



Jordan University of Science and Technology
Faculty of Applied Medical Sciences
Anesthesia Technology Department

ANET334 Mechanical Ventilation - JNQF Level: 7

Second Semester 2023-2024

Course Catalog

3 Credit Hours. This course provides anesthesia technicians with comprehensive knowledge and skills necessary for the effective management of mechanical ventilation during anesthesia procedures. Through a combination of lectures, demonstrations, and hands-on practice, students will learn about different types of mechanical ventilators, modes of ventilation, patient monitoring, troubleshooting, and safety considerations.

Teaching Method: On Campus

Text Book

Title	The Anesthesia Technologist's Manual
Author(s)	Emily Guimaraes , Matthew Davis , Jeffrey R. Kirsch MD , Glenn Woodworth MD
Edition	2nd Edition
Short Name	Ref # 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #2	Morgan and Mikhail's Clinical Anesthesiology	David C. Mackey, John D. Wasnick, and John F. Butterworth	6th Edition	

Instructor

Name	Dr. Mahmoud Altawalbih
Office Location	-
Office Hours	
Email	mhaltawalbih@just.edu.jo

Class Schedule & Room
Section 3: Lecture Time: Mon, Wed : 13:00 - 14:30 Room: SB13

Prerequisites		
Line Number	Course Name	Prerequisite Type
1173310	ANET331 Anesthesia Equipment And Supplies li	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2	? Syllabus review. Course overview. ? Respiratory physiology and anesthesia ? Airway management	
Week 3	? Introduction to Mechanical Ventilation ? Basic concepts and principles ? History and evolution of mechanical ventilation ? Importance of mechanical ventilation in anesthesia	From Ref # 1
Weeks 4, 5	? Types of Mechanical Ventilators ? Classification of ventilators (e.g., pressure-controlled, volume-controlled) ? Overview of ventilator components and settings	From Ref # 1, From Ref #2
Weeks 6, 7	? Modes of Ventilation ? Assist-control ventilation ? Pressure support ventilation ? Synchronized intermittent mandatory ventilation (SIMV) ? Other advanced modes (e.g., APRV, PCV)	From Ref # 1, From Ref #2
Weeks 8, 9	? Patient Monitoring and Assessment ? Physiological parameters (e.g., tidal volume, respiratory rate, compliance) ? Arterial blood gas interpretation ? Pulse oximetry and capnography	From Ref # 1, From Ref #2
Weeks 10, 11	? Ventilator Setup and Operation ? Initial setup and calibration ? Ventilator alarms and alarm management ? Ventilator weaning protocols	From Ref # 1, From Ref #2
Week 12	? Troubleshooting and Complications ? Common ventilator malfunctions and troubleshooting steps ? Barotrauma and volutrauma ? Ventilator-associated pneumonia (VAP) prevention strategies	From Ref # 1, From Ref #2
Week 13	? Safety and Infection Control ? Ventilator circuit management ? Hand hygiene and personal protective equipment (PPE) ? Environmental control and equipment sterilization	From Ref # 1, From Ref #2

Week 14	? Case Studies and Simulation	From Ref # 1, From Ref #2
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Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Describe the physical aspects of mechanical ventilation [1PLO 1, 1PLO 4] [1L7K1, 1L7S1, 1L7S2, 1L7S3]	30%	First Exam, Second Exam, Final Exam, Class Activities and participation
Describe the use, types, and characteristics of monitoring devices [1PLO 2, 1PLO 3, 1PLO 5] [1L7K1, 1L7S1, 1L7S2, 1L7S3]	30%	First Exam, Second Exam, Final Exam, Class Activities and participation
Describe the physiological effects and complications of mechanical ventilation [1PLO 1, 1PLO 3, 1PLO 4] [1L7K1, 1L7S1, 1L7S2, 1L7S3]	40%	First Exam, Second Exam, Final Exam, Class Activities and participation

Relationship to Program Student Outcomes (Out of 100%)					
PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
28.33	10	23.33	28.33	10	

Relationship to NQF Outcomes (Out of 100%)			
L7K1	L7S1	L7S2	L7S3
25	25	25	25

Evaluation	
Assessment Tool	Weight
First Exam	25%
Second Exam	25%
Final Exam	40%
Class Activities and participation	10%

Policy

Academic conduct	<p>Statement on Professionalism Professional behavior is expected of students at all times. Attitude and professional behavior are a minimum criterion for passing this class. Examples of unprofessional behavior include but are not limited to: missing classes, tardiness, lack of attention for a speaker, talking to others during the lecture, leaving a lecture before its completion without prior authorization of the instructor, working on other class material during class, and sleeping during class.</p> <p>Attendance: Class attendance is mandatory to develop scholarly discussion and argumentation skills. If you cannot attend class, you must submit appropriate documentation with an excused absence request. JUST policy requires the faculty member to assign ZERO (Grade: 35) if a student misses 10% of the classes that are not excused.</p> <p>Cheating: The standards of JUST policy will be applied: المادة 7 : اذا ضبط الطالب أثناء الإمتحان أو الإختبار متلبساً بالغش فتوقع عليه العقوبات التالية مجتمعة أ. اعتباره راسياً في ذلك الإمتحان أو الإختبار ب. الغاء تسجيله في بقية المساقات المسجل لها في ذلك الفصل ج. فصله من الجامعة لمدة فصل دراسي واحد وهو الفصل التالي للفصل الذي ضبط فيه</p> <p>Cell phone: The use of cellular phones is prohibited in classrooms and during exams. The cellular phone must be switched off in classrooms and during exams. ?</p> <p>Make-up Exam: Make-up exams are entitled for students who miss the exam with accepted legal or medical excuse endorsed by the instructor within 24 hours after the scheduled exam (Please review university regulation for more details)</p> <p>Feedback: Communication of concerns, complaints, questions, and/or feedback are appreciated and are important for improving the students learning experience. Please use the professional channels to address any issue or concern (ie., e-mail)</p>
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