



Jordan University of Science and Technology

Faculty of Applied Medical Sciences

Department of Allied Medical Sciences

2020/2021

Study Plan of Bachelor's degree in Anesthesia Technology

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Vision:

The vision of the department is to lead, through academic and research excellence, regional and national health care delivery in the field of radiological sciences, optometry, paramedicine and anesthesia technology.

Mission:

Consistent with the mission of J.U.S.T. our mission is to prepare graduates as competent anesthesia technologists with the ability for lifelong learning and leadership management skills that will benefit the healthcare community.

Objectives:

1. To provide graduates with the knowledge and skills that are needed to become as qualified anesthesia technologist practitioners ready to work in anesthesia medical care under the direct supervision of anesthesiologist / anesthesiologist physician doctor or specialist in a general hospital settings, anesthesiology departments, intensive care units, interventional and diagnostic radiology, labor and delivery units, outpatient procedure suites, ambulatory surgery centers, operating rooms and emergency rooms.
2. To provide an educational experience that develops the graduate's intellectual ability in order to facilitate the development of independent judgment and problem-solving skills.
3. To provide graduates to demonstrate various cognitive and communication skills that promote them to succeed in their professional careers through multi-disciplinary team, proactive involvement, critical thinking, ethical behavior and responsibility, and influential roles in their organizations and communities.
4. To identify opportunities for anesthesia technology research and utilize its results and findings in evidence-based anesthesia practice.
5. To provide graduates with that demonstrate self-professional development and life-long learning.

Job opportunities: the department of Allied Medical Sciences prepares the graduates in the anesthesia technology program to work in the following fields:

1. Anesthesia technologist practitioner in health care delivery in general and specialized health care services at public or private sectors.

- Pursuing a graduate studies for faculty positions in schools and colleges of anesthesiology medical care

Study Plan of Bachelor degree in Anesthesia Technology

Numbering and coding system of courses of the study plan.

Course Coding

The following codes are used to designate courses:

Department				Level/year	Field	Sequence
A	B	C	D	x	y	z

The Department codes are as follows:

Code	Department	Code	Department
PARA	Paramedic	AS	Audiology and Speech Therapy
PT	Physical Therapy	RA	Radiologic Technology
OT	Occupational Therapy	ADS	Allied Dental Sciences
OPT	Optometry	LM	Medical Laboratory Sciences
TDEN	Dental Technology	RTH	Respiratory Therapy
ANET	Anesthesia Technology		

Course Numbering

- The anesthesia technology courses are tabulated and numbered in such a manner to recognize each course regarding its subject area, year or level, and semester offered.
- Ex. ANT xyz: The **ANET** symbol in the course number denotes Anesthesia Technology and (xyz) is a 3-digits number:

A. The first digit denotes the year level of the course according to student's study plan as follows:

Code	Level/year
1	First
2	Second
3	Third
4	Fourth

B. The second digit denotes the course field subject as follows:

Number	Specialization
0	Introductory and Basic Anesthesia Technology
1	Investigation Procedures & Techniques
2	Surgery
3	Anesthesia Equipment & Supplies
4	Critical & Medical Cases
5	Clinical Training
6	Anesthesia Pharmacology
7	Advanced Anesthesia Techniques
8	Regional Anesthesia
9	Allied Medical Sciences Courses

C. The third digit denotes sequence of semester during which the course is offered according to the study plan. In a way that odd numbers are given to the first and summer semesters while even numbers are given to second semesters. Example: ANET 104 Introduction to Anesthesia Technology means:

ANET	1	0	4
Anesthesia Technology	First year	Introductory and Basic Anesthesia Technology	Second semester

A Bachelor of Science (B.Sc.) degree in Anesthesia Technology at JUST is awarded in accordance with the statute stated by JUST regulations for B.Sc. awarding issued by the Dean's Council based on the adjusted 1987 law for awarding scientific degrees and certifications at JUST after completing (140) credit hours successfully.

The study plan composed of the following:

Classification	Credit hours		
	Compulsory	Elective	TOTAL
University requirements	16	9	25
Faculty requirements	24	-	24
Department requirements	89	-	89
TOTAL	138	9	138

A. University Requirements (25 Credit Hours)

1. **Compulsory University Courses (16 Credit Hours) as below:**
2. **Compulsory University Requirements: (16 Credit Hours)**
- 3.

Course No.	Course title	Credit hours	Theoretical	Practical	Teaching method
ARB 101	Arabic language	3	3	-	Hybrid
HSS 119	Entrepreneurship and innovation	2	2	-	Online
LG 112 ⁽¹⁾	English language 2	3	3	-	Online
HSS 110	Social Responsibility	3	2	1	Online
MS 100 ⁽²⁾	Military sciences	3	3	-	Hybrid
HSS 129	General Skills	2	2	LG 112	Online

Notice: All non-Arabic speaking international students in the University are required to study one course in Arabic language as a substitute for ARB 101 shown below:

Course No.	Course title	Credit	Theoretical	Practical
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		hours		
ARB 101A	Fundamentals of Arabic language (for non-Arabic speaking students) as a substitute for the course ARB101 Arabic language)	3	3	-

- (1) Pre-requisite: passing LG 099 or passing English Language Placement Test with a grade > 50%.
- (2) This course is required from Jordanian students only; graded on Pass/Fail basis. Students graduating from Royal Military faculty and military candidate's school and equivalent institutes are exempted from taking this course. Non-Jordanian Arabic speaking students are required to take a substitute for this course from the elective courses and in this case the grade of this course is included in their grade point average (GPA).

4. Elective courses: (9) Credit hours selected by the students from the following list:

	Course No.	Course title	Credit hours	Theoretical	Lab
Group One: Humanities					
1.	ARB 200	Appreciation of literary texts	3	3	-
2.	HSS 103	The Palestinian issue	3	3	-
3.	HSS 115	Islam and recent problems	3	3	-
4.	HSS 116	Economic system in Islam	3	3	-
5.	HSS 121	Principles of sociology	3	3	-
6.	HSS 126	Principles of psychology	3	3	-
7.	HSS 127	Educational technology	3	3	-
8.	HSS 131	Islamic civilization	3	3	-
9.	HSS 132	The history of the city of Jerusalem	3	3	-
10.	HSS 133	Civilization and recent cultures	3	3	-
11.	HSS 135	Islamic culture	3	3	-
12.	HSS 137	Human rights	3	3	-
13.	HSS 153	Islam and contemporary challenges	3	3	-
14.	HSS 161	Contemporary problems	3	3	-
15.	HSS 211	Sociology (in English)	3	3	-

16.	HSS 213	Individual and society	3	3	-
17.	HSS 221	Introduction to psychology (in English)	3	3	-
18.	HSS 231	History of science in Islam	3	3	-
19.	HSS 251	Music tasting	3	3	-
20.	LG 106	Basic German language	3	3	-
Group two: Scientific and Agricultural					
21.	ES 103	Environnement protection (for non environnement sciences students)	3	3	-
22.	ME 102	Introduction to renewable energy	3	3	-
23.	ME 211	Fundamentals of automobile engineering (for non-ME students)	3	3	-
24.	CHE 191	Introduction to the Nanotechnology	3	3	-
25.	NF 177	Food preservation (in English)	3	3	-
26.	AP 200	Farm animal products (for non-agriculture and veterinary students)	3	3	-
27.	PP 200	Home gardens (for non-plant production and soil and irrigation students)	3	3	-
28.	PP 201	Beekeeping (for non-plant production students)	3	3	-
29.	NR 200	Natural resources and human (for non-plant production and soil and irrigation students)	3	3	-
30.	NR 207	Plant earth problems & solutions (for non-agriculture students)	3	3	-
31.	NE 200	Principles in nuclear energy and its peaceful applications	3	3	-
Group Three: Health					
32.	NUR 100	Health promotion (for non-medicine, non-nursing, and non-midwifery students)	3	3	-

33.	ADS 100	Oral and dental health (for non-dentistry and non-dentistry sciences students)	3	3	-
34.	PH 104	Community health and nutrition (for non-medicine, non-nursing, and non-midwifery students)	3	3	-
35.	NUR 109	Family health (for non-medicine, non-nursing, and non-midwifery students)	3	3	-
36.	VM 211	Animal health (not for veterinary medical and agriculture students)	3	3	-
37.	VM 212	Pet animal care (not for veterinary medical students)	3	3	-
38.	VM 213	Animal behavior and welfare	3	3	-
39.	PT 100	Wellness and life styles (for non-physical and occupational therapy students)	3	3	-
40.	OT 100	Disability and the society(not allowed for rehabilitation science dep. students)	3	3	-

B. Faculty Requirements: (24 credit hours) distributed as follows:

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite or co-request	Teaching method
ADS 491	Administration and Quality Assurance in Applied Medical Sciences	3	3	-	--	Online
BT 103	General Biology	3	3	-	--	On-campus
BT 107	General Biology Lab	1	-	1	BT 103 (or co)	Hybrid
CHEM 103	General Chemistry	3	3	-	--	On-campus

Anesthesia Technology Program

CHEM107	General Chemistry Lab	1	-	1	CHEM 103 (or co)	Hybrid
PT 218	Gross Anatomy and Histology	3	2	1	BT 103, BT 107	Hybrid
MED 230A	Human Physiology	3	3	-	BT 103	Hybrid
MED 230B	Human Physiology Lab	1	-	1	MED 230A (or co)	Hybrid
PH 311	Biostatistics	2	2	-	--	Online
PARA 391	Ethics in Applied Medical Careers	1	1	-	--	Online
LM 491	Scientific Research Methods	1	1	--		Online
LM 493	Research Project	2	2	--	LM 491	Hybrid
TOTAL		24	20	4		

C. Department requirements: (91 Credit Hours) distributed as follows:

1. Department required courses from the Faculty of Science and Arts (7 credit hours); distributed as follows:

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite (or Co)	Teaching method
BT 231	General Microbiology	3	3	-	BT 103	Hybrid
BT 232	General Microbiology Lab	1	-	1	BT 231 or Co-requisite	Hybrid
CHEM 262	Biochemistry	3	3	-	BT 103, CHEM 103	Online
TOTAL		7	6	1		

2. Department required courses from the Faculty of Medicine (12 credit hours); distributed as follows:

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite (or Co)	Teaching method
MED 255	Pharmacology	3	3	-	LM 202	Hybrid
LM 202	Pathology	3	3	-	P.T 218, MED 230A	Hybrid
MED 372	Pathophysiology	3	3	-	LM 202	Hybrid
P.T 226	Neuroscience	3	2	1	P.T 218, MED 230A	Hybrid
TOTAL		12	11	1		

3. Department required courses from the department of Allied Medical Sciences (75 credit hours); distributed as follows:

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite	Co-requisite	Teaching method
ANET 104	Introduction to Anesthesia Technology	2	2	-	--	--	Hybrid
ANET 106	Introduction to Anesthesia Technology Lab	1	-	2	--	ANET 104	On-campus
ANET 211	Preoperative Assessment and Basic Investigation	3	3	-	ANET 104	--	On-campus
ANET 213	Preoperative Assessment and Basic Investigation Lab	1	-	3	ANET 106	ANET 211	On-campus
ANET 232	Anesthesia Equipments and Supplies I	3	3	-	ANET 104	--	Hybrid
ANET 234	Anesthesia Equipments and Supplies I Lab	1	-	3	ANET 106	ANET 232	On-campus
ANET 214	Investigation Procedure and Techniques	3	3	-	ANET 211	--	On-campus
ANET 216	Investigation Procedures and Techniques Lab	1	-	3	ANET 213	ANET 214	On-campus
ANET 361	Pharmacology for Anesthesia	3	3	-	MED 255	--	Hybrid
ANET 331	Anesthesia Equipments and Supplies II	3	3	-	ANET 232	--	On-campus
ANET 333	Anesthesia Equipments and Supplies II Lab	1	-	3	ANET 234	ANET 331	On-campus
ANET 381	Regional and local Anesthesia	3	3	-	ANET 214, ANET 232	--	On-campus
ANET 351	Clinical Training I	3	-	8	ANET 216, ANET 232	--	On-campus
ANET 341	Medical Problems and their Management	3	3	-	MED 372, MED 255	--	On-campus
ANET 362	Advanced Pharmacology of Anesthesia	3	3	-	ANET 361	--	Hybrid
ANET 342	Intensive Care	3	3	-	ANET 331, ANET 341	--	On-campus
ANET 344	Intensive Care Lab	1	-	3	ANET 333, ANET 341	ANET 342	On-campus
ANET 334	Mechanical Ventilation	3	3	-	ANET 331	--	On-campus
ANET 352	Clinical Training II	3	-	8	ANET 351	--	On-campus
ANET 322	Preparation for General Surgery	3	3	-	ANET 331, ANET 341	--	On-campus
ANET 324	Preparation for General Surgery Lab	1	-	3	ANET 333	ANET 322	On-campus
ANET 326	Anesthesia for Day Surgery	1	1	-	ANET 331, ANET 381	--	On-campus

Anesthesia Technology Program

ANET 441	Anesthesia for Emergency Cases	3	3	-	ANET 331, ANET 342, ANET 341, ANET 362	--	On-campus
ANET 423	Post-Operative Pain Management	3	3	-	ANET 362, ANET 341, ANET 322	--	On-campus
ANET 453	Clinical Training III	4	-	16	ANET 352	--	On-campus
ANET 471	Advanced Anesthesia Techniques	3	3	-	ANET 331, ANET 362	--	On-campus
ANET 473	Advanced Anesthesia Techniques Lab	1	-	3	ANET 333	ANET 471	On-campus
ANET 472	Advanced Monitoring	3	3	-	ANET 342	--	On-campus
ANET 454	Clinical Training IV	4	-	16	ANET 453	--	On-campus
TOTAL		70	48	71			

Study Plan

FIRST YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite	Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite
			Lecture	Lab						Lecture	Lab		
ARB 101	Arabic language (Hybrid)	3	3	-	--	--	HSS 119	Entrepreneurship and Innovation(Online)	2	2	-	--	--
BT 103	General Biology (On-campus)	3	3	-	--	--	PT 218	Gross Anatomy & Histology (Hybrid)	3	2	2	BT 103, BT 107	--
BT 107	General Biology Lab (Hybrid)	1	-	2	BT 103 or co-requisite	--	MS 100	Military Sciences (Hybrid)	3	3	-	--	--
CHEM 103	General Chemistry (On-campus)	3	3	-	--	--	ANET 104	Introduction to Anesthesia Technology (Hybrid)	2	2	-	--	--
CHEM 107	General Chemistry Lab(Hybrid)	1	-	2	CHEM 103 or co-requisite	--	ANET 106	Introduction to Anesthesia Technology Lab (On-campus)	1	-	2	--	ANET 104
HSS 110	Social Responsibility (Online)	3	2	1	--	--	MED 230A	Human Physiology (Hybrid)	3	3	-	BT 103	--
LG 112	English language 2(Hybrid)	3	3	-	Passing LG 99 or or passing the English	--	MED 230B	Human Physiology Lab	1	-	2	BT 107	MED 230A

Anesthesia Technology Program

					Admission Exam with no less than 50%		(Hybrid)						
							HSS 129	General Skills	2	2	-	LG 112	--
TOTAL		17	15	5			TOTAL		17	14	6		

SECOND YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite	Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite
			Lecture	Lab						Lecture	Lab		
BT 231	Microbiology (Hybrid)	3	3	-	BT 103	--	MED 372	Pathophysiology (Hybrid)	3	3	-	MED 212	--
BT 232	Microbiology Lab(Hybrid)	1	-	3	BT 231or Co-requisite	--	MED 255	Pharmacology	3	3	-	MED 212	--
CHEM 262	Biochemistry (online)	3	3	-	BT 103, CHEM 103	--	ANET 232	Anesthesia Equipment and Supplies I(Hybrid)	3	3	-	ANET 104	--
LM 202	Pathology (Hybrid)	3	3	-	MED 230A, PT 218	--	ANET 234	Anesthesia Equipment and Supplies I Lab(On-campus)	1	-	3	ANET 106	ANET 232
P.T 226	Neuroscience (Hybrid)	3	2	2	MED 230A, PT 218	--	ANET 214	Investigation Procedure and Techniques(On-campus)	3	3	-	ANET 211	--
ANET 211	Preoperative Assessment and Basic Investigation (on-campus)	3	3	-	ANET 104	--	ANET 216	Investigation Procedures and Techniques Lab(On-campus)	1	-	3	ANET 213	ANET 214
ANET 213	Preoperative Assessment and Basic Investigation Lab(On-campus)	1	-	3	ANET 106	ANET 211		University Elective(Hybrid)	3	3	-	--	--
							PARA 391	Ethics in Applied Medical Careers (Online)	1	1	-	--	--
TOTAL		17	14	8			TOTAL		18	16	6		

THIRD YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite	Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite
			Lecture	Lab						Lecture	Lab		
ANET 361	Pharmacology for Anesthesia(Hybrid)	3	3	-	MED 255	--	ANET 362	Advanced Pharmacology of Anesthesia(On-campus)	3	3	-	ANET 361	--
ANET 331	Anesthesia Equipment and Supplies II(On-campus)	3	3	-	ANET 232	--	ANET 342	Intensive Care(On-campus)	3	3	-	ANET 331, ANET 341	--
ANET 333	Anesthesia Equipments and Supplies II Lab (On-campus)	1	-	3	ANET 234	ANET 331	ANET 344	Intensive Care Lab(On-campus)	1	-	3	ANET 333, ANET 341	ANET 342
ANET 381	Regional and Local Anesthesia(On-campus)	3	3	-	ANET 214, ANET 232	--	ANET 334	Mechanical Ventilation(On-campus)	3	3	-	ANET 331	--
ANET 351	Clinical Training I(On-campus)	3	-	8	ANET 216, ANET 232	--	ANET 352	Clinical Training II(On-campus)	3	-	8	ANET 351	--
ANET 341	Medical Problems and their Management(On-campus)	3	3	-	MED 372, MED 255	--	ANET 322	Preparation for General Surgery(On-campus)	3	3	-	ANET 331, ANET 341	--
PH 311	Biostatistics(Online)	2	2	-	--	--	ANET 324	Preparation for General Surgery Lab(On-campus)	1	-	3	ANET 333	ANET 322

Anesthesia Technology Program

							ANET 326	Anesthesia for Day Surgery(On-campus)	1	1	-	ANET 331, ANET 381	--
TOTAL		18	14	11			TOTAL		18	13	14		

FOYRTH YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite	Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite
			Lecture	Lab						Lecture	Lab		
ANET 441	Anesthesia for Emergency Cases(On-campus)	3	3	-	ANET 331, ANET 342, ANET 341, ANET 362	--	ANET 472	Advanced Monitoring(On-campus)	3	3	-	ANET 342	--
ANET 423	Post-Operative Pain Management(On-campus)	3	3	-	ANET 362, ANET 341, ANET 322	--	ANET 454	Clinical Training IV(On-campus)	4	-	16	ANET 453	--
ANET 453	Clinical Training III(On-campus)	4	-	16	ANET 352	--	LM 493	Research Project(Hybrid)	2	2	-	ANET 491	--
LM 491	Scientific Research Methods (Online)	1	1	-	PH 311	--		University Elective (Hybrid)	3	3	-	--	--
ANET 471	Advanced Anesthesia Techniques(On-campus)	3	3	-	ANET 331, ANET 362	--		University Elective (Hybrid)	3	3	-	--	--
ANET 473	Advanced Anesthesia Techniques Lab(On-campus)	1	-	3	ANET 333	ANET 471	ADS 491	Administration and Quality Assurance in Applied Medical Sciences (Online)	3	3	-	--	
TOTAL		15	10	19			TOTAL		18	14	16		

Course Description

ANET 104 Introduction to Anesthesia Technology (2 Credit Hours)

This course is an introduction to the role of the Anesthesia Technologist and their relationship to other Healthcare Professionals. In addition, the student will be introduced to the theory and concepts of functioning in a surgical environment including a fundamental understanding of a variety of anesthesia equipment/supplies and basic case set-up.

ANET 106 Introduction to Anesthesia Technology Lab (1 Credit Hours) (Co-requisite ANET 104)

This course delivers the primary exposures to the anesthesia practice and the anesthesia equipment's/supplies encountered in the surgical environment as well as the primary exposure to the surgical department, how to take case history, Nursing, how to deal with equipment and machines, patient care.

ANET 211 Preoperative Assessment and Basic Investigation(Credit Hours 3) (Prerequisite ANET 104)

This course delivers the knowledge necessary to perform the preoperative assessment and the utilization of basic investigation techniques in the assessment process, thus, this course will lay the foundations necessary to following investigations courses. Documentation of the condition(s) for which surgery is needed. Assessment of the patient's overall health status, uncovering of hidden conditions that could cause problems both during and after surgery, perioperative risk determination, optimization of the patient's medical condition in order to reduce the patient's surgical and anesthetic perioperative morbidity or mortality, development of an appropriate perioperative care plan, education of the patient about surgery, anesthesia, intraoperative care and postoperative pain treatments in the hope of reducing anxiety and facilitating recovery, reduction of costs, shortening of hospital stay, reduction of cancellations and increase of patient satisfaction.

ANET 213 Preoperative Assessment and Basic Investigation Lab (1 Credit Hour) (Prerequisite ANET 106) (Co-requisite ANET 211)

This course will focus on delivering the skills necessary to perform a complete and comprehensive preoperative assessment to the patients and also to master the basic skills of investigation. Special focus will be guided towards documentation and history taking. Training will take place in real-life-like environment that simulates realistic setting with high-fidelity mannequins.

ANET 232 Anesthesia Equipment and Supplies I (3 Credit Hours) (Prerequisite ANET 104)

This course focuses on the equipment and instrumentation utilized in providing anesthesia. Topics to be covered include the anesthesia machine, airway equipment and basic set-up. In addition, ancillary equipment including but not limited to gas cylinders, hospital gas supply lines, ventilators, absorbers, and pulse oximetry will be covered. Set-up, calibration, operation, basic troubleshooting, maintenance, and safety checks will be examined.

ANET 234 Anesthesia Equipments and Supplies I Lab (1 Credit Hour) (Prerequisite ANET 106) (Co-Requisite ANET 232)

This course delivers the skills necessary to deal with the equipment and supplies discussed in the theoretical course. Didactic and laboratory instruction are provided to prepare the student with cognitive, psychomotor, and affective learning related to anesthesia technology basic instrumentation. Training will take place in real-life-like environment that simulates realistic setting with high-fidelity mannequins.

ANET 214 Investigation Procedure and Techniques (3 Credit Hours) (Prerequisite ANET 211)

This course reviews the basic investigation techniques addressed in previous courses and discusses in depth advanced investigation procedures and techniques in integrative way with the patient assessment, to train the students on conducting the assessment and the Patient Assessment (pre-operative visit, History, physical Examination), Drugs and premedication (analgesics, sedatives,...), Techniques (Inhalation, TIVA, pumps), and emergency

ANET 216 Investigation Procedures and Techniques Lab (1 Credit Hour) (Prerequisite ANET 213) (Co-requisite ANET 214)

This course delivers the skills necessary to perform investigation procedures and techniques discussed in the theoretical course. Training will be conducted through scenarios that simulate real-life settings using high-fidelity mannequins.

ANET 361 Pharmacology for Anesthesia (3 Credit Hours) (Prerequisite MED 255)

This course focuses on the pharmacokinetics and pharmacodynamics of drugs used in the administration of anesthesia and analgesia. Topics covered Drug receptors, Toxicity and effect on the body system, Rout of drug administration, Doses and factor affecting dosing of drug, Old and new inhalation anesthesia (Ether, Isoflurane, etc...), Premedication drug, Local anesthesia, Opioids, muscle relaxant Additionally, a review of the nervous system will be presented.

ANET 331 Anesthesia Equipments and Supplies II (3 Credit Hours) (Prerequisite ANET 232)

This course provides instruction and lab application to the theories and concepts of advanced anesthesia equipment used in complex anesthesia situations. Topics include Point of Care Technology, Invasive monitoring and transducers, thromboelastograph, cell saver, rapid volume infuser, IABP's transport monitoring, NMB assessment, VADs, defibrillators, pacemakers, implantable defibrillators and others.

ANET 333 Anesthesia Equipments and Supplies II Lab (1 Credit Hour) (Prerequisite ANET 234) (Co-requisite ANET 331)

This course delivers the skills necessary to deal with the equipment and supplies discussed in the theoretical course. Didactic and laboratory instruction are provided to prepare the student with cognitive, psychomotor, and affective learning related to anesthesia technology advanced instrumentation. Training will take place in real-life-like environment that simulates realistic setting with high-fidelity mannequins.

ANET 381 Regional and local Anesthesia (3 Credit Hours) (Prerequisites ANET 214, ANET 232)

This course will concentrate on the concepts, rules, and regulations controlling local & regional anesthesia and the use of medications in addition to managing the anesthesia tools and controlling patient's factors and the role of the anesthesia assistant technician in the process of instruments knowledge and preparations.

ANET 351 Clinical Training I (3 Credit Hours) (Prerequisites ANET 216, ANET 232)

This course focuses on refining patient management skill, establishing independence in performing basic tasks and introducing advanced skills. Students gain additional clinical experience in the operating room. In this course it is expected students will be successful in performing basic clinical competencies with minimal assistance from clinical instructors, while attempting advanced competencies with frequent assistance.

ANET 341 Medical Problems and their Management (3 Credit Hours) (Prerequisites MED 372, MED 255)

This course covers the different medical problems and how to assess, recognize and manage them, linking them to the different aspects of anesthesia considering any special considerations. This course will also discuss in depth emergency cases how to recognize them and how to manage them including difficult airway algorithms, malignant hyperthermia, fire in the operating room, ACLS, PALS, traumatic resuscitation, anaphylaxis, and local anesthesia toxicity.

ANET 362 Advanced Pharmacology of Anesthesia (3 Credit Hours) (Prerequisites ANET 361)

This course is considered with delivery of knowledge to specific anesthetic drugs and their clinical use by the anesthesia provider. This course will also handle in detail the pharmacological principles as applied to the clinical practice of anesthesia. Topics include pharmacodynamics, anesthetic agents, accessory drugs, and drug interactions.

ANET 342 Intensive Care (3 Credit Hours) (Prerequisites ANET 331, ANET 341)

This course will be considered with recognition, assessment and managing the different critical and emergency cases. Special consideration will be given to the interpretation of diagnostic laboratory results, ECG, imaging techniques applied in the intensive care unit and the CCU along with the advanced equipment utilized in these departments with regard to anesthesia practice.

ANET 344 Intensive Care Lab (1 Credit Hour) (Prerequisites ANET 333, ANET 341) (Co-requisites ANET 342)

This course provides the skills necessary to recognize and manage life-threatening emergencies normally encountered in the anesthesia practice on an advanced level.

ANET 334 Mechanical Ventilation (3 Credit Hours) (Prerequisites ANET 331)

This course lays the foundation of respiratory care in a critical and a surgical setting, it then will discuss in great depth and detail mechanical ventilation: types, modes, clinical applications, etc. for all populations covering any special consideration. Emphasis will be given to the integration between mechanical ventilation and the physiological and pathophysiological foundations, describe the procedure of Tracheal gas insufflation, and the rationale. Describe mechanical ventilation strategies in neurological injured patients, describe bronchoscopy assisting, identify features of transport ventilators, outline mechanically ventilating a patient who has a COPD exacerbation, state the strategies for mechanically ventilating patients who have closed head injury, explain the complications of mechanical ventilation, describe multidisciplinary approaches to improve patient outcome, identify new modes of mechanical ventilation, describe the role of capnography in ICU patients, different fluid compartments in the body, state the principle of operation of high frequency ventilation, recognize different ventilator graphics. Define ventilator waveform, recognize different pathology waveform representation in the ventilator graphics.

ANET 352 Clinical Training II (3 Credit Hours) (Prerequisites ANET 351)

This course is continuation to Clinical Training I, where students engage in the management of patients undergoing general, regional or sedation anesthesia in different clinical settings.

ANET 322 Preparation for General Surgery (3 Credit Hours) (Prerequisites ANET 331, ANET 341)

This course introduces and discusses the details of preparing the patient for general surgery and performing general and sedation anesthesia in regard to the different medical cases. Special consideration will be given to complex and critical cases and to special populations.

ANET 324 Preparation for General Surgery Lab (1 Credit Hour) (Prerequisites ANET 333) (Co-requisite ANET 322)

Through real-life-like case scenarios this practical course will enable students to perform the skills discussed in the theoretical course and integrate other skills learnt in different courses in the program, which in turn enables students to have an integrated practical training to different cases requiring general or sedation anesthesia.

ANET 326 Anesthesia for Day Surgery (1 Credit Hour) (Prerequisites ANET 331, ANET 381)

This course discussed the application of anesthesia technology in the ambulatory care and the role of the anesthesia technologist in such environments along with the different cases encountered in such settings.

ANET 441 Anesthesia for Emergency Cases (3 Credit Hours) (Prerequisites ANET 331, ANET 342, ANET 341, ANET 362)

This course discussed the anesthesia practice regarding patients who are undergoing emergency surgery and the special consideration that should be considered in such cases and how to manage such cases in the anesthesia practice in an integrated approach this course will also cover emergency anesthesia for special populations.

ANET 423 Post-Operative Pain Management (3 Credit Hours) (Prerequisites ANET 362, ANET 341, ANET 322)

This course deals with the techniques and the different drugs used to manage pain after minor to major surgeries.

ANET 453 Clinical Training III (4 Credit Hours) (Prerequisites ANET 352)

This course provides advanced practitioner clinical experience for anesthesia technologists in the complex environment of neurosurgical and cardiac anesthesia. Emphasis is placed on complex anesthetics on neurosurgical and cardiac surgery patients. Upon completion, students should be able to provide anesthesia support for neurosurgical and cardiac anesthetics including setup and trouble-shooting of advanced monitoring equipment.

ANET 471 Advanced Anesthesia Techniques (3 Credit Hours) (Prerequisites ANET 331, ANET 362)

This course delivers and discussed the advanced techniques used in the anesthesia practice in regard to their clinical application and the different medical cases. Complex and major surgeries will be deeply discussed.

ANET 473 Advanced Anesthesia Techniques Lab (1 Credit Hour) (Prerequisites ANET 333) (Co-requisite ANET 471)

This course trains the students on the different skills and techniques used in anesthesia through real-life-like scenarios using high-fidelity mannequins and clinical setting which simulate those scenarios.

ANET 472 Advanced Monitoring (3 Credit Hours) (Prerequisites ANET 342)

This course covers the function and placement of non-invasive, invasive, and advanced monitoring equipment used during the administration of anesthesia. Emphasis is placed on standard monitors including blood pressure, ECG, pulse oximetry, temperature, End-Tidal CO₂, neuromuscular blockade, invasive arterial and venous monitors and other specialized equipment. Upon completion, students should be able to setup and place, or assist in placement, anesthesia monitors as well as perform basic trouble-shooting, and they will have basic knowledge of more advanced and complex equipment used in specialty anesthesia.

ANET 454 Clinical Training IV (4 Credit Hours) (Prerequisites ANET 453)

This course provides advanced practitioner clinical experience for anesthesia technologists in the highly variable environment of outside and remote locations, and subspecialty anesthesia such as obstetrics, pediatrics, and regional anesthesia. Emphasis is placed on anesthetics not performed in the typical operating room location, including: obstetrics, pediatrics, remote locations, and regional anesthesia. Upon completion, students should be able to provide anesthesia support at remote and varied locations as well as for pediatric, obstetric, and regional anesthesia.