

Maulana Abul Kalam Azad University of Technology, WB
(Formerly known as West Bengal University of Technology)
Syllabus of B.Sc. in Medical Instrumentation & Critical Care Technology
Effective from academic session 2023-24
8th SEMESTER (With HONORS)

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	DSC	BMICCT 801	GYNAECOLOGY & OBSTETRICS	3	2	0	5
2.		BMICCT 802	CLINICAL MANIFESTATION OF PEDIATRICS	3	2	0	5
3.		BMICCT 803	OPHTHALMOLOGY & ENT	3	1	0	4
3.	SEC	SEC881	Dissertation work (Started in seventh semester)	8	-	-	8
Total Credit							22

Course Name: GYNAECOLOGY & OBSTETRICS

Mode: Offline

Credits: 5 (3L+2T)

BMICCT 801

Aim of the course:

The aim of the course "Gynaecology & Obstetrics for Critical Care Students" is to provide undergraduate students of the Critical Care Department with foundational knowledge and practical insights into the anatomy, physiology, and pathological conditions related to the female reproductive system, pregnancy, childbirth, and associated emergencies.

Course Objective:

- Understand normal and abnormal reproductive health conditions.
- Recognize and respond to obstetric and gynecological emergencies in a critical care setting.
- Collaborate effectively with obstetric teams in managing high-risk maternal and neonatal cases.
- Apply essential clinical skills in monitoring and supporting women during the antenatal, intrapartum, and postpartum periods.

Sr no.	Graduate attributes	Mapped Modules
CO 1	Foundations of Female Reproductive Health	MODULE I
CO 2	Essentials of Obstetrics and Antenatal Care	MODULE II
CO 3	Obstetric and Gynaecologic Emergencies in Critical Care	MODULE III

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Learning objectives:

- ✓ Define key terminologies related to gynaecology and obstetrics, including terms associated with pregnancy, labor, and female reproductive health.
- ✓ Label and explain the anatomy and physiology of the female reproductive system and menstrual cycle.
- ✓ List and describe the common signs, symptoms, and management principles of gynecological conditions such as PCOS, PID, and menstrual disorders.
- ✓ Summarize the physiological changes during pregnancy and stages of fetal development across the trimesters.

Module Number	Content	Total Hours	% of questions	Bloom Level (applicable)	Remarks, if any
THEORY					
M I	Foundations of Female Reproductive Health	15	50		NA
M II	Essentials of Obstetrics and Antenatal Care	15	25		NA
M III	Obstetric and Gynaecologic Emergencies in Critical Care	15	25		NA
Total Theory		45	100		
TUTORIAL		30			
TOTAL		75			

Detailed syllabus:

MODULE I: Foundations of Female Reproductive Health

1. Anatomy and Physiology of the Female Reproductive System

- Overview of external and internal genitalia
- Menstrual cycle: hormonal regulation and phases
- Puberty and menopause: physiological changes and management

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2. Common Gynecological Conditions and Disorders

- Dysmenorrhea, amenorrhea, menorrhagia, and polymenorrhagia
- Polycystic Ovary Syndrome (PCOS): pathophysiology and implications
- Endometriosis and pelvic inflammatory disease (PID)

3. Diagnostic Tools in Gynecology

- Ultrasonography basics
- Pap smear and cervical cancer screening
- Basic laboratory tests in gynecology

MODULE II: Essentials of Obstetrics and Antenatal Care

1. Physiology of Pregnancy and Maternal Adaptations

- Trimesters of pregnancy and systemic changes
- Fetal growth and development overview

2. Antenatal Care and Risk Assessment

- Routine antenatal visits and assessments
- Screening for high-risk pregnancies (e.g., gestational diabetes, preeclampsia)
- Immunization and supplementation during pregnancy

3. Labour and Delivery Overview

- Stages of labor and their management
- Normal vaginal delivery and pain relief methods
- Role of the critical care nurse during labor and delivery support

MODULE III: Obstetric and Gynecologic Emergencies in Critical Care

1. Obstetric Emergencies: Identification and Initial Response

- Eclampsia, antepartum and postpartum hemorrhage
- Preterm labor, uterine rupture, cord prolapse
- Puerperal sepsis and emergency cesarean section support

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2. Critical Care in Postpartum Period

- Monitoring vital signs and early warning scores
- Postpartum complications: hemorrhage, infections, thromboembolism
- Neonatal resuscitation basics and mother-baby ICU coordination

3. Gynecological Emergencies and Critical Management

- Ectopic pregnancy: recognition and emergency response
- Ovarian torsion, ruptured ovarian cyst
- Management of patients with gynecological malignancies in critical care

Suggested Books:

DC Dutta's Textbook of Obstetrics by Author: Hiralal Konar

DC Dutta's Textbook of Gynaecology by Author: Hiralal Konar

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Course Name: CLINICAL MANIFESTATION OF PEDIATRICS

Mode: Offline

Credits: 5 (3L+2T)

BMICCT 802

Aim of the course:

The aim of the course "Clinical Manifestation of Pediatrics" is to equip undergraduate critical care students with foundational knowledge and clinical insight into the common and critical signs and symptoms of pediatric illnesses. The course emphasizes the early recognition, systematic assessment, and interpretation of clinical manifestations in children to support timely and effective interventions in pediatric critical care settings.

Course Objective:

- Identify normal and abnormal growth and developmental patterns in pediatric patients, and recognize early warning signs of developmental delays.
- Recognize and interpret key clinical manifestations of common acute and chronic pediatric conditions affecting various organ systems.
- Assess pediatric patients systematically to differentiate between normal physiological variations and signs of critical illness.
- Apply foundational knowledge of pediatric symptomatology to assist in early diagnosis, triage, and care planning in critical care settings.

Sr no.	Graduate attributes	Mapped Modules
CO 1	Pediatric Growth, Development, and Systemic Manifestations	MODULE I
CO 2	Acute and Chronic Pediatric Conditions – Clinical Presentation in Critical Care	MODULE II

Learning objectives:

- Describe the age-specific clinical features of common pediatric illnesses affecting the respiratory, cardiovascular, gastrointestinal, neurological, and hematological systems.

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- Demonstrate the ability to assess pediatric patients using growth charts, developmental screening tools, and clinical observation techniques.
- Identify critical signs and symptoms that require immediate intervention or referral in pediatric patients.
- Differentiate between common and life-threatening pediatric conditions based on clinical presentations relevant to critical care environments.

Module Number	Content	Total Hours	% of questions	Bloom Level (applicable)	Remarks, if any
THEORY					
M I	Pediatric Growth, Development, and Systemic Manifestations	23	50		NA
M II	Acute and Chronic Pediatric Conditions – Clinical Presentation in Critical Care	22	50		NA
Total Theory		45	100		
TUTORIAL		30			
TOTAL		75			

Detailed syllabus:

MODULE I: Pediatric Growth, Development, and Systemic Manifestations

1. Overview of Pediatric Growth and Development

- Normal milestones: motor, cognitive, language, and social
- Growth charts and developmental red flags
- Differences between neonates, infants, toddlers, and adolescents

2. Nutritional Deficiencies and Manifestations

- Clinical signs of undernutrition and overnutrition
- Vitamin and mineral deficiency symptoms (e.g., rickets, anemia, scurvy)

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Effective from academic session 2023-24

- Impact on systemic development

3. Pediatric Respiratory Manifestations

- Signs of respiratory distress in children
- Common respiratory conditions: bronchiolitis, pneumonia, asthma
- Critical care interventions in pediatric respiratory emergencies

4. Cardiovascular Presentations in Pediatrics

- Congenital heart diseases: cyanotic and acyanotic features
- Signs of pediatric heart failure
- Peripheral signs: cyanosis, clubbing, edema

MODULE II: Acute and Chronic Pediatric Conditions – Clinical Presentation in Critical Care

1. Gastrointestinal and Hepatic Manifestations

- Vomiting, diarrhea, constipation: evaluation and red flags
- Dehydration signs and assessment in children
- Pediatric jaundice and hepatomegaly

2. Neurological Signs and Symptoms in Children

- Seizures: types and age-related features
- Signs of raised intracranial pressure
- Meningitis, encephalitis: clinical clues and differential diagnosis

3. Infectious Diseases and Pediatric Fever Patterns

- Fever without focus: approach and differential
- Rash-associated illnesses: measles, chickenpox, dengue
- Sepsis in pediatrics: signs and critical care relevance

4. Hematological and Oncological Presentations

- Pallor, bruising, petechiae: evaluation of hematological issues
- Leukemia, lymphoma: early warning signs
- Critical signs in hemophilia and anemia

Suggested Books:

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- ✓ **Nelson Textbook of Pediatrics** by Authors: Robert M. Kliegman, Bonita F. Stanton, Joseph St. Geme, Nina F. Schor
- ✓ **Essentials of Pediatrics** by Author: S.S. Shirol

Course Name: OPHTHALMOLOGY & ENT Mode:

Offline

Credits: 4 (3L+1T)

BMICCT 803

Aim of the course:

To equip critical care students with fundamental knowledge and clinical understanding of Ophthalmology and Otorhinolaryngology (ENT) relevant to the intensive care setting. This course aims to develop the ability to recognize, assess, and assist in the initial management of common and life-threatening eye and ENT conditions encountered in critical care. Emphasis is placed on the integration of systemic disease manifestations, emergency response, and interdisciplinary collaboration, enabling students to contribute effectively in high-dependency environments.

Course Objective:

- Understand the basic anatomy and physiology of the eye relevant to clinical practice and critical care.
- Identify and describe common ocular emergencies encountered in ICU and emergency settings.
- Understand the anatomy and physiology of the ear, nose, and throat with a focus on critical care relevance.
- Recognize and respond to ENT emergencies, such as airway obstruction, epistaxis, and facial trauma.
- Identify ENT conditions associated with systemic illnesses and infections in critically ill patients.

Sr no.	Graduate attributes	Mapped Modules
CO 1	Foundations of Ophthalmology and ENT for Critical Care	MODULE I
CO 2	Ocular & ENT Conditions and Their Critical Care Implications	MODULE II
CO 3	Diagnostic Tools and Interventions in Ophthalmology and ENT	MODULE III
CO 4	Infection Control, Emergency Protocols, and Interdisciplinary Care	MODULE IV

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Learning objectives:

- Understand the basic anatomy and physiology of the eye relevant to clinical and emergency settings.
- Recognize common ocular manifestations of systemic diseases like hypertension, diabetes, and sepsis.
- Identify and manage basic ocular emergencies, including red eye, trauma, and sudden vision loss.
- Understand the anatomy and physiology of the ear, nose, throat, and airway with a focus on critical care relevance.
- Recognize and respond to ENT emergencies, including airway obstruction, epistaxis, and facial trauma.
- Identify ENT-related complications of systemic conditions and ICU treatments.

Module Number	Content	Total Hours	% of questions	Bloom Level (applicable)	Remarks, if any
THEORY					
M I	Foundations of Ophthalmology and ENT for Critical Care	12	25		NA
M II	Ocular & ENT Conditions and Their Critical Care Implications	11	25		NA
M III	Diagnostic Tools and Interventions in Ophthalmology and ENT	11	25		NA
M IV	Infection Control, Emergency Protocols, and Interdisciplinary Care	11	25		NA
Total Theory		45	100		
TUTORIAL		15			
TOTAL		60			

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Detailed syllabus:

MODULE I: Foundations of Ophthalmology and ENT for Critical Care

Unit 1: Ophthalmology:

- Introduction to the Anatomy and Physiology of the Eye
- Common Eye Diseases in Critical Care: An Overview
- Ocular Manifestations of Systemic Diseases (e.g., diabetes, hypertension, sepsis)
- Basic Ocular Pharmacology for ICU Practice

Unit 2: ENT:

- Anatomy and Physiology of the Ear, Nose, and Throat
- ENT Emergencies: Identification and Initial Response
- ENT Manifestations of Systemic Illness
- Introduction to ENT Instruments and Procedures in ICU Settings.

MODULE II: Ocular & ENT Conditions and Their Critical Care Implications

Unit 1: Ophthalmology: -

- Acute Red Eye: Differential Diagnosis and ICU Management
- Sudden Vision Loss in Critical Settings: Causes and Protocols
- Traumatic Eye Injuries: First Aid and Stabilization in Emergency Rooms
- Monitoring and Managing Raised Intracranial Pressure via Ocular Clues (e.g., papilledema)

Unit 2: ENT: -

- Acute Upper Airway Obstruction: Assessment and Airway Management
- Epistaxis (Nosebleed) in Critically Ill Patients
- Facial Trauma and ENT Complications in ICU
- Otitis Media and Mastoiditis: When They Become Life-Threatening

MODULE III: Diagnostic Tools and Interventions in Ophthalmology and ENT

Unit 1: Ophthalmology: -

- Use of Ophthalmoscope in Critical Care: Basic Techniques
- Bedside Eye Examination in Non-cooperative or Unconscious Patients
- Fundoscopy in Diagnosis of Hypertensive and Diabetic Retinopathy
- Application of Ocular Ultrasound in the ICU

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Unit 2: ENT: -

- Use of Nasal and Oropharyngeal Airway Devices in Emergency
- Tracheostomy: Indications, Care, and Complications
- Nasal Endoscopy and Laryngoscopy: Overview and Critical Applications
- Imaging in ENT (X-ray, CT, MRI): Identifying Critical Pathologies

MODULE IV: Infection Control, Emergency Protocols, and Interdisciplinary Care

Unit 1: Ophthalmology:

- ICU-Associated Eye Complications (e.g., exposure keratopathy)
- Ocular Infections in Immunocompromised Patients
- Infection Control Practices in Eye Care within ICU
- Interdisciplinary Approach: Working with Ophthalmologists in Critical Cases

Unit 2: ENT:

- Management of ENT Infections in ICU (e.g., Ludwig's angina, peritonsillar abscess)
- ICU Protocols for ENT Bleeding and Airway Edema
- Preventing Hospital-Acquired ENT Infections (e.g., ventilator-associated sinusitis)
- ENT Consultation in Polytrauma and Neurosurgical Cases

Suggested Books:

- Ophthalmology for Undergraduate Students by Author: AK Khurana
- Basic Ophthalmology by Author: American Academy of Ophthalmology (AAO)
- ENT for Students and Practitioners by Author: K. K. Ramalingam
- Essentials of Ear, Nose, Throat by Author: Mohan Bansal

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Effective from academic session 2023-24
8th Semester (Honors with Research)

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	DSC	BMICCT 801	GYNAECOLOGY & OBSTETRICS	3	1	0	4
2.		BMICCT 802	CLINICAL MANIFESTATION OF PEDIATRICS	3	1	0	4
3.		BMICCT 803	OPHTHALMOLOGY & ENT	3	1	0	4
3.	SEC	SEC881	Dissertation (For Research Track – refer Appendix – 2)	-	-	-	10
Total Credit							22

Course Name: GYNAECOLOGY & OBSTETRICS

Mode: Offline

Credits: 5 (3L+1T)

BMICCT 801

Aim of the course:

The aim of the course "Gynaecology & Obstetrics for Critical Care Students" is to provide undergraduate students of the Critical Care Department with foundational knowledge and practical insights into the anatomy, physiology, and pathological conditions related to the female reproductive system, pregnancy, childbirth, and associated emergencies.

Course Objective:

- Understand normal and abnormal reproductive health conditions.
- Recognize and respond to obstetric and gynecological emergencies in a critical care setting.
- Collaborate effectively with obstetric teams in managing high-risk maternal and neonatal cases.
- Apply essential clinical skills in monitoring and supporting women during the antenatal, intrapartum, and postpartum periods.

Sr no.	Graduate attributes	Mapped Modules
CO 1	Foundations of Female Reproductive Health	MODULE I
CO 2	Essentials of Obstetrics and Antenatal Care	MODULE II
CO 3	Obstetric and Gynaecologic Emergencies in Critical Care	MODULE III

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Learning objectives:

- ✓ Define key terminologies related to gynaecology and obstetrics, including terms associated with pregnancy, labor, and female reproductive health.
- ✓ Label and explain the anatomy and physiology of the female reproductive system and menstrual cycle.
- ✓ List and describe the common signs, symptoms, and management principles of gynecological conditions such as PCOS, PID, and menstrual disorders.
- ✓ Summarize the physiological changes during pregnancy and stages of fetal development across the trimesters.

Module Number	Content	Total Hours	% of questions	Bloom Level (applicable)	Remarks, if any
THEORY					
M I	Foundations of Female Reproductive Health	15	50		NA
M II	Essentials of Obstetrics and Antenatal Care	15	25		NA
M III	Obstetric and Gynaecologic Emergencies in Critical Care	15	25		NA
Total Theory		45	100		
TUTORIAL		15			
TOTAL		60			

Detailed syllabus:

MODULE I: Foundations of Female Reproductive Health

1. Anatomy and Physiology of the Female Reproductive System

- Overview of external and internal genitalia
- Menstrual cycle: hormonal regulation and phases
- Puberty and menopause: physiological changes and management

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2. Common Gynecological Conditions and Disorders

- Dysmenorrhea, amenorrhea, menorrhagia, and polymenorrhagia
- Polycystic Ovary Syndrome (PCOS): pathophysiology and implications
- Endometriosis and pelvic inflammatory disease (PID)

3. Diagnostic Tools in Gynecology

- Ultrasonography basics
- Pap smear and cervical cancer screening
- Basic laboratory tests in gynecology

MODULE II: Essentials of Obstetrics and Antenatal Care

1. Physiology of Pregnancy and Maternal Adaptations

- Trimesters of pregnancy and systemic changes
- Fetal growth and development overview

2. Antenatal Care and Risk Assessment

- Routine antenatal visits and assessments
- Screening for high-risk pregnancies (e.g., gestational diabetes, preeclampsia)
- Immunization and supplementation during pregnancy

3. Labour and Delivery Overview

- Stages of labor and their management
- Normal vaginal delivery and pain relief methods
- Role of the critical care nurse during labor and delivery support

MODULE III: Obstetric and Gynecologic Emergencies in Critical Care

1. Obstetric Emergencies: Identification and Initial Response

- Eclampsia, antepartum and postpartum hemorrhage
- Preterm labor, uterine rupture, cord prolapse
- Puerperal sepsis and emergency cesarean section support

2. Critical Care in Postpartum Period

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- Monitoring vital signs and early warning scores
- Postpartum complications: hemorrhage, infections, thromboembolism
- Neonatal resuscitation basics and mother-baby ICU coordination

3. Gynecological Emergencies and Critical Management

- Ectopic pregnancy: recognition and emergency response
- Ovarian torsion, ruptured ovarian cyst
- Management of patients with gynecological malignancies in critical care

Suggested Books:

DC Dutta's Textbook of Obstetrics by Author: Hiralal Konar

DC Dutta's Textbook of Gynaecology by Author: Hiralal Konar

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Course Name: CLINICAL MANIFESTATION OF PEDIATRICS

Mode: Offline

Credits: 5 (3L+1T)

BMICCT 802

Aim of the course:

The aim of the course "Clinical Manifestation of Pediatrics" is to equip undergraduate critical care students with foundational knowledge and clinical insight into the common and critical signs and symptoms of pediatric illnesses. The course emphasizes the early recognition, systematic assessment, and interpretation of clinical manifestations in children to support timely and effective interventions in pediatric critical care settings.

Course Objective:

- Identify normal and abnormal growth and developmental patterns in pediatric patients, and recognize early warning signs of developmental delays.
- Recognize and interpret key clinical manifestations of common acute and chronic pediatric conditions affecting various organ systems.
- Assess pediatric patients systematically to differentiate between normal physiological variations and signs of critical illness.
- Apply foundational knowledge of pediatric symptomatology to assist in early diagnosis, triage, and care planning in critical care settings.

Sr no.	Graduate attributes	Mapped Modules
CO 1	Pediatric Growth, Development, and Systemic Manifestations	MODULE I
CO 2	Acute and Chronic Pediatric Conditions – Clinical Presentation in Critical Care	MODULE II

Learning objectives:

- Describe the age-specific clinical features of common pediatric illnesses affecting the respiratory, cardiovascular, gastrointestinal, neurological, and hematological systems.

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- Demonstrate the ability to assess pediatric patients using growth charts, developmental screening tools, and clinical observation techniques.
- Identify critical signs and symptoms that require immediate intervention or referral in pediatric patients.
- Differentiate between common and life-threatening pediatric conditions based on clinical presentations relevant to critical care environments.

Module Number	Content	Total Hours	% of questions	Bloom Level (applicable)	Remarks, if any
THEORY					
M I	Pediatric Growth, Development, and Systemic Manifestations	23	50		NA
M II	Acute and Chronic Pediatric Conditions – Clinical Presentation in Critical Care	22	50		NA
Total Theory		45	100		
TUTORIAL		15			
TOTAL		60			

Detailed syllabus:

MODULE I: Pediatric Growth, Development, and Systemic Manifestations

1. Overview of Pediatric Growth and Development

- Normal milestones: motor, cognitive, language, and social
- Growth charts and developmental red flags
- Differences between neonates, infants, toddlers, and adolescents

2. Nutritional Deficiencies and Manifestations

- Clinical signs of undernutrition and overnutrition
- Vitamin and mineral deficiency symptoms (e.g., rickets, anemia, scurvy)

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- Impact on systemic development

3. Pediatric Respiratory Manifestations

- Signs of respiratory distress in children
- Common respiratory conditions: bronchiolitis, pneumonia, asthma
- Critical care interventions in pediatric respiratory emergencies

4. Cardiovascular Presentations in Pediatrics

- Congenital heart diseases: cyanotic and acyanotic features
- Signs of pediatric heart failure
- Peripheral signs: cyanosis, clubbing, edema

MODULE II: Acute and Chronic Pediatric Conditions – Clinical Presentation in Critical Care

1. Gastrointestinal and Hepatic Manifestations

- Vomiting, diarrhea, constipation: evaluation and red flags
- Dehydration signs and assessment in children
- Pediatric jaundice and hepatomegaly

2. Neurological Signs and Symptoms in Children

- Seizures: types and age-related features
- Signs of raised intracranial pressure
- Meningitis, encephalitis: clinical clues and differential diagnosis

3. Infectious Diseases and Pediatric Fever Patterns

- Fever without focus: approach and differential
- Rash-associated illnesses: measles, chickenpox, dengue
- Sepsis in pediatrics: signs and critical care relevance

4. Hematological and Oncological Presentations

- Pallor, bruising, petechiae: evaluation of hematological issues
- Leukemia, lymphoma: early warning signs
- Critical signs in hemophilia and anemia

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Suggested Books:

- ✓ **Nelson Textbook of Pediatrics** by Authors: Robert M. Kliegman, Bonita F. Stanton, Joseph St. Geme, Nina F. Schor
- ✓ **Essentials of Pediatrics** by Author: S.S. Shirol

Course Name: OPHTHALMOLOGY & ENT Mode:

Offline

Credits: 4 (3L+1T)

BMICCT 803

Aim of the course:

To equip critical care students with fundamental knowledge and clinical understanding of Ophthalmology and Otorhinolaryngology (ENT) relevant to the intensive care setting. This course aims to develop the ability to recognize, assess, and assist in the initial management of common and life-threatening eye and ENT conditions encountered in critical care. Emphasis is placed on the integration of systemic disease manifestations, emergency response, and interdisciplinary collaboration, enabling students to contribute effectively in high-dependency environments.

Course Objective:

- Understand the basic anatomy and physiology of the eye relevant to clinical practice and critical care.
- Identify and describe common ocular emergencies encountered in ICU and emergency settings.
- Understand the anatomy and physiology of the ear, nose, and throat with a focus on critical care relevance.
- Recognize and respond to ENT emergencies, such as airway obstruction, epistaxis, and facial trauma.
- Identify ENT conditions associated with systemic illnesses and infections in critically ill patients.

Sr no.	Graduate attributes	Mapped Modules
CO 1	Foundations of Ophthalmology and ENT for Critical Care	MODULE I
CO 2	Ocular & ENT Conditions and Their Critical Care Implications	MODULE II
CO 3	Diagnostic Tools and Interventions in Ophthalmology and ENT	MODULE III

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CO 4	Infection Control, Emergency Protocols, and Interdisciplinary Care	MODULE IV
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Learning objectives:

- Understand the basic anatomy and physiology of the eye relevant to clinical and emergency settings.
- Recognize common ocular manifestations of systemic diseases like hypertension, diabetes, and sepsis.
- Identify and manage basic ocular emergencies, including red eye, trauma, and sudden vision loss.
- Understand the anatomy and physiology of the ear, nose, throat, and airway with a focus on critical care relevance.
- Recognize and respond to ENT emergencies, including airway obstruction, epistaxis, and facial trauma.
- Identify ENT-related complications of systemic conditions and ICU treatments.

Module Number	Content	Total Hours	% of questions	Bloom Level (applicable)	Remarks, if any
THEORY					
M I	Foundations of Ophthalmology and ENT for Critical Care	12	25		NA
M II	Ocular & ENT Conditions and Their Critical Care Implications	11	25		NA
M III	Diagnostic Tools and Interventions in Ophthalmology and ENT	11	25		NA
M IV	Infection Control, Emergency Protocols, and Interdisciplinary Care	11	25		NA
Total Theory		45	100		
TUTORIAL		15			
TOTAL		60			

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Detailed syllabus:

MODULE I: Foundations of Ophthalmology and ENT for Critical Care

Unit 1: Ophthalmology:

- Introduction to the Anatomy and Physiology of the Eye
- Common Eye Diseases in Critical Care: An Overview
- Ocular Manifestations of Systemic Diseases (e.g., diabetes, hypertension, sepsis)
- Basic Ocular Pharmacology for ICU Practice

Unit 2: ENT:

- Anatomy and Physiology of the Ear, Nose, and Throat
- ENT Emergencies: Identification and Initial Response
- ENT Manifestations of Systemic Illness
- Introduction to ENT Instruments and Procedures in ICU Settings.

MODULE II: Ocular & ENT Conditions and Their Critical Care Implications

Unit 1: Ophthalmology: -

- Acute Red Eye: Differential Diagnosis and ICU Management
- Sudden Vision Loss in Critical Settings: Causes and Protocols
- Traumatic Eye Injuries: First Aid and Stabilization in Emergency Rooms
- Monitoring and Managing Raised Intracranial Pressure via Ocular Clues (e.g., papilledema)

Unit 2: ENT: -

- Acute Upper Airway Obstruction: Assessment and Airway Management
- Epistaxis (Nosebleed) in Critically Ill Patients
- Facial Trauma and ENT Complications in ICU
- Otitis Media and Mastoiditis: When They Become Life-Threatening

MODULE III: Diagnostic Tools and Interventions in Ophthalmology and ENT

Unit 1: Ophthalmology: -

- Use of Ophthalmoscope in Critical Care: Basic Techniques
- Bedside Eye Examination in Non-cooperative or Unconscious Patients
- Fundoscopy in Diagnosis of Hypertensive and Diabetic Retinopathy
- Application of Ocular Ultrasound in the ICU

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Effective from academic session 2023-24

Unit 2: ENT: -

- Use of Nasal and Oropharyngeal Airway Devices in Emergency
- Tracheostomy: Indications, Care, and Complications
- Nasal Endoscopy and Laryngoscopy: Overview and Critical Applications
- Imaging in ENT (X-ray, CT, MRI): Identifying Critical Pathologies

MODULE IV: Infection Control, Emergency Protocols, and Interdisciplinary Care

Unit 1: Ophthalmology:

- ICU-Associated Eye Complications (e.g., exposure keratopathy)
- Ocular Infections in Immunocompromised Patients
- Infection Control Practices in Eye Care within ICU
- Interdisciplinary Approach: Working with Ophthalmologists in Critical Cases

Unit 2: ENT:

- Management of ENT Infections in ICU (e.g., Ludwig's angina, peritonsillar abscess)
- ICU Protocols for ENT Bleeding and Airway Edema
- Preventing Hospital-Acquired ENT Infections (e.g., ventilator-associated sinusitis)
- ENT Consultation in Polytrauma and Neurosurgical Cases

Suggested Books:

- Ophthalmology for Undergraduate Students by Author: AK Khurana
- Basic Ophthalmology by Author: American Academy of Ophthalmology (AAO)
- ENT for Students and Practitioners by Author: K. K. Ramalingam
- Essentials of Ear, Nose, Throat by Author: Mohan Bansal