



INTEGRAL UNIVERSITY, LUCKNOW
INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES & RESEARCH

DEPARTMENT OF PARAMEDICAL SCIENCES

**BACHELOR OF SCIENCE IN OPERATION
THEATRE TECHNOLOGY
(B. Sc. OTT)**

SYLLABUS

YEAR/ SEMESTER: III/V & VI



Integral University, Lucknow
Department of Paramedical Sciences
Study and Evaluation Scheme

Program: BOTT

Semester-V

S. N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	OT301	Anesthesia for Patient with Medical Disorder	Core	2	1	0	40	20	60	40	100	2:1:0	3
2	OT302	Central Sterile Supply Department (CSSD)Procedures	Core	2	1	0	40	20	60	40	100	2:1:0	3
3	OT303	Basic Intensive Care	Core	3	1	0	40	20	60	40	100	3:1:0	4
4	OT304	Advance Operation Theatre Technique	Core	3	1	0	40	20	60	40	100	3:1:0	4
PRACTICAL													
1	OT305	Seminar	Core	3	1	0	40	20	60	40	100	3:1:0	4
2	OT306	Central Sterile Supply Department (CSSD)Procedures Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
3	OT307	Advance Operation Theatre Technique Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
4	OT308	OT Posting	Core	0	0	2	40	20	60	40	100	0:0:1	1
Total				13	06	06	320	160	480	320	800	21	21

S. N.	Course code	Course Title	Type of Paper	Attributes							United Nation Sustainable Development Goal (SDGs)
				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
THEORIES											
1	OT301	Anesthesia for Patient with Medical Disorder	Core	√	√	√			√	√	3,4
2	OT302	Central Sterile Supply Department (CSSD)Procedures	Core	√	√	√			√	√	3,4
3	OT303	Basic Intensive Care	Core	√	√	√			√	√	3,4
4	OT304	Advance Operation Theatre Technique	Core	√	√	√			√	√	3,4
PRACTICAL											
1	OT305	Seminar	Core	√	√	√			√	√	3,4
2	OT306	Central Sterile Supply Department (CSSD)Procedures Lab	Core	√	√	√			√	√	3,4
3	OT307	Advance Operation Theatre Technique Lab	Core	√	√	√			√	√	3,4
4	OT308	OT Posting	Core	√	√	√			√	√	3,4

L: Lecture **T:** Tutorials **P:** Practical **CT:** Class Test **TA:** Teacher Assessment **ESE:** End Semester Examination,
AE= Ability Enhancement, **DSE-** Discipline Specific Elective, **Sessional Total:** Class Test + Teacher Assessment **Subject Total:** Sessional Total + End Semester Examination (ESE)



Integral University, Lucknow

Effective from Session: 2026-27

Course Code	OT301	Title of the Course	ANESTHESIA FOR PATIENTS WITH MEDICAL DISORDERS	L	T	P	C
Year	III	Semester	V	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Acquire the knowledge of concepts of cell injury & changes produced thereby in different tissues & organs-; capacity of the body in healing process. Recall the etio pathogenesis, the pathological effects & the clinic -pathological correlation of common infections & noninfectious diseases						

Course Outcomes	
CO1	Students able to understand the Hypertension and Diabetes.
CO2	Students able to understand Respiratory Diseases.
CO3	Students able to understand Coronary Artery diseases.
CO4	Students able to understand about Thyroid Disorder and Obesity.
CO5	Students able to learn the Renal Failure.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	HYPERTENSION AND DIABETES	Hypertension- Clinical Features & Complications ---Surgical Considerations in-Hypertensive Patients-commonly used antihypertensive-losartan, amlodipine,telmisartan, atenolol, methods to reduce hypertension intraoperatively, complications of intraoperative-hypertension- Diabetes Mellitus – Surgical Considerations in Diabetic Patients: Pre-operative glycemic control, Insulin management during surgery, Intra-operative blood glucose monitoring Post-operative care: Infection prevention, Wound care, Glycemic monitoring, Insulin preparations, methods to reduce blood sugar levels, complications of uncontrolled diabetes intraoperative.	6	CO1
2	RESPIRATORY DISEASES	Common respiratory disorders affecting surgery: Pneumonia, Tuberculosis, Restrictive lung diseases, respiratory diseases, - Bronchial asthma/COPD-complications and its management intraoperatively, methods to avoid precipitating bronchospasm, Airway management challenges, Ventilation strategies during anesthesia *Choice of Anesthesia *Pre-operative Assessment, premedication, Intraoperative Consideration, Postop Care	6	CO2
3	CORONARY ARTERY DISEASE	Coronary artery diseases, -risk factors for having a myocardial/infarction under anesthesia, drugs used in their management, complications of ischemic heart disease patient undergoing non cardiac surgery Pre-operative Assessment of CAD Patients, Indications for surgery in CAD patients Percutaneous Coronary Intervention (PCI) Balloon angioplasty Coronary stent placemen Choice of anesthesia & Anesthetic Drugs Intra-operative monitoring, Post-operative Care and Complications.	6	CO3
4	THYROID DISORDER AND OBESITY	Thyroid disorders -causes of hyper and hypothyroidism, challenges of anaesthetizing a thyroid patient, thyroid storm Causes & its management, complications after thyroidectomy, Surgical Management of Thyroid Disorders, Indications for thyroid surgery, Airway management. Choice Of Anesthesia Pre-operative assessment, Intra-operative and Post-operative Complications OBESITY: Evaluation of Obese Surgical Patient, History and physical examination BMI calculation, Airway assessment, challenges of anaesthetizing an obese patient. Indications for surgery. Difficult airway management, Intra-operative and Post-operative Complications	6	CO4
5	RENAL FAILURE	Renal failure-anesthetic challenges in renal failure patient, intraoperative complications in renal failure patients and its management., important anesthetic challenges during renal transplant, Choice of Anesthesia & Anesthetic Drugs. Pre-operative Considerations, Anesthetic Considerations in Renal Failure, Postoperative Care	6	CO5

Reference Books:

1. Comparative pharmacology for anaesthetists- Vipin dhama.
2. Miller anaesthesia
3. Clinical Anaesthesiology – 6 th edition Morgan

e-Learning Source:

1. <https://www.youtube.com/watch?v=MnVgGTv6EW0>
2. <https://www.youtube.com/watch?v=sBoRKzc7pdY>
3. <https://www.youtube.com/watch?v=AuTlwFreglc>
4. <https://www.youtube.com/watch?v=S1kdYd4JGbg>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	-	3	-	2	-	-	1	2	-	1	3	-	1	1	-
CO2	3	3	-	2	-	2	-	-	2	3	-	1	3	-	1	1	-
CO3	3	3	-	3	-	2	-	-	1	2	-	1	3	-	2	2	-
CO4	3	3	-	3	-	2	-	-	1	2	-	1	3	-	1	1	-
CO5	3	3	-	2	-	2	-	-	1	3	-	1	3	-	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
OT301	ANESTHESIA FOR PATIENTS WITH MEDICAL DISORDERS	√	√	√			√	√	3,4



Integral University, Lucknow

Effective from Session: 2026-27

Course Code	OT302	Title of the Course	CENTRAL STERILE SUPPLY DEPARTMENT(CSSD)PROCEDURES	L	T	P	C
Year	III	Semester	V	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	At the end of the course, the candidate will have sound knowledge of the sterilization and techniques used in sterilization, surgical instruments, criteria for purchase and maintenance, Quality assurance programme, Use of disinfections sorting and classification of equipment for cleansing purposes, Cleaning process- Use of detergents, Special precautions while handling instruments linen and other items used for patients with HIV, HBV,HCV.						

Course Outcomes	
CO1	Students able to understand Sterilization and Techniques of sterilization.
CO2	
CO3	Students able to understand about surgical instrument and maintenance
CO4	Students able to understand use of disinfectant.
CO5	Students able to understand use of detergent and cleaning process.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	STERILIZATION AND TECHNIQUES	General observations and principle of sterilization, Moist heat Sterilization, Dry heat sterilization, E2O gas sterilization, H2O2 gas plasma vapor sterilization. Calculation of capacity requirement of sterilizer.	6	CO1
2		Sterilize operation, Sterilize basic trouble shooting methods, Sterilization recommended practices or Flash Sterilization, Cell back system in case of detection of Failure. Complete decontamination technique, Confirmation of cleaning process, Monitoring Techniques, Quality Assurance program.	6	CO2
3	SURGICAL INSTRUMENT	Surgical Instruments, Criteria for Purchase and Maintenance, Preparation and Supplies for Terminal Sterilization, Endoscopes and its sterilization, Surgical Procedures.	6	CO3
4	DISINFECTION USE	Collection of used items from user area, reception protective clothing and disinfections sage guards, Use of disinfections sorting and classification of equipment for cleansing purposes, sharps, blunt lighted etc. contaminated high risk baby care- delicate instruments or hot care instruments.	6	CO4
5	CLEANING PROCESS	Cleaning process- Use of detergents, Mechanical cleaning apparatus, Cleaning instruments, cleaning jars, receivers bowls etc. trays, basins and similar hand are utensils, Cleaning of catheters and tubing, cleaning glass ware, cleaning syringes and needles. Special precautions while handling instruments linen and other items used for patients with HIV, HBV,HCV.	6	CO5

Reference Books:

1. Know your instruments Losper Joan M
- 2.

e-Learning Source:

1. <https://www.youtube.com/watch?v=LEiN-pkYeRs>
2. <https://www.youtube.com/watch?v=keXNin9IJSE>
3. https://www.youtube.com/watch?v=k_lxtI_9PMA
4. <https://www.youtube.com/watch?v=kJ3VsW4gnO0>

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-	3
CO2	2	3	-	2	-	2	-	-	-	1	-	2	3	-	2	2	-	2
CO3	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-	3
CO4	2	3	-	1	-	2	-	-	-	1	-	2	2	-	1	1	-	2
CO5	2	3	-	1	-	2	-	-	-	1	-	2	3	-	1	1	-	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT302	CENTRAL STERILE SUPPLY DEPARTMENT(CSSD) PROCEDURES	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	OT303	Title of the Course	BASIC INTENSIVE CARE	L	T	P	C
Year	III	Semester	V	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	This course deals with fundamentals of basic intensive care.						

Course Outcomes: After the successful course completion, learners will develop following attributes:							
CO1	Students will be able to learn about respirator system.						
CO2	Students will be able to learn about cardiovascular system.						
CO3	Students will be able to learn about CNS.						
CO4	Students will be able to learn about nutritional monitoring.						
CO5	Students will be able to learn about care and maintenance of Intensive care unit..						

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	RESPIRATORY SYSTEM	Monitoring lung and chest wall mechanics, Compliance, Resistance, Pressures, A, Monitoring muscle strength, work of breathing, Maximum inspiratory and expiratory pressures, monitoring, Bedside PFT, Respiratory muscles and mechanics of breathing, Ventilation, perfusion, and diffusion, Oxygen and carbon dioxide transport, Oxygen Therapy, Respiratory Assessment in ICU.	8	CO1
2	CARDIOVASCULAR SYSTEM	Blood pressure monitoring: Non-invasive BP (NIBP), Invasive arterial blood pressure (ABP), Mean (MAP) Central venous pressure (CVP) monitoring, Heart rate and rhythm monitoring ECG monitoring: Leads and placement, Common ECG waveform Care of invasive lines (arterial line, CVP line), Prevention of catheter-related infection Defibrillator: Types, Indications and precautions and Cardio version. Emergency Cardiac Drugs Used in ICU PICCO, Monitoring tissue perfusion, Pulmonary artery catheters, Temporary pacemaker.	8	CO2
3	CNS	Monitoring brain stem function: ICP & its monitoring, EEG and CT scan – Common CNS Disorders in ICU & their Management: Head injury, Stroke (ischemic and hemorrhagic) Meningitis and encephalitis, Seizure disorders and status epilepticus, Seizure management in ICU, Management of unconscious patient, Brain death Sedatives and analgesics, Antiepileptic drugs, Osmotic diuretics Steroids and neuroprotective agents	8	CO3
4	NUTRITIONAL MONITORING	Functional nutritional assessment (history and physical examination), Metabolic assessment, Estimating nutritional requirements Role of nutrition in healing, recovery, and immunity Effects of malnutrition in critically ill patients Methods of Nutritional Support: Enteral Nutrition: Oral feeding, Ryle's tube feeding, Gastrostomy feeding, Advantages and complications Parenteral Nutrition: Total Parenteral Nutrition (TPN), Peripheral Parenteral Nutrition (PPN), Indications and complications: Monitoring of Nutritional Therapy	8	CO4
5	CARE AND MAINTAINACE OF ICU	ICU Organization, Assessment of severity of illness—Its Various Methods Clinical Management of—Shock & Respiratory failure Complications in ICU Management Infection control in ICU—Methods.	8	CO5

Reference Books:

1. Egan's Fundamentals of Respiratory Care – Robert L. Wikins, James K Stoller,
2. The ICU Book – Paul L Marino (Lippincott, Williams & Wilkins)
3. Practical Methods for Respiratory Care – Raymond Sibberson (Mosby)
4. Critical Care Secrets: Parsons, Wiener – Kronish, Jaypee Brothers

e-Learning Source:

1. <https://www.youtube.com/watch?v=-tvDLg-5Qy8>
2. <https://www.youtube.com/watch?v=XfVqnlkU3ZY>
3. <https://www.youtube.com/watch?v=vGh7VVk9Oeg>
4. https://www.youtube.com/watch?v=Wu18mpI_62s

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	2	2	-	-	-	1	2	1	-	2	2	1	-	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	3	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	3	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	2	1	-	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT303	BASIC INTENSIVE CARE	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2026-27

Course Code	OT304	Title of the Course	ADVANCE OPERATION THEATRE TECHNIQUE	L	T	P	C
Year	III	Semester	V	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The course will provide training in basic type of anesthetic and anesthetic procedure.						

Course Outcomes: After the successful course completion, learners will develop following attributes:

CO1	Student will able to learn about neuro anaesthesia .
CO2	Student will able to learn about obstetric anaesthesia.
CO3	Student will able to learn about pediatric anaesthesia.
CO4	Student will able to learn about cardiac anaesthesia .
CO5	Student will able to learn about geriatric anaesthesia .

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	NEURO ANAESTHESIA	Glasgow coma scale, ICT, Anesthetic Considerations/Choice of Anesthesia & Anesthetic Drugs Premedication, Special investigation - CT, Angiography and MRI, Checklist Induction of a patient, Reinforced Endotracheal tubes, positioning in neuro surgery, Intracranial pressure (ICP) Venous Air embolism, Reversal of the patient, Transferring to I.C.U. / Ward Post-operative Complications & Post -op- Monitoring	8	CO1
2	OBSTETRIC ANAESTHESIA	Physiological Changes in Pregnancy, Risks for anesthesia., Precautions to be taken, Check list Anesthetic Considerations/Choice of Anesthesia & Anesthetic Drugs, Regional vs general Anesthesia, Induction / maintenance and recovery, Resuscitation of the newborn, Apgar score, Reversal and extubation , Emergencies - manual removal of placenta, Antepartum hemorrhage (APH), Postpartum hemorrhage (PPH) • Ruptured uterus, Ectopic Pregnancy, Eclampsia, -Anesthesia for Pregnancy Induced Hypertension (PIH)/ Preeclampsia. Intraoperative & Post-op. Complications their Management	8	CO2
3	PEDIATRIC ANAESTHESIA	Physiological Differences from Adults, Anesthetic Implications, Thermoregulation Theatre setting, Checklist, Premedication- modes, Induction, I n t u b a t i o n - Securing the EIT, Reversal & extubation – Problems, Transferring / ICU management, Pain management. Regional Anesthesia in Pediatric (Caudal, ilioinguinal or Penile Block), Vs General Anesthesia Anesthetic Management..	8	CO3
4	CARDIAC ANAESTHESIA	NYHA classification, Special investigations, Echocardiography, Angiography, Premedication, Pre-op Evaluation-, Anesthetic Considerations, Choice of Anesthesia and Anesthetic Drugs, Maintenance. —Intra-Op, Post-Op Complications & Management Monitoring - invasive and non – invasive, , Induction of cardiac patient, precautions to be taken, Cardiopulmonary bypass, Weaning of CPB, Transferring the patient to ICU, ICU management, Chest tube management	8	CO4
5	GERIATRIC ANAESTHESIA	Physiological changes, Pre-operative Evaluation Diseases of aging, Geriatric pharmacodynamics / pharmacokinetics, Postoperative nervous system dysfunction, Anesthetic Management, Anesthetic Implications, Premedication, Induction, Maintenance, Choice of Aesthesia & Anesthetic agents. Intra-Op & Post-Op Complications & Management—Special Care & Preventive Measures	8	CO5

Reference Books:

1. Ajay Yadav Short Textbook of Anaesthesia Jaypee
2. Anshul Jain Essentials of Anaesthesia& Critical Care Jaypee
3. Principles of anaesthesia equipment's – Yasodhanandha arit
- 4.The Anaesthesia Technologist's Manual by Emily S Guimaraes, Matthew Davis, Jeffrey R Kirsch, Glenn Woodworth
- 5.Introduction to the Surgery by Marketa Duskova

e-Learning Source:

1. <https://www.youtube.com/watch?v=aXt1DbdeBXk>
2. <https://www.youtube.com/watch?v=esxafXkG6zk>
3. <https://www.youtube.com/watch?v=GDcoeWBxOjc>
4. <https://www.youtube.com/watch?v=vAL8H3idU6k>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	-	-	-	-	-	-	-	-	-	1	3	-	1	-	2
CO2	3	3	-	-	-	2	-	-	-	-	-	-	3	3	2	3	3
CO3	2	3	-	-	-	2	-	-	-	-	-	1	3	2	1	3	2
CO4	3	3	-	-	-	-	-	-	-	-	-	-	2	3	2	2	3
CO5	3	3	-	-	-	3	-	1	-	-	-	-	3	3	2	3	3

2- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
OT304	ADVANCE OPERATION THEATRE TECHNIQUE	√	√	√			√	√	3,4



Integral University, Lucknow

Effective from Session: 2026-2027

Course Code	OT305	Title of the Course	SEMINAR	L	T	P	C
Year	III	Semester	V	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives							

Course Outcomes

CO1	Student will able to learn about anesthesia for patient with medical disorder.
CO2	Student will able to learn about central sterile supply department (cssd) procedures.
CO3	Student will able to learn about basic intensive care.
CO4	Student will able to learn about advance anesthesia technique.
CO5	Student will able to learn about anesthesia for patient with medical disorder.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1.	ANESTHESIA FOR PATIENT WITH MEDICAL DISORDER	Seminar Topic will be given based on courses and will be decided by course teacher.	6	CO1
2.	CENTRAL STERILE SUPPLY DEPARTMENT (CSSD) PROCEDURES	Seminar Topic will be given based on courses and will be decided by course teacher.	6	CO2
3.	BASIC INTENSIVE CARE	Seminar Topic will be given based on courses and will be decided by course teacher.	6	CO3
4.	ADVANCE OPERATION THEATRE TECHNIQUE	Seminar Topic will be given based on courses and will be decided by course teacher.	6	CO4
5.	ANESTHESIA FOR PATIENT WITH MEDICAL DISORDER	Seminar Topic will be given based on courses and will be decided by course teacher.	6	CO5

Reference Books:

1. Ajay Yadav Short Textbook of Anaesthesia Jaypee
2. Anshul Jain Essentials of Anaesthesia& Critical Care Jaypee
3. Principles of anaesthesia equipment's – Yasodhanandha arit
4. The Anaesthesia Technologist's Manual by Emily S Guimaraes, Matthew Davis, Jeffrey R Kirsch, Glenn Woodworth
5. Introduction to the Surgery by Marketa Duskova

e-Learning Source:

1. https://www.youtube.com/watch?v=aXt1DbdeBXk
2. https://www.youtube.com/watch?v=esxafXkG6zk
3. https://www.youtube.com/watch?v=GDcoeWBxOjc
4. https://www.youtube.com/watch?v=vAL8H3idU6k

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-
CO2	2	3	-	2	-	2	-	-	-	1	-	2	3	-	2	2	-
CO3	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-
CO4	2	3	-	1	-	2	-	-	-	1	-	2	2	-	1	1	-
CO5	2	3	-	1	-	2	-	-	-	1	-	2	3	-	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT305	SEMINAR	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2026-27

Course Code	OT306	Title of the Course	CENTRAL STERILE SUPPLY DEPARTMENT(CSSD)PROCEDURES LAB	L	T	P	C
Year	III	Semester	V	0	0	2	1
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate the practical knowledge in cssd.						

Course Outcomes	
CO1	To understand about the basic of pathological practical and also know the how to handle the equipment's.
CO2	
CO3	
CO4	To understand about the basic of Quality Assurance Monitoring system.
CO5	

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	INVENTORY MAINTAINENCE AND STRILIZATION	1. How to maintain perfect inventory, 2. Sterilization operation and monitoring. 3. Basic trouble shooting methods. 4. Practical knowledge on sterile storage and distribution, System of documentation, Sterilizer validation, Inventory management of surgical instruments.	20	CO1-5
2	QUALITY ASSURANCE	Practical knowledge of quality assurance monitoring system, Physical/ chemical/ Biological indicators- Monitoring and record maintenance.	10	CO1-5

Reference Books:

1. Text book of Pathology - by Harsh Mohan
2. Textbook of Pathology By Boyd
3. General Pathology – by Bhende
4. Pathologic basis of diseases by Cotran, Kumar, Robbins
5. Textbook of Parasitology- K. D. Chatterjee (12thEd.)
6. Text Book of Microbiology – Panikkar (9thEd.)
7. Essentials of Medical Microbiology-Sastry Apurba Shankar (1stEd.)
8. Textbook of Microbiology –P. Chakraborty

e-Learning Source:

1. <https://www.youtube.com/watch?v=LEiN-pkYeRs>
2. <https://www.youtube.com/watch?v=keXNin9IJSE>
3. https://www.youtube.com/watch?v=k_lxTl_9PMA
4. <https://www.youtube.com/watch?v=kJ3Vsw4gnO0>
5. <https://www.youtube.com/watch?v=LEiN-pkYeRs>

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO2	1	3	1	3	-	-	-	1	3	-	-	3	-	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation
Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT306	CENTRAL STERILE SUPPLY DEPARTMENT(CSSD)PR OCEDURES LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2026-2027

Course Code	OT307	Title of the Course	ADVANCE OPERATION THEATRE TECHNIQUE LAB	L	T	P	C
Year	III	Semester	V	0	0	4	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives							

Course Outcomes

CO1	Students will be able to learn about Picrametmethod, Benedict's/ Uristixmethod
CO2	Students will be able to learn about Rothera Nitroprussidetest, Serum Amylase, Serum Lipase estimation
CO3	Students will be able to learn about Malloy-Evelyn method, BCG method
CO4	Students will be able to learn about Uricase/ PAP method
CO5	Students will be able to learn aboutSemi Autoanalyzer, Flame Photometer

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1.	NEURO ANAESTHESIA	- Glasgow coma scale, - CT, Angiography and MRI , - Checklist , - Induction of a patient.	30	CO1
2.	OBSTETRIC ANAESTHESIA	- Differences between a pregnant and a normal lady, anaesthesia. , - Precautions to be taken , anaesthesia Check list, - Regional vs general anaesthesia, - Resuscitation of the newborn.		CO2
3.	PEDIATRIC ANAESTHESIA	- Check list , Premedication - modes , Induction ,Intubation - Securing the EIT. - Reversal & extubation. - Pain management.		CO3
4.	CARDIAC ANAESTHESIA	- NYHA classification. - Setting up of monitoring system. - Getting ready for the case.		CO4

Reference Books:

1. Ajay Yadav Short Textbook of Anaesthesia Jaypee
2. Anshul Jain Essentials of Anaesthesia& Critical Care Jaypee
- 3.Principles of anaesthesia equipment's – Yasodhanandha arit
- 4.The Anaesthesia Technologist's Manual by Emily S Guimaraes, Matthew Davis, Jeffrey R Kirsch, Glenn Woodworth
- 5.Introduction to the Surgery by Marketa Duskova

e-Learning Source:

5. <https://www.youtube.com/watch?v=aXt1DbdeBXk>
6. <https://www.youtube.com/watch?v=esxafXkG6zk>
7. <https://www.youtube.com/watch?v=GDcoeWBxOjc>
8. <https://www.youtube.com/watch?v=vAL8H3idU6k>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	2	2	-	-	-	1	2	1	-	2	-	2	2	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	-	1	1	1	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	-	1	1	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	2	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	-	1	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT307	ADVANCE OPERATION THEATRE TECHNIQUE LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	OT308	Title of the Course	OT POSTING	L	T	P	C
Year	III	Semester	V	0	0	10	5
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Students will engage in clinical practice in Physiotherapy departments in the musculoskeletal, neurology, cardiopulmonary, sports settings to enhance their clinical skills and apply contemporary knowledge gained during teaching sessions.						

Course Outcomes	
CO1	To learn the punctuality and interaction with colleague and supporting staff during clinical training.
CO2	To develop assessment skills.
CO3	To develop appropriate treatment protocol.
CO4	To understand the importance of documentation of the case record and case presentation.
CO5	To develop discipline and improve overall quality of clinical work.

CLINICAL POSTING ASSESSMENT FORM

Name of Student:		Session:	
Enrolment Number:		Date:	
Name of Subject:	OT POSTING	Subject code:	OT308
Topics:			

S. No.	Point to be Considered	Max. Marks	Marks Obtained
1.	Punctuality	4	
2.	Interaction with colleagues and supporting staff	2	
3.	Maintenance of case records	3	
4.	Presentation of case during rounds	2	
5.	Maintained OT records	2	
6.	OT Manners	2	
7.	Rapport with patients	2	
8.	Assistance during operative procedures	3	
9.	Discipline	2	
10.	Overall quality of clinical work	3	
TOTAL SCORE		25	

(Name and signature of In-charge)

(Head, Paramedical)

GUIDELINES FOR CLINICAL TRAINING PROGRAM

The students of Post Graduate BOTT program must spend above mentioned allotted time period in the hospital based clinical training for specified clinical experiences to meet the objectives of the training program. This period of practical and theoretical experience will enable the students to acquire competency and experience to perform as an independent practice and will enable to adjust to the real practical life in different units in the hospital settings.

S.No.	Program Name	Year/Semester	Duration of Training
1.	BOTT	II Year/ V Semester	4 Months
2.		II Year/ V Semester	4 Months
3.		III Year/ V Semester	4 Months
4.		III Year/ V Semester	4 Months

By the successful completion of this clinical training period, the student is expected to fulfil the objectives of the program and will be examination as given below:

S.No.	Program Name	Year/Semester	Case file	Practical on Case	Voice/Viva	Attendance
1.	BOTT	II Year/ V Semester	10 Marks	10 Marks (1 Long Case and 2 Short Case)	25 Marks	5 Marks
2.		II Year/ V Semester				
3.		III Year/ V Semester				
4.		III Year/ V Semester				

EVALUATION OF CLINICAL POSTING

BOTT- Students has to prepare 1 long case and 2 short cases during their clinical posting. The evaluation for internal clinical examination of 50 marks will be distributed:

Cases during clinical posting=25 marks.

Viva voce =20 marks

Attendance=5 marks

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	3	2	3	2	3	1	2	1	-	-	3	2	3	3	2
CO2	3	3	3	3	2	2	3	2	1	3	-	-	2	2	3	2	3
CO3	3	3	3	3	2	2	3	2	1	3	-	-	3	2	2	2	3
CO4	3	3	3	3	2	2	3	2	1	3	-	-	2	3	2	2	3
CO5	3	3	3	3	2	2	3	2	1	3	-	-	3	2	3	3	2

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT308	OT POSTING	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4,11
		√	√	√			√	√	



INTEGRAL UNIVERSITY, LUCKNOW

INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES & RESEARCH

DEPARTMENT OF PARAMEDICAL SCIENCES

**BACHELOR OF SCIENCE IN ANESTHESIOLOGY AND INTENSIVE CARE
TECHNOLOGY**

(B. Sc. AICT) SYLLABUS

YEAR/ SEMESTER: III/VI



Integral University, Lucknow
Department of Paramedical Sciences
Study and Evaluation Scheme

Program: BOTT

Semester-VI

S. N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	OT309	Advanced Surgical Procedures	Core	3	1	0	40	20	60	40	100	3:1:0	4
2	OT310	Advanced Intensive Care	Core	3	1	0	40	20	60	40	100	3:1:0	4
3	OT311	Specialized Anesthesia	Core	3	1	0	40	20	60	40	100	3:1:0	4
PRACTICAL													
1	OT312	Advanced Surgical Procedures Lab	Core	0	0	4	40	20	60	40	100	0:0:2	2
2	OT313	Advanced Intensive Care Lab	Core	0	0	4	40	20	60	40	100	0:0:2	2
3	OT314	OT Posting	Core	0	0	8	40	20	60	40	100	0:0:4	4
4	OT315	Dissertation	Core	0	0	10	40	20	60	40	100	0:0:5	5
Total				09	03	26	280	140	420	280	700	25	25

S. N.	Course code	Course Title	Type of Paper	Attributes							United Nation Sustainable Development Goal (SDGs)
				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
THEORIES											
1	OT309	Advanced Surgical Procedures	Core	√	√	√			√	√	3,4
2	OT310	Advanced Intensive Care	Core	√	√	√			√	√	3,4
3	OT311	Specialized Anesthesia	Core	√	√	√			√	√	3,4
PRACTICAL											
1	OT312	Advanced Surgical Procedures Lab	Core	√	√	√			√	√	3,4
2	OT313	Advanced Intensive Care Lab	Core	√	√	√			√	√	3,4
3	OT314	OT Posting	Core	√	√	√			√	√	3,4
4	OT315	Dissertation	Core	√	√	√			√	√	3,4

L: Lecture

T: Tutorials

P: Practical

CT: Class Test

TA: Teacher Assessment

ESE: End Semester Examination, **AE=** Ability Enhancement, **DSE-** Discipline Specific Elective, **Sessional**



Integral University, Lucknow

Effective from Session: 2027-28

Course Code	OT309	Title of the Course	ADVANCED SURGICAL PROCEDURES	L	T	P	C
Year	III	Semester	VI	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Acquire the knowledge of concepts of basic and advanced surgical procedures. Pre-Operative and Post-operative care and functioning of operation theatre.						

Course Outcomes	
CO1	Students able to understand the basics of surgery.
CO2	Students able to understand the pre-operative and post-operative care of surgical patients.
CO3	Students able to understand operation tables and diathermy.
CO4	Students able to understand operation lights and endoscopy equipment.
CO5	Students able to learn about operative microscope.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	GYNAECOLOGICAL SURGERY	Common Gynecological Surgical Procedures: 1. Dilatation and Curettage (D&C) 2. Hysterectomy 3. Myomectomy, 4. Ovarian cystectomy 5. Tubectomy, OT Setup, Patient Positioning Basic Instruments & Equipment: 1.D&C instrument set 2. Hysterectomy instrument set, 3. Vaginal speculums, Post-operative Care & Complication	8	CO1
2	GENERAL & LAPAROSCOPIC SURGERY	OT setup, instruments, and positioning, Principles of advanced general surgical care. Indications for open vs minimally invasive surgery, Laparoscopic surgery, concept, advantages & Limitations. CO ₂ insufflation, pneumoperitoneum. Laparoscopic Cholecystectomy Vs Open (Overview) Indications and contraindications. Laparoscopic Hernia Repair: -Types of hernia--Laparoscopic techniques (TAPP, TEP), Mesh selection and handling, Instruments and Equipment in Laparoscopic Surgery.	8	CO2
3	ORTHOPAEDIC SURGERY	Classification of Fractures--- Splints vs traction vs fixation. Internal Fixation & External Fixation Techniques Indications and advantages, OT setup and instrumentation. Arthroplasty (Types), Antibiotic prophylaxis, Special draping techniques Bone cement and cementing system, Blood loss management, Implant handling Common Arthroscopic Procedures, Arthroscopic Equipment's, Common Spine Procedures: OT Setup & Positioning, Lead aprons, Use Of C-Arm Machine & Principle	8	CO3
4	ENT SURGERY	ENT surgical trays, Nasal speculum, endoscopes, Suction tips and microscopes Tympanoplasty--Repair of tympanic membrane--Graft materials and surgical approach Mastoidectomy--Indications: Chronic suppurative otitis media Septoplasty, FESS: Indications--Chronic sinusitis, polyps Turbinectomy--Reduction of inferior turbinate hypertrophy Types: Simple and modified radical Tonsillectomy: Indications and age considerations, Surgical methods and complications Adenoidectomy: Indications in children, Effect on breathing and hearing, OT Preparation & Positioning in ENT Surgery Post-Operative Care & Complications	8	CO4
5	NEUROSURGERY	Common Neurosurgical Procedures: 1.Burr hole procedure 2, Evacuation of intracranial hematoma 3. Craniotomy 3. Ventricular-peritoneal (VP)shunt 4. Spine surgeries (laminectomy-- Overview) OT Setup and Patient Positioning, Head fixation devices. Basic neurosurgical instrument sets Checking operating microscope, drill, suction, cautery Post-operative Care & Complications, Prevention of post-operative complications. Intra-Op & Post Monitoring.	8	CO5

Reference Books:

1. Kapur. Introduction to Surgical Instruments & Procedures for Undergraduates, 2e Paperback – 1 January 2009.
2. C J S Thompson. The History and Evolution of Surgical Instruments Hardcover – Import, 30 March 2010.
3. R S Saha and A Mandal. A Practical Guide to Surgical Instrument and Procedure: A Practical Guide to Surgical Instrument and Procedure, 91pages, 2022.
4. Rajendra Singh Sewta. Manual of Surgical Equipment. 384pages, Jaypee Publications. 2010.
5. Prof Puneet. Roshan Lall Gupta's Recent Advances in Surgery (Volume 18), 314pages, Jaypee Publications. 2024.

e-Learning Source:

1. <https://pmc.ncbi.nlm.nih.gov/articles/PMC1964625/>
2. <https://pmc.ncbi.nlm.nih.gov/articles/PMC2628030/>
3. <https://pmc.ncbi.nlm.nih.gov/articles/PMC2605303/>
4. https://iris.who.int/bitstream/handle/10665/44185/9789241598552_eng.pdf

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	-	3	-	2	-	-	1	2	-	1	3	-	1	1	-
CO2	3	3	-	2	-	2	-	-	2	3	-	1	3	-	1	1	-
CO3	3	3	-	3	-	2	-	-	1	2	-	1	3	-	2	2	-
CO4	3	3	-	3	-	2	-	-	1	2	-	1	3	-	1	1	-
CO5	3	3	-	2	-	2	-	-	1	3	-	1	3	-	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT309	ADVANCED SURGICAL PROCEDURES	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2027-28

Course Code	OT310	Title of the Course	ADVANCED INTENSIVE CARE	L	T	P	C
Year	III	Semester	VI	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	At the end of the course, the candidate will have sound knowledge of ventilation, modes of ventilation, weaning and extubation, airway assistance and able to give life support therapy.						

Course Outcomes

CO1	Students able to understand the mechanism of ventilation.
CO2	Students able to understand the modes of ventilation.
CO3	Students able to understand the weaning and extubation.
CO4	Students able to understand the airway assistance.
CO5	Students able to give life support.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	BASIC CONCEPT OF MECHANICS OF VENTILATION	1.Basic Concept of Mechanics of ventilation., Jet Ventilation 2.Mechanics of exhalation 3.Work of breathing 4.Distribution of ventilation 5.Efficiency and effectiveness of ventilation 6.Indications 6.NIPPV--Indications, Contraindications, Modes & Complications 7.Protocol & Principles for NIPPV 8.HFNC-- Indications, Contraindications, & Complications 9.Protocol & Principles for HFNC 10.Mechanical Ventilators How ventilators work, Operator interface Types of ventilators	6	CO1
2	MODES OF MECHANICAL VENTILATION	Modes of Mechanical Ventilation: Basic and newer modes Ventilator initiation 2. Initial ventilator settings, Oxygenation, 3. Tidal volume 4. Pressure- Peak /Plateau PEEP, POP – OFF, Pressure support, Proximal airway (VS) distal FiO2 5. Complications of Mechanical ventilation & Associated Problems--Prevention & Management	6	CO2
3	WEANING AND EXTUBATION	1. Weaning; Definitions, Guidelines for Weaning/ Methods of Weaning. 2. Reasons for ventilator dependence Patient evaluation. 3. Newer techniques for facilitating ventilator discontinuance Selecting an approach Monitoring the patient during weaning. 4. Chronically, ventilator dependent on patients & difficulty in weaning. 5. ABG Techniques & Analysis 6. Terminal Weaning 7. Suctioning Procedure Of ETT/ Tracheostomy Tube 8. Extubation; Indications Procedure, Post extubation car	6	CO3
4	AIRWAY ASSISTANCE	1.Tracheal intubation (oral, nasal) – Insertion of ICD. 2. Cricothyrotomy. 3. Open/percutaneous tracheostomy. 4. Fiberoptic bronchoscopy Section 1: FOB Intubation 63 Section 1: Therapeutic BAL Decannulation of tracheostomy	6	CO4
5	CARDIOPULMONARY RESUSCITATION & LIFE SUPPORT	1. Basic life support • AED, Mask ventilation, Chest compression. 2. Advanced cardiac life support • Drugs, defibrillation., AHA Protocol 3. Trauma life support A –Airway and cervical spine stabilization B – Breathing C –Circulation and hemorrhage control D –Disability E-Exposure D Manual in line stabilization on Basic care of surgical wounds and fractures. 4. Burns Assessment Section 1: History and physical assessment Section 2: Assessment of burns and fluid and electrolyte loss Section3: Etiology classification, Pathophysiology, clinical manifestations, Diagnosis, treatment modalities	6	CO5

Reference Books:

1. Deepak Malviya, Soumya Sankar Nath, Prabhat K Singh, Mukesh Tripathi, Dinesh K Singh, Soniya Nityanand, Rajesh Misra. Handbook of Critical Care Perfect, Paras Medical Publisher; 1st Edition 2022 (1 January 2022)
2. S K Kabra Rakesh Lodha. Paediatrics Intensive Care protocol AIIMS By Indian Journal (31 December 2022); Indian Journal of Pediatrics.
3. Dr. Vandana P. Patil Ms. Reshma R. Patil, Ms. Ashwini R. Patil, Ms. Renuka B. Dhakne. Textbook of Procedures in Emergency Care. IP Innovative Publication Pvt. Ltd; First Edition (31 December 2022); 011 2324 3015
4. Anthony McLean, Stephen Huang, and Andrew Hilton. Oxford Textbook of Advanced Critical Care Echocardiography. 12 May 2020, 392 Pages.
5. Suveer Singh, Paolo Pelosi, and Andrew Conway Morris. Oxford Textbook of Respiratory Critical Care. 13 January 2024, 584 Pages

e-Learning Source:

1. <https://jintensivcare.biomedcentral.com/articles/10.1186/s40560-019-0402-4>
2. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8495525/>
3. <https://pmc.ncbi.nlm.nih.gov/articles/PMC7877163/>
4. <https://pmc.ncbi.nlm.nih.gov/articles/PMC5956686/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-	3
CO2	2	3	-	2	-	2	-	-	-	1	-	2	3	-	2	2	-	2
CO3	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-	3
CO4	2	3	-	1	-	2	-	-	-	1	-	2	2	-	1	1	-	2
CO5	2	3	-	1	-	2	-	-	-	1	-	2	3	-	1	1	-	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT310	ADVANCED INTENSIVE CARE	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2026-27

Course Code	OT311	Title of the Course	SPECIALIZED ANESTHESIA	L	T	P	C
Year	III	Semester	VI	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	This course deals with specialized anesthesia such as neuro-anesthesia, pediatric anesthesia, ENT anesthesia, cardiac anesthesia, and anesthesia outside the operation room and day care anesthesia.						

Course Outcomes: After the successful course completion, learners will develop the following attributes:

CO1	Students will be able to learn about neuro-anesthesia.
CO2	Students will be able to learn about pediatric anesthesia.
CO3	Students will be able to learn about ENT anesthesia.
CO4	Students will be able to learn about cardiac anesthesia.
CO5	Students will be able to learn about anesthesia outside the operation room and day care anesthesia

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	MONITORING UNDER ANESTHESIA	ABP Monitoring—NON-Invasive ABP Monitoring Techniques, Invasive ABP Monitoring Techni. Oxygen Saturation Monitoring Techniques, Co-Oximetry, Pulse Oximetry, Capnography— Indications & Techniques, Blood Gas Analysis. Anesthetic Gas Analysis—Techniques, Neuromuscular Monitoring, Temperature Monitoring—Techniques & Site, Monitoring Blood Loss, Various Methods, Monitoring The depth of Anesthesia, Monitoring Coagulation	8	CO1
2	CENTRAL NEURAXIAL BLOCKADE	Central Neuraxial Blockade, MOC--Systemic effects of neuraxial blockade, Spinal Anesthesia – Indications, Contraindications—Technique—Approaches, --Spinal needles, Saddle Block, Pharmacology of spinal Drugs, Complications of SA. Epidural Anesthesia-Procedure, --Methods of detecting Epidural space, --Epidural needles- Test Dose, --Pharmacology of epidural anesthetic agents. Caudal Anesthesia—Indications-Technique—Complications of Epidural & Caudal Block	8	CO2
3	NERVE BLOCKS	Blocks Of Upper Limb: (a) Brachial Plexus Block—Various Approaches and Level of Blockade, Complications/Disadvantages (b) Peripheral Brachial Block (c) Wrist Block (d)Intravenous Regional Anesthesia (Bier Block), Technique, Contraindications, Indications Complications & Side Effects. Stellate ganglion block, technique, side effects & complications Femoral nerve block (b)Sciatic Nerve Block(d)Ankle block, Techniques, Complications and Side Effects—Indications & Contraindications.	8	CO3
4	ANESTHESIA AT REMOTE LOCATIONS	Anesthesia at High altitudes, Patient Related Problems, Equipment Related Problems, Use of N2o Choice of Anesthetic Agents, Anesthesia at High Pressure (Under sea Water)-Problems & Principles of Anesthetic Management, Anesthesia In Dark (Radiological Procedures)	8	CO4
5	HYPOTENSIVE ANESTHESIA	Introduction of Hypotensive Anesthesia, Indications, Contraindications, Methods for inducing Hypotension, Clinical Considerations, Other Techniques to Reduce Intraoperative Bleeding.	8	CO5

Reference Books:

1. Dwarkadas K Baheti Understanding Anesthetic Equipment & Procedures: A Practical Approach Paperback – 1 January 2021.
2. The ICU Book – Paul L Marino (Lippincott, Williams & Wilkins)
3. Rebecca Jacob, Vibhavari Naik. Understanding Paediatric Anaesthesia, 4ed Paperback – 1 January 2023.
4. Critical Care Secrets: Parsons, Wiener – Kronish, Jaypee Brothers
5. Malamed. Handbook of Local Anesthesia, 7e: South Asia Edition Paperback – 1 January 2019.

e-Learning Source:

1. <https://www.ncbi.nlm.nih.gov/sites/books/NBK606110/>
2. <https://www.ncbi.nlm.nih.gov/books/NBK542219/>
3. <https://pubmed.ncbi.nlm.nih.gov/30601216/>
4. <https://pubmed.ncbi.nlm.nih.gov/34144873/>

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO																	
CO1	1	3	2	2	-	-	-	1	2	1	-	2	2	1	-	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	3	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	3	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	2	1	-	1	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT311	SPECIALIZED ANESTHESIA	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2026-27

Course Code	OT312	Title of the Course	ADVANCED SURGICAL PROCEDURES LAB	L	T	P	C
Year	III	Semester	VI	0	0	2	1
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate practical knowledge in Operation Theatre.						

Course Outcomes

CO1	To understand pre-operative and post-operative care.
CO2	
CO3	
CO4	To understand the advanced surgical procedures and know how to handle the equipment's related to surgery.
CO5	

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	PRE-OPERATIVE AND POST-OPERATIVE CARE	PRE-OP PREPARATION: 1. Pre-anesthetic assessment, History – past disease / Surgery / and personal history - Smoking / alcohol General physical assessment, systemic examination – CVS, RS, CNS. 2. Routine Investigation- Hematological - their significance - Urine - E.C.G. - Chest X – ray - Special Endocrine, hormonal assays - Echocardiography - Angiography - Liver function test - Renal function test - Others - Case acceptance: ASA grading - I, II, III, IV. V. POST-OPERATIVE CARE 1. Confirm the identification of the patient. 2. Monitoring – minimum - Noninvasive & Invasive monitoring. 3. Induction - drugs used - Endotracheal intubation - Maintenance of anesthesia. 4. Positioning of the patient. 5. Blood / fluid & electrolyte balance. 6. Reversal from anesthesia - drugs used – 7. Transferring the patient. 8. Recovery room – set up and things needed	20	CO1-5
2		1. Operation Tables 2. Diathermy/Cautery Machines 3. Operation Lights 4. Endoscopy Equipment 5. Operating Microscope	10	CO1-5

Reference Books:

- Kapur. Introduction to Surgical Instruments & Procedures for Undergraduates, 2e Paperback – 1 January 2009.
- C J S Thompson. The History and Evolution of Surgical Instruments Hardcover – Import, 30 March 2010.
- R S Saha and A Mandal. A Practical Guide to Surgical Instrument and Procedure: A Practical Guide to Surgical Instrument and Procedure, 91pages, 2022.
- Rajendra Singh Sewta. Manual of Surgical Equipment. 384pages, Jaypee Publications. 2010.
- Prof Puneet. Roshan Lall Gupta's Recent Advances in Surgery (Volume 18), 314pages, Jaypee Publications. 2024.
- Kapur. Introduction to Surgical Instruments & Procedures for Undergraduates, 2e Paperback – 1 January 2009.
- C J S Thompson. The History and Evolution of Surgical Instruments Hardcover – Import, 30 March 2010.
- R S Saha and A Mandal. A Practical Guide to Surgical Instrument and Procedure: A Practical Guide to Surgical Instrument and Procedure, 91pages, 2022.

e-Learning Source:

- <https://pmc.ncbi.nlm.nih.gov/articles/PMC1964625/>
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC2628030/>
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC2605303/>
- https://iris.who.int/bitstream/handle/10665/44185/9789241598552_eng.pdf
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC1964625/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO2	1	3	1	3	-	-	-	1	3	-	-	3	-	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT312	ADVANCED SURGICAL PROCEDURES LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2026-2027

Course Code	OT313	Title of the Course	ADVANCED INTENSIVE CARE LAB	L	0	T	0	P	4	C	2
Year	III	Semester	VI								
Pre-Requisite	Nil	Co-requisite	Nil								
Course Objectives	At the end of the course, the candidate will have sound knowledge of ventilation, modes of ventilation, weaning and extubation, airway assistance and able to give life support therapy.										

Course Outcomes

CO1	Students will be able to learn about monitoring and diagnostic procedures in ICU.
CO2	Students will be able to learn about infectious diseases in ICU.
CO3	Students will be able to learn about cardiovascular failure.
CO4	Students will be able to learn about ventilators.
CO5	Students will be able to learn about regional anesthesia techniques.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1.	MONITORING AND DIAGNOSTIC PROCEDURES IN I.C.U.	1. Central Venous access. 2. ECG monitoring. 3. Invasive hemodynamic monitoring	30	CO1
2.	INFECTIOUS DISEASES IN I.C.U.	1. Antibiotics in I.C.D. 2. Oxygen therapy 3. Mechanical ventilation		CO2
3.	CARDIOVASCULAR FAILURE	1. Inotropic support. 2. Vaso dilator drugs.		CO3
4.	VENTILATORS	1. Principles of working of different ventilators. 2. Volume cycles ventilators. 3. Time cycle ventilators. 4. Pressure cycles ventilators. 5. High Frequency ventilators etc.		CO4
5.	REGIONAL ANAESTHETIC TECHNIQUES	1. Local anesthetic technique - Nerve blocks. 2. Spinal Anesthesia - Epidural anesthesia. 3. Ultrasound guided nerve blocks.		CO5

Reference Books:

1. Ajay Yadav Short Textbook of Anesthesia Jaypee
2. Anshul Jain Essentials of Anesthesia& Critical Care Jaypee
3. Principles of anesthesia equipment 's – Yasodhanandha arit
4. The Anesthesia Technologist's Manual by Emily S Guimaraes, Matthew Davis, Jeffrey R Kirsch, Glenn Woodworth
5. Introduction to the Surgery by Marketa Duskova

e-Learning Source:

1. <https://www.ncbi.nlm.nih.gov/sites/books/NBK606110/>
2. <https://www.ncbi.nlm.nih.gov/books/NBK542219/>
3. <https://pubmed.ncbi.nlm.nih.gov/30601216/>
4. <https://pubmed.ncbi.nlm.nih.gov/34144873/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO																	
CO1	1	3	2	2	-	-	-	1	2	1	-	2	-	2	2	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	-	1	1	1	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	-	1	1	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	2	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	-	1	1	1	-

1-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT313	ADVANCED INTENSIVE CARE LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	OT314	Title of the Course	OT POSTING	L	T	P	C
Year	III	Semester	VI	0	0	10	5
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Students will engage in clinical practice in Anesthesia and Operation Theatre departments in the ICU/NICU/SICU, Dialysis Unit, Emergency Department and CSSD to enhance their clinical skills and apply contemporary knowledge gained during teaching and practical sessions.						

Course Outcomes	
CO1	To learn punctuality and interaction with colleagues and support staff during clinical training.
CO2	To develop assessment skills.
CO3	To develop appropriate treatment protocol.
CO4	To understand the importance of documentation of the case record and case presentation.
CO5	To develop discipline and improve overall quality of clinical work.

CLINICAL POSTING ASSESSMENT FORM

Name of Student:		Session:	
Enrolment Number:		Date:	
Name of Subject:	OT POSTING	Subject code:	OT308
Topics:			

S. No.	Point to be Considered	Max. Marks	Marks Obtained
1.	Punctuality	4	
2.	Interaction with colleagues and supporting staff	2	
3.	Maintenance of case records	3	
4.	Presentation of case during rounds	2	
5.	Maintained OT records	2	
6.	OT Manners	2	
7.	Report with patients	2	
8.	Assistance during operatives' procedures	3	
9.	Discipline	2	
10.	Overall quality of clinical work	3	
	TOTAL SCORE	25	

(Name and signature of In-charge)

(Head, Paramedical)

GUIDELINES FOR CLINICAL TRAINING PROGRAM

The students of the Post Graduate BAICT program must spend the above-mentioned allotted time period in the hospital based clinical training for specified clinical experiences to meet the objectives of the training program. This period of practical and theoretical experience will enable the students to acquire competency and experience to perform as independent practice and will enable to adjust to the real practical life in different units in the hospital settings.

S.No.	Program Name	Year/Semester	Duration of Training
1.	BOTT	IInd Year/ IIIrd Semester	4 Months
2.		IInd Year/ IVth Semester	4 Months
3.		IIIrd Year/ Vth Semester	4 Months
4.		IIIrd Year/ VIth Semester	4 Months

By the successful completion of this clinical training period, the student is expected to fulfil the objectives of the program and will be examination as given below:

S.No.	Program Name	Year/Semester	Case file	Practical on Case	Voice/Viva	Attendance
1.	BOTT	IInd Year/ IIIrd Semester	10 Marks	10 Marks (1 Long Case and 2 Short Case)	25 Marks	5 Marks
2.		IInd Year/ IV th Semester				
3.		IIIrd Year/ Vth Semester				
4.		IIIrd Year/ VIth Semester				

EVALUATION OF CLINICAL POSTING

BOTT- Students must prepare 1 long case and 2 short cases during their clinical posting. The evaluation for internal clinical examination of 50 marks will be distributed:

Cases during clinical posting=25 marks.

Viva voce =20 marks

Attendance=5 marks

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	3	2	3	2	3	1	2	1	-	-	3	2	3	3	2
CO2	3	3	3	3	2	2	3	2	1	3	-	-	2	2	3	2	3
CO3	3	3	3	3	2	2	3	2	1	3	-	-	3	2	2	2	3
CO4	3	3	3	3	2	2	3	2	1	3	-	-	2	3	2	2	3
CO5	3	3	3	3	2	2	3	2	1	3	-	-	3	2	3	3	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
OT314	OT POSTING	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4,11
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	OT315	Title of the Course	DISSERTATION	L	T	P	C
Year	II	Semester	VI	0	0	30	15
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The main objective of this course is to develop independence in research skills and to develop research interpretation skills. To promote education and research in anesthesia and intensive care technology and provide academic and professional excellence for immediate productivity in hospitals, governmental, or clinical settings for the ultimate benefit of society and environment.						

Course Outcomes	
CO1	The students will be able to perform literature reviews and identify state of the art in that field.
CO2	The students will be able to define the problem and develop synopsis of a defined research problem
CO3	The students will be able to establish a methodology using advanced tools / techniques for solving the problem including project management and finances.
CO4	The students will be able to prepare the research report and its oral demonstrations.
CO5	The students will gain practical experience in project management in the hospital service industry, and be able to use various techniques in contemporary research for project, perform numerical analysis and interpret the results

Name of Student:		Session:	
Enrollment Number:		Date:	
Name of Course:	Dissertation	Course Code:	OT315
Topics:			

S. No.	Evaluation	Point to be Considered	Max. Marks	Marks Obtained
1.	Based on continuous assessment (10 Marks)	Periodic Consultation with Guide	2	
2.		Regular collection of Data with the consultation of guide.	2	
3.		Command of the topic & presentation skill	2	
4.		Methods, analysis, dissuasion and Conclusions	2	
5.		Contribution to knowledge and thesis structure	2	
Review all heading				
1.	Based on External Evaluators at the time of End Sem Examination.	Introduction	3	
2.		Aims, objectives & research hypothesis	3	
3.		Review of literature	3	
4.		Material & Methods	3	
5.		Data analysis & results	3	
6.		Discussion, lamination & future study	3	
7.		Conclusion, signification.	3	
8.		Bibliography	3	
9.		Tables, graph, diagram & Annexure (if any) Statistical Analysis Master Chart	3	
10.		The deface of study	3	
		Total Score	40	

Note: Evaluation of Dissertation of BOTT- Students must prepare an oral presentation; each student will be assessed in 20 minutes' time (15 min for presentation & 5 min for discussion). The evaluation of dissertation by external examiner with proper approval of concern authorities. The end semester examination will be 40 marks as external evaluations, and 60 marks will be by the internal examiner (continuous assessment):

Comments/Suggestions:

(Name and signature of In-charge)

(Head, Paramedical)

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	3	2	3	2	3	1	2	1	-	-	3	2	3	3	2
CO2	3	3	3	3	2	2	3	2	1	3	-	-	2	2	3	2	3
CO3	3	3	3	3	2	2	3	2	1	3	-	-	3	2	2	2	3
CO4	3	3	3	3	2	2	3	2	1	3	-	-	2	3	2	2	3
CO5	3	3	3	3	2	2	3	2	1	3	-	-	3	2	3	3	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes						SDGs No.
OT315	Dissertation	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics
		√	√	√	√		√	√

3,4,9, 17