrs.Kavita Kapurkar.</p>

6	Pathology	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. General Pathology- infective and neoplastic disorders</li> <li>3. General Pathology- cystic, degenerative Metabolic &amp; Endocrine disorders</li> <li>4. Collection and sending of materials for examination Diagnostic modalities – Cytology/ Histopathology</li> <li>5. Systemic pathology – Cardiovascular &amp; Respiratory system.</li> <li>6. GI &amp; Hepatobiliary</li> <li>7. Excretory and Reproductive system.</li> <li>8. Musculoskeletal, Eye, ENT.</li> </ol>	5Hrs	Dr S.Kanetker
7	Microbiology	<ol style="list-style-type: none"> <li>1. Introduction to common pathogens</li> <li>2. Bacterial &amp; Viral disorders- transmission &amp; prevention</li> <li>3. Principles of diagnosis of specimen.</li> <li>4. Sterilization and other preventive aspects.</li> </ol>	4	Dr S.R.Patil
8	Pharmacology Medicine Relevant to Operation Theatre Technology	<p>Introduction – IV fluids, Blood and blood products.</p> <ol style="list-style-type: none"> <li>1 surgical nutrition (Enteral &amp; Parenteral)</li> <li>3. Analgesics &amp; Antipyretics</li> <li>4. Antibiotics and Disinfectants</li> <li>5. Anesthetic agents</li> <li>6. Narcotics</li> </ol>	6	Dr V. Thorat
9	Environment Science and Health	Introduction to Environment and Health	2	Mrs Rohini Babar

		Sources, health hazards and control of environmental pollution.		
10	Various roll of nurses	In charge nurse, Scrub nurse, Circulating nurse ,Recovery nurse .	2	Mrs Rohini Babar
11	Methods for preparation of the patients	Physical, physiological, Psychological, Social ,Cultural.	2	Mrs Rohini Babar
12	Recovery Room and Nursing	Care of (pre, post)patient.	2	Mrs Rohini Babar
13	Introduction to suture material	Cotton suture ,Linen suture, Braded silk, Chromic Catgut suture, Vicryl suture, Prolene suture, Ethilon suture, Mersilk suture, Monocryl suture , Prolene mesh, Skin stapler , Ligaclip, Protact AWO, Laparoscopic tubal band, Michal clip, Various types of drain, Ureteric catheter, Various types of shunt.	4	Mrs Rohini Babar Mrs Sunita Gaikwad
14	Anesthesia General anesthesia Conduction anesthesia	1. Principles of GA 2. Regional Anaesthesia  Local Anesthetic technique 2. Nerve blocks 3. Spinal Anesthesia 4. Epidural Anesthesia  3. Anaesthetic machine & related matters 4. Common medicines used in anaesthesia 5. Emergency drugs & Emergency Tray/ Trolley 6. Importance of monitoring in Pre & Post operative patients	10	Dr N.V. Kanase Dr H.A.Patil

		7. Maintenance of airway & Basics of Critical Care		
15	CPR (Cardiopulmonary Resuscitation)	<p>A. Vital signs and primary assessment</p> <p>B. Basic emergency care – first aid and triage</p> <p>C. Ventilations including use of bag-valve-masks (bvms)</p> <p>D. Choking, rescue breathing methods</p> <p>E. One- and Two-rescuer CPR</p> <p>F. Using an AED (Automated external defibrillator).</p> <p>G. Managing an emergency including moving a patient</p>	5	Dr S.Naik
16	Patient Handling and shifting techniques		2	Mrs Rohini Babar
17	Introduction surgical asepsis	Hand washing, Gowning, Gloving.	2	Mrs Rohini Babar
18	Law and Indian constitution legal implications	<p>1. Medical ethics - Definition - Goal - Scope</p> <p>2. Introduction to Code of conduct</p> <p>3. Basic principles of medical ethics – Confidentiality</p> <p>4. Malpractice and negligence - Rational and irrational drug therapy</p> <p>5. Autonomy and informed</p>	4	

		<p>consent - Right of patients</p> <p>6. Care of the terminally ill- Euthanasia</p> <p>7. Organ transplantation</p> <p>8. Medico legal aspects of medical records – Medico legal case and type- Records and document related to MLC - ownership of medical records - Confidentiality Privilege communication - Release of medical information - Unauthorized disclosure - retention of medical records - other various aspects.</p> <p>9. Professional Indemnity insurance policy</p> <p>10. Development of standardized protocol to avoid near miss or sentinel events</p> <p>11. Obtaining an informed consent</p>		
19	Surgical instruments and procedures	<p><b>Surgical procedures</b></p> <p>Neck Surgery,( oncology)</p> <p>Breast Procedures</p> <p>Abdominal Extra intestinal Surgery Gastrointestinal Surgery,</p> <p>Endoscopic Procedures including Laparoscopy</p> <p>Gynecological and Obstetric Surgery ,</p> <p>Genito-Urinary Surgery,</p> <p>Thoracic Procedures</p> <p>Cardiovascular Surgery,</p> <p>Orthopedic Surgery ,</p>	35	<p>Dr Digvijay Patil</p> <p>Dr A.Y.Kshirsagar</p> <p>Dr N .Nangare</p> <p>Dr N.Nangare</p> <p>Dr N.Nangare</p> <p>Dr S.S.Patil</p> <p>Dr Katkar</p> <p>Dr P.Salunkhe</p>

		Neurological Surgery, Plastic Surgery, Otorhinolaryngologic (ENT) Surgery, Ophthalmic Surgery, Pediatric Procedures		Dr R.B.Gunki Dr V.Raje Dr C. Wingkar Dr S.Shedje Dr V.Pawar Dr A.Y.Kshirsagar
20	Laying out of instrument trolleys.		4	Mrs Rohini Babar Mrs Sunita Mohite
21	Computer data processing. HMS		2	Mr V.D. Babar
22	Trouble shooting in OT.		1	
23	Hospital infection control management		6	Mrs Sandhya Jagdale.  Mrs.Kavita Kapurkar.
24	Bio Medical Waste management	A Definition of Biomedical Waste B. Waste minimization C. BMW – Segregation, collection, transportation, treatment and disposal (including color coding) D. Liquid BMW, Radioactive waste, Metals / Chemicals / Drug waste E. BMW Management & methods of disinfection F. Modern technology for	4	Mr Patole

		<p>handling BMW</p> <p>G. Use of Personal protective equipment (PPE)</p> <p>H. Monitoring &amp; controlling of cross infection (Protective devices)</p>		
25	Safety Measures	Personal protective Equipment, Electrical safety, Radiation safety.	2	Mrs Jaya chavan Mr Sam
26	Introduction to Central sterile supply Department.	<p>Lay out ,Disposable zone, Clean zone, sterile zone ,Working of autoclave ,Indicators of sterilization. Cleaning and Sterilization of equipments and instruments.</p> <p>Endoscopic Instruments including Laparoscopy Set-Maintenance, Cleansing, Sterilization</p> <p>Materials used for wrapping and packing assembling pack contents.</p>	4	Mrs Rohini Babar Mr B.S.Jetithor
27	Communication skills	<p>1.Basic concepts &amp; principles of good communication</p> <p>2. Special characteristics of health communication</p> <p>3 .Types &amp; process of communication</p> <p>4.Barriers of communication &amp; how to overcome</p>	2	Mrs Sandhya Jagadale.  Mrs.Kavita Kapurkar.

28	Handling of specimens	Collection of specimens, Processing of specimens, Labeling of specimens, Data entry of specimens, Transportation of specimens, Confirmation of specimens.	2	Mr B.S.Jetithor
29	Routine maintenance of equipments and instruments.	Continues care maintenance, Preventive maintenance, Annual maintenance contract.	3	Mrs Jaya chavan Mr Sam Mrs Sunita gaikwad
30	Introduction to medical gases.	Types of gases, Storage , Pressure gauge Compressed gas cylinders Color coding Cylinder valves; pin index. Gas piping system Recommendations for piping system Alarms & safety devices. Scavenging of waste anesthetic gases	3	Mr Kiran patil
31	Introduction to implants in operation theatre	Cardiac implant, Orthopedic implant , Ophthalmic implant, Dental implant.	3	Mrs Sunita gaikwad Mrs Sunita mohite
32	Documentation	Daily operation list , Various types of Registers, Various files, O T Indicators , Inventory.	2	Mrs Sunita mohite