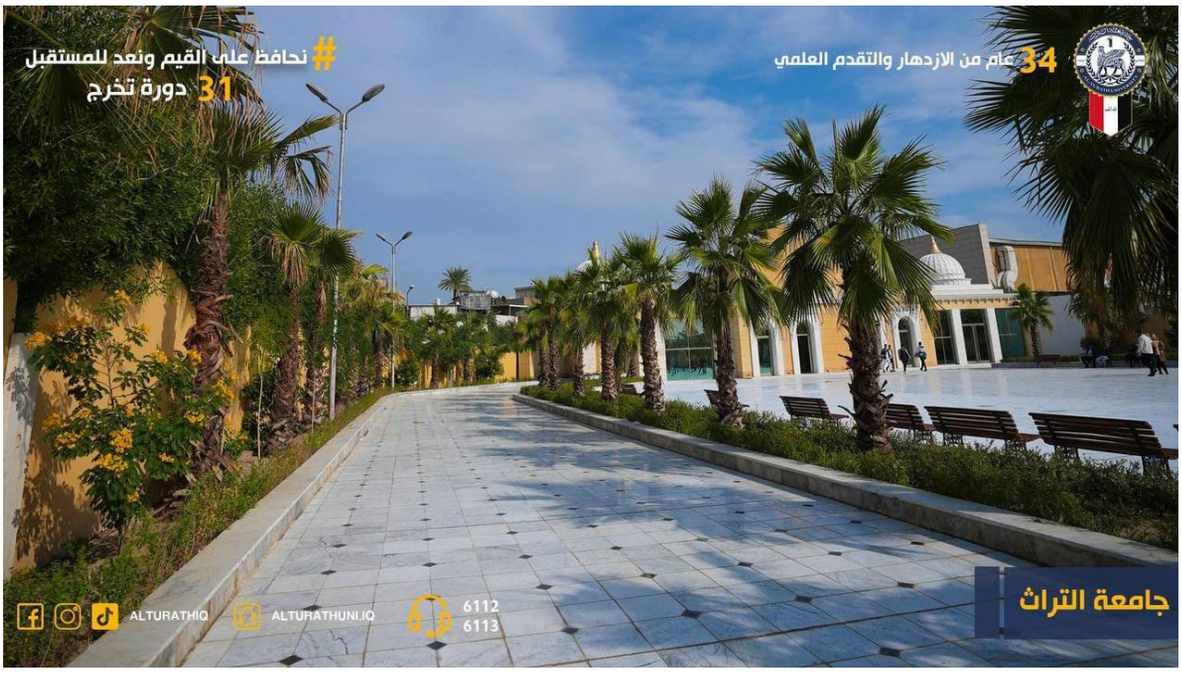
Al-Turath university

College ofEngineering

جامعة التراث / كلية الهندسة /قسم هندسة الطب الحياتي

First Cycle – Bachelor's degree (B.Sc.) – Biomedical Engineering

بكالوريوس هندسة الطب الحياتي



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.1 Mission & Vision Statement

Vision Statement Vision Statement

The academic staff at the biomedical engineering department at the University of Baghdad believe that students come to understand the discipline of Biomedical engineering through a combination of coursework, laboratory experiences, tutorials, research, and hospital field training. The department seeks to present academically, scientifically, and even practically in the local and international arena. The scientific laboratories of our departments are equipped with the latest devices and experiments in the field of medical equipment, biomechanics, biology and biochemistry in addition to electronics. Applying advanced studying and learning methods and keeping updated with the latest developments in this field, are one of our important aims, especially e-learning. Moreover, studying recent experiences in learning and working on applying them in line with the changing standards of scientific and practical requirements. Planning to build postgraduate studies with high standard quality by preparing material requirements from laboratories and others and the scientific needs of researchers, in addition to world-class researchers in the field of biomedical engineering, who own a distinguished research line and global scientific publication.

Mission Statement

Our mission is to provide a rigorous and comprehensive education in Biomedical Engineering that prepares students to excel as skilled professionals and innovators in the field. We are committed to cultivating a learning environment that fosters creativity, critical thinking and teamwork collaboration, while instilling a strong foundation in engineering principles and practices. Through hands-on experiences, Ministry of Health partnerships, and exposure to emerging technologies, we aim to equip students with the technical expertise, problem-solving abilities, and adaptability needed to tackle the challenges that they will face in hospitals and clinics. Our program is dedicated to promoting ethical and sustainable practices, empowering graduates to drive efficiency and experience, in biomedical engineering. By fostering a culture of continuous learning and a deep understanding of

the intersection between engineering and medicine, we strive to produce professionals who contribute to the advancement and transformation of the services delivered to the patients, by using technology to help people live longer, healthier and happier live, which may result in improving patient's life and raise patient satisfaction, making a positive impact on society and daily life of people.

.2 Program Specification

Programme code:	BSc-BME	**ECTS**	300
Duration:	5 levels, 10 Semesters	**Method of Attendance:**	Full Time

The biomedical engineering program is multidisciplinary field that combines mechanical and electronic engineering principles alongside medical field and apply it to human body and also medical equipment.

This course will suit you if you're interested in learning about a range of disciplines – from mechanics and biology to physiology, programming and computer aided design. This course will be rooted in practical activities across these subjects, learning in our state-of-the-art facilities and interdisciplinary community.

Level 1 provides students with a solid foundation in core areas, blending technical knowledge, problem-solving abilities, communication skills, and an understanding of ethical and social considerations. These courses lay the groundwork for further studies in biomedical engineering and prepare students for the challenges and opportunities in the field according to the college and department mission statements.

Levels 2, 3, 4 and 5 of the biomedical engineering program progressively equip students with the specialized knowledge and practical skills needed to excel in the field of biomedical engineering. Through a combination of theoretical coursework, hands-on projects, self-study tasks, group-based projects and practical experiences, students develop the expertise required to innovate, optimize, and lead in the biomedical engineering and private sector.

The research ethos is developed and fostered from the start via practicals, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars and tutorials. There is a compulsory field course at each Level, which students must pass in order to progress into other courses in the next Levels. At Level 5 all students carry out an independent research project, in 2 semesters, which has a combined weight of 8 ECTS.

Academic tutorials are held at all levels, providing continuity and progressive guidance, e.g. assessed exercises, essays and talks, seminars projects and as opportunities to practice these skills in a subject-specific context.

.3 Program Objectives

1. To graduate an engineer who is distinguished by his scientific and practical knowledge of engineering applications in all health and medical fields, and to have distinguished knowledge that gives him the ability to design, develop, maintain and operate modern medical devices, in a way that contributes to the scientific and medical movement and contributes to conducting research related to the medical and life aspects.
2. To graduate as an engineer capable of applying advanced diagnostic and therapeutic concepts associated with modern engineering technologies in the medical field.
3. To prepare students with a good medical background that enables him/her to communicate with all parties of the medical community to cover the requirements of the Iraqi Ministry of Health for this specialization.
4. To work to intensify the use of computers in all medical fields by updating and developing existing software, and creating new computer systems that are mainly directed to assisting the doctor in performing his diagnostic and therapeutic mission with advanced methods.
5. To prepare a scientific, engineering personality who can communicate with the requirements of the labor market from the private or governmental sector in the medical engineering field, self-developing and normalizing, according to supply and demand.

.4 Student Learning Outcomes

Biomedical Engineering is the application of engineering principles and techniques to the medical field. It combines the design and problem-solving skills of engineering with medicine and biological science to help improve patient health care and the quality of life of healthy individuals. The Department offers a Bachelor of Science in Biomedical Engineering with a concentration in the topics of mechanics, electronics, computing and medical-related topics. The Biomedical engineering curriculum and experiences are designed to prepare students, in part, for entry into professional health programs, graduate studies, technical careers and education.

Outcome 1

Technical knowledge

Graduates will possess a solid understanding of the principles, theories, and concepts related to biomedical engineering. They will have knowledge of electrical circuits and electronics, biomechanics, control systems, CAD, medical imaging, biomaterials and other relevant areas.

Outcome 2

Teamwork and Communication

Graduates will be able to effectively collaborate with multidisciplinary teams, in the hospitals and also the private medical sector and communicate technical information clearly and concisely. They will develop skills in teamwork, leadership, and interpersonal communication.

Outcome 3

Laboratory and Field Studies

Graduates will be able to perform laboratory experiments and project-based tasks in their studies, by using scientific equipment and computer technology while observing and learning through hands-on tasks.

Outcome 4

Data collection and analysis

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to design scientific experiments, perform data collection, analyze the collected data and draw conclusions from the analysis.

Outcome 5

Problem-solving and Critical Thinking

Graduates will be able to develop problem-solving skills and critical thinking and apply it to biomedical engineering. They will learn to identify and analyze issues, related to their field and propose effective solutions, and make informed decisions in complex technical situations.

Outcome 6

Professionalism and work ethics

Students will understand the ethical and professional responsibilities associated with biomedical engineering. While their work is mostly in contact with patients, being in the hospitals or in the private sector, they will demonstrate professionalism, integrity, and an understanding of the impact of their work on society and the patient's well-being. They will be also prepared to adapt to advancements in technology, stay updated with industry trends, and engage in self-directed learning to help to tackle challenges in the field.

.5 Academic Staff

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Credits, Grading and GPA

Al-Turath university is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب - ةيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

   CGPA of a 4-year B.Sc. degree:

   CGPA = [(1st module score x ECTS) + (2nd module score x ECTS) + ……] / 240

Curriculum/Modules .6

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BME111	Statics	63	87	6.00		
BME112	Biology	93	57	6.00		
BME113	Calculus I 1	63	87	6.00		
BME114	English Language 1	33	17	2.00		
BME115	Freedom and Democracy	33	17	2.00		
BME116	Physics	48	102	6.00		
BME117	Presentation skills	18	32	2.00		

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BME121	Electric Circuit 1			6.00		
BME122	Calculus I 2			6.00		BME113
BME123	Anatomy I			4.00		
BME124	Dynamics			3.00		
BME125	Computer Skills 1			5.00		
BME126	Introduction to Biomedical Engineering			6.00		

Contact .7

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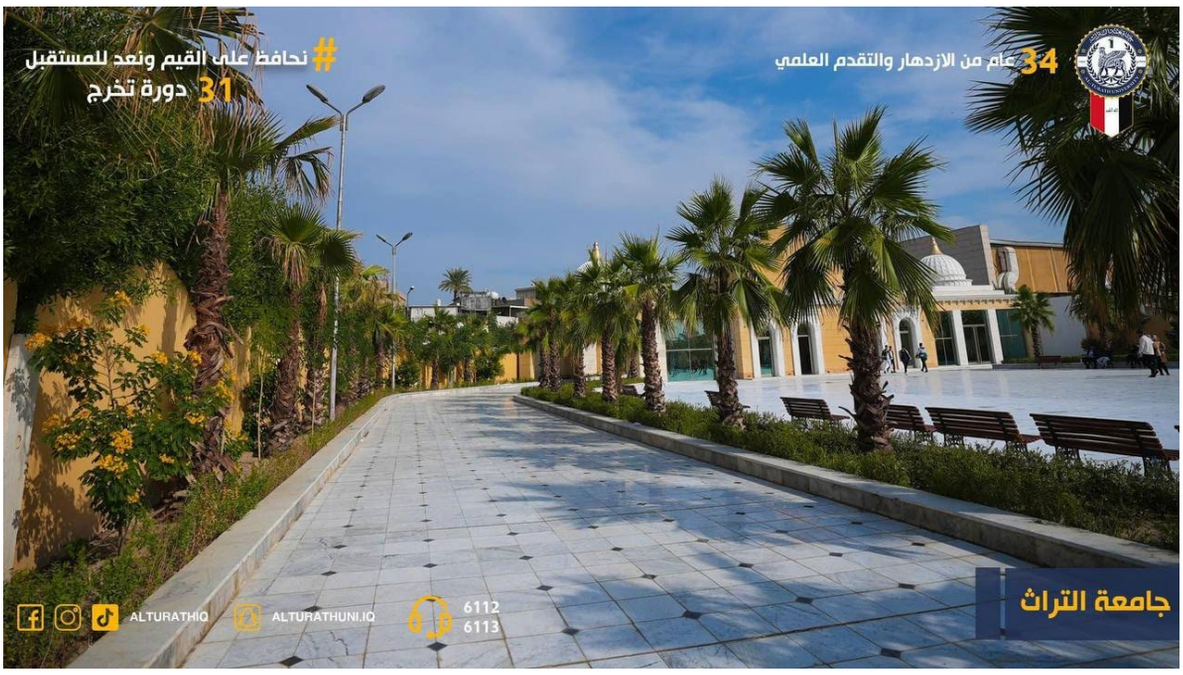
كلية الهندسة /قسم هندسة الطب الحياتي/جامعة التراث

First Cycle – Bachelor's degree (B.Sc.) – Biomedical Engineering

بكالوريوس هندسة الطب الحياتي



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1. Overview

This catalogue is about the courses (modules) given by the program of Biomedical Engineering to gain the Bachelor of Science degree. The program delivers (59) Modules with (7500) total student workload hours and 300 total ECTS. The module delivery is based on the Bologna Process.

نظره عامه

يتناول هذا الدليل المواد الدراسية التي يقدمها برنامج الهندسة الطب الحياتي للحصول على درجة بكالوريوس العلوم. يقدم البرنامج)٥٩(مادة دراسية، على سبيل المثال، مع)٧٥٠٠(إجمالي ساعات حمل الطالب و ٣٠٠ إجمالي وحدات أوروبية .يعتمد تقديم المواد الدراسية على عملية بولونيا.

2. Undergraduate Courses 2023-2024

Module 1

Code	Course/Module Title	ECTS	Semester
BME111	Statics	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	1	63	87
Description			
The Statics module is a fundamental course in engineering that focuses on the study of forces and their effects on rigid bodies in a state of static equilibrium. It covers the principles of statics, which involve the analysis of forces acting on objects at rest or in a state of constant motion. Students learn about vector quantities, such as forces and moments, and their application in solving engineering problems. The module introduces concepts like free-body diagrams, equilibrium equations, trusses, frames, and friction. In addition, students will also study moment of inertia and also work and energy. Through theoretical explanations and problem-solving exercises, students gain an understanding of how to analyze and predict the behavior of structures and objects under various loading conditions. The Statics module forms the basis for further studies in mechanics of materials, and other branches of engineering, providing students with essential skills to analyze engineering structures and systems.			

Module 2

Code	Course/Module Title	ECTS	Semester
BME112	Biology	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4	2	93	57
Description			
The goal of Biology is to explain the physical and chemical factors that are responsible for the origin, development and progression of life. Biology course present tremendous challenges to both students& teachers for acquisition of the basic facts is essential to the study of Biology, but also important for students to develop the ability to solve practical, real-life problems related to the knowledge they have acquired.			

Module 3

Code	Course/Module Title	ECTS	Semester
BME113	Calculus ll	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4		63	87
Description			
The Calculus l 1 module is a foundational course that focuses on developing mathematical skills and concepts essential for engineering applications. The module covers a wide range of mathematical topics relevant to engineering, including calculus, algebra, trigonometry, and complex numbers. Students learn how to solve mathematical problems using techniques such as differentiation, integration, solving equations, vectors, and matrices. The module emphasizes the practical application of mathematics in engineering, introducing concepts such as rates of change, optimization, and engineering modeling. The Calculus l 1 module aims to provide students with a strong mathematical foundation necessary for further studies in engineering disciplines. It enables students to apply mathematical principles and techniques to solve engineering problems, analyze data, and make informed decisions in their future engineering endeavors.			

Module 4

Code	Course/Module Title	ECTS	Semester
BME114	English Language 1	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		33	17

Description
The English Language 1 module is a foundational course that focuses on developing students' proficiency in the English language. It covers various aspects of the language, including reading, writing, listening, and speaking. The module aims to improve students' vocabulary, grammar, comprehension, and communication skills in English. Students learn to analyze and interpret different types of texts, write coherent and well-structured essays, engage in conversations, and deliver presentations in English. The module also emphasizes the development of critical thinking, cultural awareness, and effective communication strategies. Through interactive activities, discussions, and assignments, students gain confidence in their ability to use English accurately and fluently. The English Language 1 module provides a strong language foundation for students to effectively communicate in academic, professional, and everyday contexts, preparing them for further studies and enhancing their global communication abilities.

Module 5

Code	Course/Module Title	ECTS	Semester
BME115	Freedom and Democracy	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		33	17
Description			
The Freedom and Democracy module is a comprehensive course that focuses on the principles, theories, and practices related to human rights and freedoms. It provides an in-depth exploration of the fundamental rights and freedoms that all individuals are entitled to, regardless of their background, identity, or circumstances. The module covers various topics, including civil and political rights, economic and social rights, gender equality, racial and ethnic discrimination, freedom of expression, and the right to privacy. Students examine international human rights instruments and conventions, as well as the mechanisms for their enforcement and protection. They also analyze case studies and real-world examples to gain a deeper understanding of contemporary human rights issues and challenges. The module aims to foster critical thinking, empathy, and a commitment to upholding human rights, preparing students to be informed global citizens who actively contribute to promoting and protecting human dignity and equality for all.			

Module 6

Code	Course/Module Title	ECTS	Semester
BME116	Physics	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3		48	102
Description			
The Physics module is a fundamental component of the field of physics that encompasses the study of matter, energy, and their interactions. It provides a broad overview of the basic principles and laws			

governing the physical world. This module typically covers topics such as mechanics, thermodynamics, electromagnetism, optics, and modern physics. Students delve into concepts like motion, forces, energy, heat, electricity, magnetism, light, and quantum mechanics. The physics module aims to develop a conceptual understanding of the natural phenomena that surround us and to provide a foundation for more advanced topics in specialized branches of physics. Through theoretical explanations, mathematical equations, and experimental demonstrations, students gain insight into the laws that govern the physical universe and learn to apply them in practical situations.

Module 7

Code	Course/Module Title	ECTS	Semester
BME117	Presentation skills	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1		18	32
Description			
The Physics module is a fundamental component of the field of physics that encompasses the study of matter, energy, and their interactions. It provides a broad overview of the basic principles and laws governing the physical world. This module typically covers topics such as mechanics, thermodynamics, electromagnetism, optics, and modern physics. Students delve into concepts like motion, forces, energy, heat, electricity, magnetism, light, and quantum mechanics. The physics module aims to develop a conceptual understanding of the natural phenomena that surround us and to provide a foundation for more advanced topics in specialized branches of physics. Through theoretical explanations, mathematical equations, and experimental demonstrations, students gain insight into the laws that govern the physical universe and learn to apply them in practical situations.			

Module 8

Code	Course/Module Title	ECTS	Semester
BME121	Electric Circuits 1	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	2	78	72

Description
The Electrical Circuits 1 module is a core course in electrical engineering that focuses on the principles and analysis of electrical circuits. It covers the fundamental concepts and laws governing the behavior of electric currents and voltages in various circuit configurations. Students learn about basic circuit elements such as resistors, capacitors, and inductors, as well as their properties and behaviors. The module explores topics including Ohm's law, Kirchhoff's laws, circuit analysis techniques, network theorems, and transient and steady-state responses. Students also gain hands-on experience with circuit simulation software and laboratory experiments to validate theoretical concepts. The Electrical Circuits 1 module aims to provide students with a solid understanding of electrical circuits and their applications. It forms the foundation for advanced courses in electronics, power systems, and control systems, enabling students to design, analyze, and troubleshoot electrical circuits in various engineering disciplines.

Module 9

Code	Course/Module Title	ECTS	Semester
BME122	Calculus I 2	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4		63	87
Description			
The Calculus I 2 module is a continuation of the foundational course in engineering mathematics, further expanding on the mathematical concepts and techniques relevant to engineering applications. Building upon the knowledge gained in Calculus I 1, this module delves deeper into advanced topics. It covers areas such as differential equations, linear algebra, complex analysis, probability theory, and numerical methods. Students learn to apply these mathematical tools to model and solve engineering problems, analyze systems, and make informed decisions. The module emphasizes the development of analytical and problem-solving skills, as well as the ability to use tools to solve problems. The Calculus I 2 module equips students with a broader mathematical toolkit, enabling them to tackle more complex engineering challenges and advance their understanding of mathematical concepts applicable to various engineering disciplines.			

Module 10

Code	Course/Module Title	ECTS	Semester
BME123	Anatomy I	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4		63	37
Description			
The course provides a rigorous overview of upper limbs and lower limbs anatomy, muscles of the pectoral and back of the body, gluteal region and chest cavity thoracic wall physiology and pathophysiology, The			

course includes case studies and a design term project.
Also learning the anatomy and function of the human body, focusing on the contributions of the musculoskeletal systems to health and wellbeing across the lifespan. Interrelationships between these and other organ systems for maintaining homeostasis and performing activities of living will be emphasized, along with the relevance of concepts to aspects of health care. You will have opportunities to apply your knowledge as you analyses health care scenarios and will expand your vocabulary (as is used within health care settings) for effectively communicating biological information. The foundation knowledge and critical thinking skills that you develop in this unit will support your clinical reasoning and ongoing learning in other units within your course and your practice as a health professional.

Module 11

Code	Course/Module Title	ECTS	Semester
BME124	Dynamics	3	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3		48	27
Description			
The Dynamics module is a core course in engineering that focuses on the study of the motion of objects and the forces acting upon them. It extends the principles learned in the Statics module to objects in motion. The module covers topics such as kinematics, kinetics, Newton's laws of motion, energy and momentum principles, and the analysis of systems of particles and rigid bodies. Students learn to apply mathematical techniques to analyze the forces and motions of objects in various scenarios, such as particles in linear or curvilinear motion, rotational motion, and systems undergoing acceleration. The module emphasizes problem-solving skills, critical thinking, and an understanding of the principles that govern the dynamics of mechanical systems. The Dynamics module provides students with the tools to analyze and predict the behavior of objects and systems in motion, enabling them to design and optimize engineering solutions in Biomechanics.			

Module 12

Code	Course/Module Title	ECTS	Semester
BME125	Computer skills I	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Programming skills I module is an introductory course that focuses on teaching students the fundamental concepts and principles of computer programming. The module aims to develop students' problem-solving skills and their ability to write computer programs using a programming language. Students typically learn programming concepts such as variables, data types, control structures (conditionals and loops), functions, and basic algorithms. They are introduced to a programming language C++, and learn how to write code to solve simple problems and automate tasks. The module emphasizes the importance of logical thinking, algorithm design, debugging, and code documentation.			

Students also gain exposure to software development practices, such as version control and testing. The Programming skills I module provides a solid foundation for further studies in computer science and programming, enabling students to think computationally and start building their programming skills.

Module 13

Code	Course/Module Title	ECTS	Semester
BME126	Introduction to Biomedical Engineering	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	2	78	72
Description			
The Introduction to Biomedical Engineering module is a core course in biomedical engineering that focuses on the principles and displumes of biomedical engineering. It covers the fundamental branches of biomedical engineering including, introduction to the duties of biomedical engineering Biomechanics and rehabilitation engineering, Biomedical transducers and sensors, and different technologies that are used to view the human body and medical imaging modalities and their applications. Students learn about basic types of Bioelectrical signals, biomechanical signals, biochemical signals, bioimpedance signals and also examples of imaging modalities such as ultrasound, magnetic resonance imaging (MRI), computed tomography (CT), positron emission tomography (PET), X-ray, properties of X-ray radiation, biological effects of using X-ray on biological cells, X-ray unit's rooms in the hospital, main part of an X-ray machine. Students also gain hands-on experience with biomedical devices and equipment and laboratory experiments to validate theoretical concepts. The Introduction to Biomedical Engineering module aims to provide students with a solid understanding of the branches of biomedical engineering and their applications. It forms the foundation for advanced courses in biosensor, imaging devise, biomechanics, and biomedical instrumentation and biomedical signal analysis, enabling students to analyze, and troubleshoot in various biomedical engineering disciplines.			

Contact

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Republic of Iraq
Ministry of Higher Education & Scientific Research Supervision and Scientific Evaluation Directorate Quality Assurance and Academic Accreditation International Accreditation Dept.

Academic Program Specification Form For The Academic

University: Al-Turath University

Collage of engineering
Biomedical Engineering Department
Date Of Form Completion : 2023/2024

Dean's Name Date : / /	*Dean's Assistant For Scientific Affairs*	*The College Quality Assurance And University Performance Manager*
Signature	*Date : / /*	*Date :/ /*
	Signature	*Signature*

Quality Assurance And University Performance Manager Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering Department
3. Program Title	Math 2
4. Title of Final Award	Bachelor of Biomedical Engineering
5. Modes of Attendance offered	Courses
6. Accreditation	Study plans approved by sectoral committee
7. Other external influences	Related laws and guidelines
8. Date of production/revision of this specification	2023/2024
9. Aims of the Program	
1-Graduation of qualified scientific and professional staff in the specializations of Biomedical Engineering.	
2-Preparing academically qualified cadres for admission to postgraduate studies.	
3-Students who are scientifically qualified in the field of Biomedical Engineering techniques.	

4- Keeping abreast of the scientific development of the educational process.
5 - Scientific cooperation with the ministries of the state and the private sector.
6- Contributing to scientific research, holding seminars and conferences, and participating in conferences.

10. Learning Outcomes, Teaching, Learning and Assessment Methods
A.Cognitive Goals 1- Preparing scientifically qualified graduates in biomedical engineering. 2- Preparing academically qualified cadres for admission to postgraduate studies. 3- Keeping pace with the scientific development of the educational process. 4 - Scientific cooperation with the ministries of the state and the private sector. 5 - Contribute to scientific research, hold seminars and conferences, and participate in conferences. 6- Contribute to solving institutional problems using scientific methods
B. The skills goals special to the programme . 1- Professional skills in aspects of biomedical engineering. 2- Skills in data analysis and medical treatments in biomedical engineering. 3- Acquiring the necessary skills in the field of specialization.
Teaching and Learning Methods
1- Adopting the method of delivering lectures. 2- Giving applied study cases. 3- Practical exercises and their discussion by the students among themselves and with the course instructor. 4- Laboratories and the use of electronic programs. 5- Adopting online and integrated platforms and education when needed.
Assessment methods
1- Adopting smart tools such as smart boards and display screens. 2- Student participation in the lecture 3- To prepare the material in advance and to adopt the exercises as homework. 4- Expanding their perceptions by asking questions about their previous studies. 5- Searching for a solution to the issue, relying on scientific sources and the World Wide Web.

C. Affective and value goals

1- Cultivating values and principles in the student
2- Emphasizing the personal characteristics of workers in the biomedical engineering sector, such as integrity, honesty, confidentiality, morals, and citizen health.
3- Statement of the importance of rules of professional conduct.
4- Fighting financial and administrative corruption by the competent authorities.

Teaching and Learning Methods

1- Giving lectures that encourage emotional values.
2- Holding seminars and workshops for students during the academic year.
3- Field visits to relevant ministries and health institutions.

Assessment methods

1- Monitoring the behavior of the students.
2- Formation of academic and educational advising committees.
3- The educational supervisor for each class.
4- Student discipline committees.

D. General and Transferable Skills (other skills relevant to employability and personal development)

1- Encouraging students to be creative and create a spirit of perseverance and self-denial by encouraging the need for joint cooperation among them to fulfill the requirements of understanding the study.
2- Activating the activities of the graduate follow-up workshops
3- Volunteer work for students
4- Acquisition of students through self-education and self-talents such as sports and the arts, especially since the college has a Department of Biomedical Engineering.

Teaching and Learning Methods

1- Adopting the method of giving lectures.
2- Organizing workshops, seminars and conferences.
3- Field visits to health institutions related to medical specialization.

Assessment Methods

1-Giving lectures.
2- Organizing workshops and seminars and participating in conferences.
3- Introducing the rules and ethics of the profession.

11. Program Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
Second Year		Math 2		Bachelor Degree Requires (x) credits

13. Personal Development Planning
Students to achieve the highest marks in the final stages of study at the college in order to be the first to achieve their future dreams by completing their studies in postgraduate and encouraging them to join professional institutes encouraging the specialized in Biomedical Engineering.
14. Admission criteria .
1- The Ministry's instructions for central admission. 2- Admission to the department is specific to specific criteria from the Ministry. 3- Graduates of the scientific branch exclusively. 4- Absorptive capacity 5- Sequence The department is within the departments of the college.
15. Key sources of information about the programme
1 - Curriculum and assistance books. 2 - Regulations and instructions of the Ministry. 3 - The Sectoral Committee. 4 - Examining the corresponding experiences of the universities in local, Arab and international universities.

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
Second Year First Course And Second Course		Math 2		*			*	*	*	*	*	*	*	*	*	*	*	*	*

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering
3. Course title/code	Math 2
4. Modes of Attendance offered	Courses
5. Semester/Year	Course I and Course II
6. Number of hours tuition (total)	2 hrs. Theory and 1 hours Practical
7. Date of production/revision of this specification	2022/ 2023
8. Aims of the Course	
1 - Graduating qualified scientific and professional cadres in the fields of life medicine engineering. 2 - Preparing the academic, financial and human requirements for the morning preliminary studies in the department. 3 - Keeping pace with the scientific development of the educational process and the state of its perfect implementation. 4 - Opening knowledge channels in research, professional and advisory	

communication with the corresponding public and private bodies.
5 - Producing and disseminating professional knowledge in the fields of biomedical engineering through organizing
Seminars, workshops, scientific lectures, scientific courses, conferences, panel discussions, and others.
6- Contribute to solving institutional problems in the field of specialization.

9. Learning Outcomes, Teaching, Learning and Assessment Method

A. Cognitive goals.
1 Use knowledge and understanding in the field of mathematics and other analytical sciences in the field of biomedical engineering to analyze, design and solve theoretical issues and problems in the field of specialization.
2 Apply knowledge and understanding of physical, biological, mathematical and analytical laws in the areas of modeling life medicine engineering applications.
3 Using engineering vocabulary that has been trained in mechanics, electricity, and basic principles of biomedical engineering in solving clinical problems and dealing with them with sense and scientific engineering depth.
4 Clarifying the role of the biomedical engineer in society and his most important governing engineering works.

B. The skills goals special to the course.
1 Planning and conducting a set of experiments in various engineering topics and in the field of biomedical engineering.
2 Develop preliminary designs commensurate with the needs of the biomedical engineer labor market, and then represent these designs through posters or scientific lectures individually or collectively.
3 Using available laboratories and workshops to generate engineering and biometric data with appropriate accuracy.
4 Preparing specialized technical drawings and reports.
5 Preparing engineering programs and using ready-made advanced engineering solutions packages in line with the problems raised in the field of biomedical engineering.

Teaching and Learning Methods

1 The workers in this program possess extensive knowledge of educational tools and in a way that is appropriate for the academic vocabulary. Among these courses and methods:
2 The lectures that are presented to the students are in the form of a set of presentation slides, or by means of an optical projector, or they are written directly by the lecturer.
3 There are lectures that are printed and distributed in advance to the student so that notes are placed and discussed during the lesson.
4 There is material for scientific lectures placed on electronic pages on the Internet.
5 Discussion in small and large groups.
6 Discussion through questions and answers during official lecture times or during the teaching office hours.

Assessment methods

- Written exam.
- Oral presentation of individuals or groups.
- Writing individual reports or doing group projects.
- Homework.
- Home exams.
- Practical skills will be evaluated through laboratory experiments, reports and submitted projects.

A. Affective and value goals

1 Apply different mathematical, scientific and engineering skills to solve various problems.
2 Analyze and develop final solutions to engineering problems.
3 Designing various biomedical engineering systems and analyzing their parts.
4 Cognitive integration between various practical, mathematical and engineering values to find unique customized solutions.

Teaching and Learning Methods

- Feedback is given to students during discussions.
Discussions in small or large groups.
- Answering questions during scientific lectures or during office hours of the lecturer.
- Reading textbooks, research papers, etc., for individuals or groups.
Using the computer in some practical lectures and reviews.

Assessment methods

- Writing group reports for group projects.
- Vocabulary review and evaluation through group work.
- Making representative posters for group projects.
- Practical skills are evaluated by working in scientific laboratories, writing reports and projects, and presenting them.

- Experimental skills are evaluated by working in laboratory field experiments and submitting specialized reports for that purpose.
- Group presentation and poster making skills.

B. General and rehabilitative transferred skills(other skills relevant to employability and personal development).

1 Applying the skill of deep thinking in solving analytical issues to overcome the problems presented.

2 Using multiple skills to solve the problems of biomedical engineering, through the interrelationship between
Biosciences and engineering knowledge in various fields.

3 Writing research, reports and group projects.

4The skill of effective and continuous learning, through the continuous development of interaction with the labor market.

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
30	150	Gneral understand	Math 2	Presence in College	Quize and Examine

11. Infrastructure	
1. Books Required reading:	CALCULUS BY THOMAS Howard Advanced Math by Wiley
2. Main references (sources)	Fundamentals of Mathematics
A- Recommended books and references (scientific journals, reports…).	
B-Electronic references, Internet sites…	

12. The development of the curriculum plan
Develop a curriculum plan by using up to date references in syllabus formulation.

Republic of Iraq
Ministry of Higher Education & Scientific Research Supervision and Scientific Evaluation Directorate Quality Assurance and Academic Accreditation International Accreditation Dept.

Academic Program Specification Form For The Academic

University: Al-Turath University
Collage of engineering
Biomedical Engineering Department
Date Of Form Completion 2023/2024

Dean's Name Date : / /

Signature

Dean's Assistant For Scientific Affairs

Date : / /
Signature

The College Quality Assurance And University Performance Manager

Date :/ /
Signature

Quality Assurance And University Performance Manager Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering Department
3. Program Title	Biomaterials science
4. Title of Final Award	Bachelor's degree in Biomedical Engineering
5. Modes of Attendance offered	Courses
6. Accreditation	Study plans approved by sectoral committee
7. Other external influences	Related laws and guidelines
8. Date of production/revision of this specification	2023/2024
9. Aims of the Program	
1-Graduation of qualified scientific and professional staff in the specializations of Biomedical Engineering.	
2-Preparing academically qualified cadres for admission to postgraduate studies.	
3-Students who are scientifically qualified in the field of Biomedical Engineering techniques.	

4- Keeping abreast of the scientific development of the educational process.
5 - Scientific cooperation with the ministries of the state and the private sector.
6- Contributing to scientific research, holding seminars and conferences, and participating in conferences.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A.Cognitive Goals

A1. The number of scientifically qualified graduates in the field of Biomedical Engineering.

A2. Preparing academically qualified caders for admission to post graduate studies.

A3. To keep pace with the scientific development of the educational process.

B. The skills goals special to the programme .

B1. Professional skills in the aspects of Biomedical Engineering

B2. Skills in data analysis and medical treatments for them in the specializations of anesthesia and intensive care, biomedical engineering

B3. Acquisition of the necessary skills in the field of specialization

Teaching and Learning Methods

1.Adopting the method of giving lectures.
2. Giving practical case studies.
3- Practical exercises and discussion by the students among themselves and with the professor of the subject.
4- Laboratories and benefit from electronic programs.

5- Adopting platforms and e-learning and blended learning when needed.

Assessment methods

1-Adopting smart methods such as smart boards and display screens.
2- Students' participation in the lecture.
3- Preparing for the subject and adopting exercises as homework.
4- Expand their understanding by asking questions about their previous studies.

A. Affective and value goals

C1. Instilling values and principles in the student. The nature of life medicine absolutely
C2. Emphasis on the personal characteristics of workers in the Biomedical Engineering sector, such as integrity, honesty, confidentiality, morals, and citizen health.
C3. A statement of the importance of the rules of professional conduct.
C4. Fighting financial and administrative corruption by the competent authorities.

Teaching and Learning Methods

1-Giving lectures that encourage emotional values.

2- Holding seminars and workshops for students during the school year.

3- Field visits to the relevant ministries and health institutions.

Assessment methods

1-Follow up on students' behavior.

2- Forming academic and educational guidance committees.

3- The educational supervisor for each class.

4- Student discipline committees.

B. General and Transferable Skills (other skills relevant to employability and personal development)

D1.Encouraging students to be creative and create a spirit of perseverance and self-denial by encouraging the need for joint cooperation among them to fulfill the requirements of understanding the study.

D2.Activating the activities of the graduate follow-up workshops.

D3. Volunteer work for students.

D4. Acquisition of students through self-education and self-talents such as sports and the arts, especially since the college has a Department of Biomedical Engineering.

Teaching and Learning Methods

1-Adopting the method of giving lectures.

2 - Organizing workshops, seminars and conferences.

3- Field visits to health institutions related to medical specialization.

Assessment Methods

1-Giving lectures.

2- Organizing workshops and seminars and participating in conferences.

3- Introducing the rules and ethics of the profession.

11. Program Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
second Year		Biomaterials science		Bachelor Degree Requires (x) credits

13. Personal Development Planning
Students to achieve the highest marks in the final stages of study at the college in order to be the first to achieve their future dreams by completing their studies in postgraduate and encouraging them to join professional institutes encouraging the specialized in Biomedical Engineering.
14. Admission criteria .
First: The Ministry's instructions for central admission. Second: Admission to the department is specific to specific criteria from the Ministry. Third: Graduates of the scientific branch exclusively. Fourth: Absorptive capacity. Fifth: Sequence The department is within the departments of the college
15. Key sources of information about the programme
1 - Curriculum and assistance books. 2 - Regulations and instructions of the Ministry. 3 - The Sectoral Committee. 4 - Examining the corresponding experiences of the universities in local, Arab and international universities.

Curriculum Skills Map																		
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																		
				Programme Learning Outcomes														
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
second Year First Course And Second Course		Biomaterials science		*			*	*	*	*	*	*	*	*	*	*	*	*	*

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering
3. Course title/code	Bio materials science
4. Modes of Attendance offered	Courses
5. Semester/Year	Course I and Course II
6. Number of hours tuition (total)	90 hrs. Theory
7. Date of production/revision of this specification	2022/ 2023

8. Aims of the Course
1-To provide students with knowledge of the academic and professional nature of medical work.
2- Learn the types of medical standards and how to apply them in the field of specialization.
3- Providing them with the necessary knowledge tools in the necessary medical night
4- Developing the student's medical awareness and benefiting from its applications. Medical corridors eccess to scientific and applied progress in the field of medicine, especially Biomedical Engineering.

9. Learning Outcomes, Teaching, Learning and Assessment Method

A. Cognitive goals.

A1- Students acquire knowledge of the academic and professional nature of their work.
A2 - Learning the types of standards and how to apply them in the field of expertise.
A3 - Providing them with the necessary knowledge tools in the vital names.
A4 - Developing students' water awareness and benefiting from the application of examining the scientific and applied progress in the divine field, especially the fields of engineering and medicine. Biomedical engineering, medicine and engineering.

B. The skills goals special to the course.

B1.Understand the nature of medical work and its applications.

B2. Take advantage of specialized applications in the field of employment upon graduation and know how to employ them.

B3. Contributing to scientific research, holding seminars and conferences, and participating in conferences.

Teaching and Learning Methods

1- Adopting the method of giving lectures.

2. Giving practical study areas.

3- Practical exercises and discussing them by the students among themselves and with the subject's professor.

4- Taking advantage of the laboratories and benefiting from electronic programs.

5- Adopting platforms and electronic and integrated education when needed.

Assessment methods

1- Through the participation of students in the lecture based on their prior preparation for the subject.

2- Giving them exercises as a homework and requesting its solution with independent papers taken from them in the next lecture.

3- Expand their knowledge by asking a simple question related to their previous studies and on which their studies in the department depend.

C. Affective and value goals

C1.They are used in the subject of medical biology and they are asked to search from the Internet to find out the answer and discuss it in the hall.

C2.Independence during The personality of the examiner, such as integrity, honesty, confidentiality and morals.

C3- A statement of the importance of the professional conduct rules of the examiner and his exposure to legal penalties in case of violation.

C4- Emphasis on the importance of fighting financial and administrative corruption by the competent authorities.

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the work of the laboratory equipment and with the participation of all students in the division with the professor to give the material a kind of interaction.

2- Giving them some simple practical exercises that are discussed by the students and solving them during the lecture and medical examinations.

Assessment methods

1- Through the participation of students in the lecture based on the analysis.
2- Giving them exercises as a homework and asking for it to be solved with independent papers.

3- Expanding their perceptions by asking a simple question related to their previous studies and on which their studies in the department depend. They are used in the subject of alire (and they are asked to search from the Internet to find out the answer and discuss it in the biology hall.

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development).

D1. Encouraging students to be creative and create a spirit of perseverance and self-denial through continuous encouragement of the necessity of joint and effective cooperation among them to achieve their academic requirements.

D2.Gaining them knowledge of the importance of developing their capabilities through self-education by getting acquainted with various knowledge

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
30	150	Gneral understand	Biomaterials science	Presence in College	Quize and Examine

11. Infrastructure	
1. Books Required reading:	Any Book with relationship
2. Main references (sources)	Biomaterials
A- Recommended books and references (scientific journals, reports…).	1-Joon Park, R. S. Lakes, Biomaterials: An Introduction 2007 Donglu Shi, Introduction to biomaterials 2006. 2-Joon Park, Biomaterials: principle and applications. 3-William D. Callister, Jr and David G. Rethwisch Materials Science and Engineering,9th .
B-Electronic references, Internet sites…	

12. The development of the curriculum plan
Develop a curriculum plan by using up to date references in syllabus formulation.

وزارة التعليم العالي والبحث العلمي
جـــهاز الإشـــراف والتقـويم العلـمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

الجامعة : جامعة التراث
الكلية/ المعهد: كلية الهندسة
القسم العلمي : هندسة الطب الحياتي
تاريخ ملء الملف : 2024/2023

اسم المعاون العلمي: **اسم العميد :**
التاريخ : **التاريخ :**

دقق الملف من قبل
شعبة ضمان الجودة والأداء الجامعي
اسم مدير شعبة ضمان الجودة والأداء الجامعي:
التاريخ:

مصادقة السيد العميد

وصف البرنامج الأكاديمي

يوفر وصف البرنامج الأكاديمي هذا ايجازاً مقتضياً لأهم خصائص البرنامج ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من الفرص المتاحة . ويصاحبه وصف لكل مقرر ضمن البرنامج

١. المؤسسة التعليمية	كلية التراث الجامعة
٢. القسم العلمي / المركز	هندسة الطب الحياتي
٣. اسم البرنامج الأكاديمي او المهني	التشريح Anatomy
٤. اسم الشهادة النهائية	بكالوريوس هندسة الطب الحياتي
٥. النظام الدراسي : سنوي /مقررات /أخرى	كورسات
٦. برنامج الاعتماد المعتمد	الخطط الدراسييه المعتمده من قبل اللجنه القطاعيه
٧. المؤثرات الخارجية الأخرى	القوانيين والارشادات ذات العلاقه
٨. تاريخ إعداد الوصف	٢٠٢٤/٢٠٢٣

٩. أهداف البرنامج الأكاديمي

١ - تخريج ملاكات علمية ومهنية مؤهلة في تخصصات هندسة الطب الحياتي.
٢ - تهيئة المتطلبات الأكاديمية المالية والبشرية للدراسات الأولية الصباحية في القسم.
٣ - مواكبة التطور العلمي للعملية التعليمية وحالة التنفيذ المتقن لها.
٤ - فتح القنوات المعرفية في التواصل البحثي والمهني والأستشاري مع الجهات المناظرة العامة والخاصة.
٥ - انتاج المعرفة المهنية ونشرها في مجالات هندسة الطب الحياتي من خلال تنظيم الندوات , الورشات, المحاضرات العلمية والدورات العلمية, والمؤتمرات وحلقات النقاش وغيرها.
٦- المساهمة في حل المشاكل المؤسسية في مجال الأختصاص.

١٠. مخرجات البرنامج المطلوبة وطرائق التعليم والتعلم والتقييم

أ- الاهداف المعرفية

١- أعداد خريجين مؤهلين علميا في هندسة الطب الحياتي.
٢- أعداد كوادر مؤهلة اكاديميا للقبول في الدراسات العليا.
٣- مواكبة التطور العلمي للعملية التعليمية.
٤ - التعاون العلمي مع وزارات الدولة والقطاع الخاص.
٥ - المساهمة في البحث العلمي واقامة الندوات والمؤتمرات والمشاركة في المؤتمرات.
٦- المساهمة في حل المشكلات المؤسسية بطرق علمية.

ب – الأهداف المهاراتية الخاصة بالبرنامج

١- مهارات مهنية في الجوانب هندسة الطب الحياتي.
٢- مهارات في تحليل البيانات والمعالجات الطبيه لها في هندسة الطب الحياتي.
٣– اكتساب المهارات اللازمة في مجال الأختصاص.

طرائق التعليم والتعلم

١- اعتماد اسلوب القاء المحاضرات.
٢- اعطاء حالات دراسية تطبيقية.
٣– تمارين عملية ومناقشتها من قبل الطلبة فيما بينهم ومع استاذ المادة.
٤- المختبرات والأستفادة من البرامج الألكترونية.
٥– اعتماد المنصات والتعليم الألكتروني والمدمج عند الحاجة.

طرائق التقييم

١- اعتماد الوسائل الذكية كالسبورات الذكية وشاشات العرض.
٢- مشاركة الطلبة في المحاضرة.
٣- التحضير المسبق للمادة واعتماد التمارين كواجبات بيتية.
٤- توسيع مداركهم من خلال طرح اسئلة حول دراستهم السابقة.
٥- البحث في حل الموضوع بالأعتماد على المصادر العلمية والشبكة العنكبوتية.

ج- الأهداف الوجدانية والقيمية

١- زرع القيم والمبادئ لدى الطالب
٢- التأكيد على السمات الشخصية للعاملين في قطاع هندسة الطب الحياتي كالنزاهة والامانة والسرية والخلق وصحة المواطن.
٣- بيان اهمية قواعد السلوك المهني.
٤- محاربة الفساد المالي والأداري من قبل الأجهزة المختصة.

طرائق التعليم والتعلم

١- القاء المحاضرات التي تحث على القيم الوجدانية.
٢- اقامة الندوات والورش الى الطلبة خلال السنة الد راسية.
٣- زيارات ميدانية الى الوزارات والمؤسسات الصحية ذات العلاقة.

طرائق التقييم

١ – متابعه سلوك الطلبه.
٢- تشكيل لجان الارشاد الاكاديمي والتربوي.
٣- المشرف التربوي لكل صف .
٤- لجان انضباط الطلبه.

د -المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)

١- تشجيع الطلبة على الابداع وخلق روح المثابرة ونكران الذات من خلال التشجيع على ضرورة التعاون المشترك فيما بينهم لأنجاز متطلبات فهم الدراسة.
٢- تفعيل نشاطات ورش متابعة الخرجين.
٣- العمل التطوعي للطلبة.
٤- اكساب الطلبة من خلال التثقيف الذاتي والمواهب الذاتية كالرياضة والفنون سيما وان الكلية لديها قسم التربية البدنية وعلوم الرياضة.

طرائق التعليم والتعلم

١- اعتماد اسلوب القاء المحاضرات.
٢- اقامة ورش العمل والندوات والمؤتمرات.
٣- زيارات ميدانية الى المؤسسات الصحية ذات العلاقة بالأختصاص الطبي.

طرائق التقييم

١– القاء المحاضرات.
٢- اقامة ورش العمل والندوات والمشاركة في المؤتمرات.
٣- التعريف بضوابط واخلاقيات المهنة.

١١. بنية البرنامج

المرحلة الدراسية	رمز المقرر أو المساق	اسم المقرر أو المساق	الساعات المعتمدة اسبوعيا	
			نظري	عملي
المرحلة الثانية الكورس الاول والكورس الثاني		التشريح **Anatomy II 1**	٢	2

١٢. التخطيط للتطور الشخصي

تشجيع الطلبة على تحقيق اعلى العلامات في المراحل النهائية من الدراسة في الكلية كي يكونوا الأوائل بغية تحقيق احلامهم المستقبلية من اكمال دراستهم في الدراسات العليا وتشجيعهم على الألتحاق بالمعاهد المهنية المتخصصة في قسم هندسة الطب الحياتي.

١٣. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد)

أولا: تعليمات الوزارة الخاصة بالقبول المركزي.

ثانيا: القبول في القسم خاص بمعايير محددة من الوزارة.

ثالثا: خريجي الفرع العلمي حصرا.

رابعا: الطاقة الأستيعابية.

خامسا: تسلسل القسم ضمن اقسام الكلية.

١٤. أهم مصادر المعلومات عن البرنامج

١ – الكتب المنهجية والمساعدة.

٢– ضوابط وتعليمات الوزارة.

٣–اللجنة القطاعية.

٤ – الأطلاع على تجارب الأقسام المناظرة في الجامعات المحلية والعربية والعالمية.

مخطط مهارات المنهج

يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم

				مخرجات التعلم المطلوبة من البرنامج															
السنة / المستوى	رمز المقرر	اسم المقرر	أساسي أم اختياري	الأهداف المعرفية				الأهداف المهاراتية الخاصة بالبرنامج				الأهداف الوجدانية والقيمية				المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)			
				أ١	أ٢	أ٣	أ٤	ب١	ب٢	ب٣	ب٤	ج١	ج٢	ج٣	ج٤	د١	د٢	د٣	د٤
المرحلة الثانية		التشريح	اساسي	*			*	*	*	*	*	*	*	*	*	*	*	*	*

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجاز مقتضبا لاهم خصائص المقرر(التشريح) ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهنا التعلم المتاحة ولابد من الربطً بينها وبين وصف البرنامج.

١. المؤسسة التعليمية	كلية التراث الجامعة
٢. القسم العلمي / المركز	هندسة الطب الحياتي
٣. اسم / رمز المقرر	التشريح **Anatomy II 1**
٤. أشكال الحضور المتاحة	الصفوف الدراسية
٥. الفصل / السنة	كورسات
٦. عدد الساعات الدراسية (الكلي)	120
٧. تاريخ إعداد هذا الوصف	٢٠٢٤/٢٠٢٣

٨. أهداف المقرر

١- أكساب الطلبة معرفة بطبيعة العمل الطبية, الاكاديمية, والمهنية.

٢– تعلم انواع المقاييس الطبيه وكيفية تطبيقها في مجال الأختصاص.

٣– تزويدهم بادوات المعرفة اللازمة في المختبرات الطبية.

٤– تنمية الوعي الطبي لدى الطالب والأستفادة من تطبيقاته.

٥–الأطلاع على التقدم العلمي والتطبيقي للمجال الهندسي الطبيي وخصوصا هندسة الطب الحياتي.

١٠. مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ- الأهداف المعرفية

١- أكساب الطلبة معرفة بطبيعة العمل الأكاديمية والمهنية.
٢- تعلم انواع المقاييس الهندسية الطبية وكيفية تطبيقها في مجال الأختصاص.
٣- تزويدهم بادوات المعرفة اللازمة في هندسة الطب الحياتي.
٤- تنمية الوعي الهندسي والطبي لدى الطالب والأستفادة من تطبيقاته.
٥- الاطلاع على التقدم العلمي والتطبيقي لمجال الهندسي والطبي وخصوصا هندسة الطب الحياتي.

ب - الأهداف المهاراتية الخاصة بالمقرر.

١- فهم طبيعة العمل الهندسي والطبي وتطبيقاته.
٢- الأستفادة من التطبيقات الهندسية والطبية في المجال الوظيفي عند التخرج ومعرفة كيفية توظيفها.
٣- المساهمة في البحث العلمي واقامة الندوات والمؤتمرات والمشاركة في المؤتمرات.

طرائق التعليم والتعلم

١- اعتماد اسلوب القاء المحاضرات.
٢- اعطاء حلقات دراسية تطبيقية.
٣- تمارين عملية ومناقشتها من قبل الطلبة فيما بينهم ومع استاذ المادة.
٤- المختبرات والأستفادة من البرامج الأكترونية.
٥- اعتماد المنصات والتعليم الألكتروني والمدمج عند الحاجة.

طرائق التقييم

١- من خلال مشاركة الطلبة بالمحاضرة بالأعتماد على تحضيرهم المسبق للمادة .
٢- إعطائهم تمارين كواجب بيتي وطلب حله بأوراق مستقلة يؤخذ منهم بالمحاضرة التالية.
٣- توسيع مداركهم من خلال طرح سؤال بسيط يخص دراستهم السابقة وتعتمد عليه دراستهم في القسم. ويستفاد منها في مادة التشريح (ويطلب منهم البحث من الأنترنت لمعرفة الأجابة ومناقشتها في القاعة).

ج- الأهداف الوجدانية والقيمية

١- زرع القيم والمبادئ لدى الطالب من خلال التأكيد على استقلالية الفاحص عند ابداء رأيه المحايد.
٢- التأكيد على السمات الشخصية للفاحص كالنزاهة والأمانة والسرية والاخلاق.
٣- بيان اهمية قواعد السلوك المهني للفاحص وتعرضه للعقوبات القانونية في حالة مخالفته.
٤- التأكيد على اهمية محاربة الفساد المالي والاداري من قبل الأجهزة المختصة.

طرائق التعليم والتعلم

١- اعتماد اسلوب القاء المحاضرات وربط كل موضوع بأمثلة من واقع حال عمل الأجهزة المختبرية والطبية.
٢- أعطائهم بعض التمارين العملية البسيطة والتي يجري مناقشتها من قبل الطلبة وحلها اثناء المحاضرة وبمشاركة كافة الطلبة في الشعبة مع الاستاذ لاعطاء المادة نوع من التفاعل.

طرائق التقييم

١- من خلال مشاركة الطلبة بالمحاضرة بالأعتماد على تحضيرهم المسبق للمادة.
٢- إعطائهم تمارين كواجب بيتي وطلب حله بأوراق مستقلة يؤخذ منهم بالمحاضرة التالية.
٣- توسيع مداركهم من خلال طرح سؤال بسيط يخص دراستهم السابقة وتعتمد عليه دراستهم في القسم.
ويستفاد منها في مادة التشريح (ويطلب منهم البحث من االانترنت لمعرفة االاجابة ومناقشتها في القاعة).

د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي).

١- المهارات العامة والتأهيلية المنقولة, المهارات الاخرى المتعلقة بقابلية التوظيف والتطور الشخصي.
٢- تشجيع الطلبة على الابداع وخلق روح المثابرة ونكر الذات لديهم من خلال التشجيع المستمر على ضرورة التعاون المشترك والفاعل فيما بينهم الانجاز متطلباتهم الدراسية.
٣- تم تزويدهم بالموقع الالكتروني الخاص بالجامعة المتعلق بتوافر فرص مستقبلية للتعيين والتوظيف.
٤- أكسابهم معرفة بأهمية تطوير قابلياتهم من خلال تثقيف الذات بالاطلاع على مختلف المعارف.

١١.بنية المقرر					
الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / أو الموضوع	طريقة التعليم	طريقة التقييم
٣٠	120	فهم عام	التشريح **Anatomy II 1**	حضوري	كوز وامتحان

١٢. البنية التحتية

١ـ الكتب المقررة المطلوبة	**محاضرات استاذ المادة**
٢ـ المراجع الرئيسية (المصادر)	1. **SNELL'S CLINICAL ANATOMY BY REGIONS 10th Edition.** 2. **Cunningham's Manual of Practical Anatomy**
ا ـ الكتب والمراجع التي يوصى بها (المجلات العلمية , التقارير ,....)	1. **Gray's Atlas of Anatomy 3rd Edition.** 2. **USMLE Step1 Anatomy / Kaplan Medical**
ب ـ المراجع الالكترونية, مواقع الانترنيت	www.kenhub.com www.teachmeanatomy.info www.getbodysmart.com www.anatomyarcade.com www.practiceanatomy.com

Republic of Iraq
Ministry of Higher Education & Scientific Research Supervision and Scientific Evaluation Directorate Quality Assurance and Academic Accreditation International Accreditation Dept.

Academic Program Specification Form For The Academic

University: Al-Turath University
College of engineering
Biomedical Engineering Department
Date Of Form Completion : 2023/2024

Dean's Name Date : / /

Signature

Dean's Assistant For Scientific Affairs

Date : / /
Signature

The College Quality Assurance And University Performance Manager

Date :/ /
Signature

Quality Assurance And University Performance Manager Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering Department
3. Program Title	Biochemistry
4. Title of Final Award	B.Sc. Biomedical Engineering
5. Modes of Attendance offered	Courses
6. Accreditation	Study plans approved by sectoral committee
7. Other external influences	Related laws and guidelines
8. Date of production/revision of this specification	2022/ 2023
9. Aims of the Program	
1-Graduation of qualified scientific and professional staff in the specializations of Biomedical Engineering.	
2-Preparing academically qualified cadres for admission to postgraduate studies.	
3-Students who are scientifically qualified in the field of Biomedical Engineering techniques.	

4- Keeping abreast of the scientific development of the educational process.
5 - Scientific cooperation with the ministries of the state and the private sector.
6- Contributing to scientific research, holding seminars and conferences, and participating in conferences.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A.Cognitive Goals

A1. The number of scientifically qualified graduates in the field of Biomedical Engineering.

A2. Preparing academically qualified caders for admission to post graduate studies.

A3. To keep pace with the scientific development of the educational process.

B. The skills goals special to the programme .

B1. Professional skills in the aspects of Biomedical Engineering

B2. Skills in data analysis and medical treatments for them in the specializations of anesthesia and intensive care, biomedical engineering

B3. Acquisition of the necessary skills in the field of specialization

Teaching and Learning Methods

1. Adopting the method of giving lectures.
2. Giving practical case studies.
3- Practical exercises and discussion by the students among themselves and with the professor of the subject.
4- Laboratories and benefit from electronic programs.

5- Adopting platforms and e-learning and blended learning when needed.

Assessment methods

1-Adopting smart methods such as smart boards and display screens.
2- Students' participation in the lecture.
3- Preparing for the subject and adopting exercises as homework.
4- Expand their understanding by asking questions about their previous studies.

A. Affective and value goals

C1. Instilling values and principles in the student. The nature of life medicine absolutely
C2. Emphasis on the personal characteristics of workers in the Biomedical Engineering sector, such as integrity, honesty, confidentiality, morals, and citizen health.
C3. A statement of the importance of the rules of professional conduct.
C4. Fighting financial and administrative corruption by the competent authorities.

Teaching and Learning Methods

1-Giving lectures that encourage emotional values.

2- Holding seminars and workshops for students during the school year.

3- Field visits to the relevant ministries and health institutions.

Assessment methods

1-Follow up on students' behavior.

2- Forming academic and educational guidance committees.

3- The educational supervisor for each class.

4- Student discipline committees.

B. General and Transferable Skills (other skills relevant to employability and personal development)

D1.Encouraging students to be creative and create a spirit of perseverance and self-denial by encouraging the need for joint cooperation among them to fulfill the requirements of understanding the study.

D2.Activating the activities of the graduate follow-up workshops.

D3. Volunteer work for students.

D4. Acquisition of students through self-education and self-talents such as sports and the arts, especially since the college has a Department of Biomedical Engineering.

Teaching and Learning Methods

1-Adopting the method of giving lectures.

2 - Organizing workshops, seminars and conferences.

3- Field visits to health institutions related to medical specialization.

Assessment Methods

1-Giving lectures.

2- Organizing workshops and seminars and participating in conferences.

3- Introducing the rules and ethics of the profession.

11. Program Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
Second Year		Biochemistry	4	Bachelor Degree Requires (x) credits

13. Personal Development Planning
Students to achieve the highest marks in the final stages of study at the college in order to be the first to achieve their future dreams by completing their studies in postgraduate and encouraging them to join professional institutes encouraging the specialized in Biomedical Engineering.
14. Admission criteria .
First: The Ministry's instructions for central admission. Second: Admission to the department is specific to specific criteria from the Ministry. Third: Graduates of the scientific branch exclusively. Fourth: Absorptive capacity. Fifth: Sequence The department is within the departments of the college
15. Key sources of information about the programme
1 - Curriculum and assistance books. 2 - Regulations and instructions of the Ministry. 3 - The Sectoral Committee. 4 - Examining the corresponding experiences of the universities in local, Arab and international universities.

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
Second Year First Course And Second Course		Biochemistry	Core	*			*	*	*	*	*	*	*	*	*	*	*	*	*

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering
3. Course title/code	Biochemistry
4. Modes of Attendance offered	Courses
5. Semester/Year	Course I and Course II
6. Number of hours tuition (total)	2 hrs. Theory and 2 hours Practical
7. Date of production/revision of this specification	2022/ 2023

8.Aims of the Course

The goal of Biochemistry is to explain the physical and chemical factors that are responsible for the origin, development and progression of life. Biochemistry course present tremendous challenges to both students& teachers for acquisition of the basic facts is essential to the study of Biochemistry, but also important for students to develop the ability to solve practical, real life problems related to the knowledge they have acquired.

9. Learning Outcomes, Teaching, Learning and Assessment Method

A. Cognitive goals.

Graduates will be able to:

A2. Apply their knowledge and understanding of physical and biochemistry laws, mathematics and numerical analysis in order to model Biomedical Engineering and similar systems.

A3. Explain the role of Biomedical Engineers in society and the constraints within which their engineering judgment will be exercised.

B. The skills goals special to the course.

B2. Design, from requirement, market need or specification, a biomedical engineering device implant or system, up to the preliminary design stage, and present this design via a series of poster, written and oral presentations from both group and individual work;

B3. Use laboratory and workshop equipment to generate data, including both engineering and physiological measurements, with appropriate rigor;

Teaching and Learning Methods

Staff involved in the degree program utilize a wide range of teaching methods that they deem the most appropriate for a particular course. These include:

- Lectures where the students write information presented to them via slide show, overhead or written by the lecturer.
- Lectures where the students have some printed notes/handouts and may annotate, or expand these during a spoken lecture.
- Small group and large group tutorial sessions;.
- Question and answer sessions during lectures or staff Office Hours.
- Laboratory sessions.

Assessment methods

Seminar presented and discussed.

Assessment Methods to be used are:

- Written examinations (Summative assessment).
- Oral presentations of individual and group work.
- Individual written project report(s) of both individual and group projects.
- Homework.
- Take home exams.
- Practical skills will be assessed through laboratory experiments, write – ups, coursework reports, project reports and presentations.
- Experimental, research and design skills will be assessed through laboratory experiments write-ups, coursework reports, project reports and presentations.
- Presentation skills through group presentations and poster presentations.
- Quizzes and exams.

C. Affective and value goals

C2. Analyze and solve engineering problems.
C3. Design a Biomedical Engineering system, component or process to meet a need.
C4.Integrate knowledge and understanding of other scientific, mathematical, computational or engineering disciplines in order to support their engineering specialization.

Teaching and Learning Methods

- External lectures from industry or clinicians.
- Feedback given to students during tutorials.
- Small group and large group tutorial sessions.
- Question and answer sessions during lectures or staff Office Hours.
- Guided reading of texts, journal articles etc., for individual and group projects.
- Completion of web-based exercises or computer based laboratory sessions.

Assessment methods

- Individual written project report(s) of both individual and group projects.
- Group written project report(s) of group projects.
- Interview of group project manager and assessment of group project minutes.
- Poster presentation of group project work; • Practical skills will be assessed through laboratory experiments, write-ups, coursework reports, project reports and presentations.
- Experimental, research and design skills will be assessed through laboratory experiments write-ups, coursework reports, project reports and presentations
- Presentation skills through group presentations and poster presentations.

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development).

- D2. Use appropriate multi-disciplinary skills to solve Biomedical Engineering problems, combining the biological and engineering knowledge gained through the degree;.
- D3. Demonstrate numeracy and literacy in written reports, project work and examinations.
- D4. Learn effectively for the purpose of continuing professional development and in a wider context throughout their career

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
30	160	General understand	Biochemistry	Presence in College	Quize and Examine

11. Infrastructure	
1. Books Required reading:	1. General organic and biochemistry Biochemistry 2008.Campbell fareel. 2. D. U. Silverthon (2010) Human physiology. 5 Edition.
2. Main references (sources)	1.Biochemistry 5th edditiond , 2011, ritchard Harvey and Dennise Ferreier. 2. Seely, Stephens, Tate (1998) Anatomy physiology . Mc Graw-Hill, New York.
A- Recommended books and references (scientific journals, reports…).	Check the new modern websites talking about the new modifications
B-Electronic references, Internet sites…	
12. The development of the curriculum plan	
Develop a curriculum plan by using up to date references in syllabus formulation.	

Republic of Iraq
Ministry of Higher Education & Scientific Research Supervision and Scientific Evaluation Directorate Quality Assurance and Academic Accreditation International Accreditation Dept.

Academic Program Specification Form For The Academic

University: Al-Turath University
College : collage of engineering
Biomedical Engineering Department
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Dean's Name Date : / /

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Dean's Assistant For Scientific Affairs

Date : / /
Signature

The College Quality Assurance And University Performance Manager

Date :/ /
Signature

Quality Assurance And University Performance Manager Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering Department
3. Program Title	**Anatomy II 1**
4. Title of Final Award	Bachelor in Biomedical engineering.
5. Modes of Attendance offered	Courses
6. Accreditation	Study plans approved by sectoral committee
7. Other external influences	Related laws and guidelines
8. Date of production/revision of this specification	2023/ 2024
9. Aims of the Program	
1-Graduation of qualified scientific and professional staff in the specializations of Biomedical Engineering.	
2-Preparing academically qualified cadres for admission to postgraduate studies.	
3-Students who are scientifically qualified in the field of Biomedical Engineering techniques.	

4- Keeping abreast of the scientific development of the educational process.
5 - Scientific cooperation with the ministries of the state and the private sector.
6- Contributing to scientific research, holding seminars and conferences, and participating in conferences.

10. Learning Outcomes, Teaching, Learning and Assessment Methods
A. Cognitive Goals A1. The number of scientifically qualified graduates in the field of Biomedical Engineering. A2. Preparing academically qualified caders for admission to post graduate studies. A3. To keep pace with the scientific development of the educational process.
B. The skills goals special to the programme . B1. Professional skills in the aspects of Biomedical Engineering B2. Skills in data analysis and medical treatments for them in the specializations of anesthesia and intensive care, biomedical engineering B3. Acquisition of the necessary skills in the field of specialization
Teaching and Learning Methods
1. Adopting the method of giving lectures. 2. Giving practical case studies. 3. Practical exercises and discussion by the students among themselves and with the professor of the subject. 4. Laboratories and benefit from electronic programs. 5. Adopting platforms and e-learning and blended learning when needed.
Assessment methods
1-Adopting smart methods such as smart boards and display screens. 2- Students' participation in the lecture. 3- Preparing for the subject and adopting exercises as homework.

4- Expand their understanding by asking questions about their previous studies.

A. Affective and value goals

C1. Instilling values and principles in the student. The nature of life medicine absolutely
C2. Emphasis on the personal characteristics of workers in the Biomedical Engineering sector, such as integrity, honesty, confidentiality, morals, and citizen health.
C3. A statement of the importance of the rules of professional conduct.
C4. Fighting financial and administrative corruption by the competent authorities.

Teaching and Learning Methods

1-Giving lectures that encourage emotional values.

2- Holding seminars and workshops for students during the school year.

3- Field visits to the relevant ministries and health institutions.

Assessment methods

1-Follow up on students' behavior.

2- Forming academic and educational guidance committees.

3- The educational supervisor for each class.

4- Student discipline committees.

B. General and Transferable Skills (other skills relevant to employability and personal development)

D1.Encouraging students to be creative and create a spirit of perseverance and self-denial by encouraging the need for joint cooperation among them to fulfill the requirements of understanding the study.

D2.Activating the activities of the graduate follow-up workshops.

D3. Volunteer work for students.

D4. Acquisition of students through self-education and self-talents such as sports and the arts, especially since the college has a Department of Biomedical Engineering.

Teaching and Learning Methods

1- Adopting the method of giving lectures.

2- Organizing workshops, seminars and conferences.

3- Field visits to health institutions related to medical specialization.

Assessment Methods

1- Giving lectures.

2- Organizing workshops and seminars and participating in conferences.

3- Introducing the rules and ethics of the profession.

11. Program Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
Second Year		**Anatomy II 1**		Bachelor Degree Requires (2) credits

13. Personal Development Planning
Encouraging the students to achieve the highest marks in the final stages of study at the college in order to be the first to achieve their future dreams by completing their studies in postgraduate and encouraging them to join professional institutes encouraging the specialized in Biomedical Engineering.
14. Admission criteria.
First: The Ministry's instructions for central admission. Second: Admission to the department is specific to specific criteria from the Ministry. Third: Graduates of the scientific branch exclusively. Fourth: Absorptive capacity. Fifth: Sequence of the department within the departments of the college
15. Key sources of information about the programme
1 - Curriculum and assistance books. 2 - Regulations and instructions of the Ministry. 3 - The Sectoral Committee. 4 - Examining the corresponding experiences of the universities in local, Arab and international universities.

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
Second Year First Course And Second Course		**Anatomy II 1**	Core	*			*	*	*	*	*	*	*	*	*	*	*	*	*

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering
3. Course title/code	**Anatomy II 1**
4. Modes of Attendance offered	Courses
5. Semester/Year	Course I and Course II
6. Number of hours tuition (total)	120
7. Date of production/revision of this specification	2023/2024

8. Aims of the Course
1-To provide students with knowledge of the academic and professional nature of medical work.
2- Learn the types of medical standards and how to apply them in the field of specialization.
3- Providing them with the necessary knowledge tools in the necessary medical night
4- Developing the student's medical awareness and benefiting from its applications. Medical corridors eccess to scientific and applied progress in the field of medicine, especially Biomedical Engineering.

9. Learning Outcomes, Teaching, Learning and Assessment Method

A. Cognitive goals.

A1- Students acquire knowledge of the academic and professional nature of their work.
A2 - Learning the types of standards and how to apply them in the field of expertise.
A3 - Providing them with the necessary knowledge tools in the vital names.
A4 - Developing students' water awareness and benefiting from the application of examining the scientific and applied progress in the divine field, especially the fields of engineering and medicine. Biomedical engineering, medicine and engineering.

B. The skills goals special to the course.

B1.Understand the nature of medical work and its applications.

B2. Take advantage of specialized applications in the field of employment upon graduation and know how to employ them.

B3. Contributing to scientific research, holding seminars and conferences, and participating in conferences.

Teaching and Learning Methods

1- Adopting the method of giving lectures.

2. Giving practical study areas.

3- Practical exercises and discussing them by the students among themselves and with the subject's professor.

4- Taking advantage of the laboratories and benefiting from electronic programs.

5- Adopting platforms and electronic and integrated education when needed.

Assessment methods

1- Through the participation of students in the lecture based on their prior preparation for the subject.

2- Giving them exercises as a homework and requesting its solution with independent papers taken from them in the next lecture.

3- Expand their knowledge by asking a simple question related to their previous studies and on which their studies in the department depend.

C. Affective and value goals

C1.They are used in the subject of medical biology and they are asked to search from the Internet to find out the answer and discuss it in the hall.

C2.Independence during The personality of the examiner, such as integrity, honesty, confidentiality and morals.

C3- A statement of the importance of the professional conduct rules of the examiner and his exposure to legal penalties in case of violation.

C4- Emphasis on the importance of fighting financial and administrative corruption by the competent authorities.

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the work of the laboratory equipment and with the participation of all students in the division with the professor to give the material a kind of interaction.

2- Giving them some simple practical exercises that are discussed by the students and solving them during the lecture and medical examinations.

Assessment methods

1- Through the participation of students in the lecture based on the analysis.
2- Giving them exercises as a homework and asking for it to be solved with independent papers.

3- Expanding their perceptions by asking a simple question related to their previous studies and on which their studies in the department depend. They are used in the subject (and they are asked to search from the Internet to find out the answer and discuss it in the hall).

D. General and rehabilitative transferred skills (other skills relevant to employability and personal development).

D1. Encouraging students to be creative and create a spirit of perseverance and self-denial through continuous encouragement of the necessity of joint and effective cooperation among them to achieve their academic requirements.

D2.Gaining them knowledge of the importance of developing their capabilities through self-education by getting acquainted with various knowledge

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
30	120	General understand	**Anatomy II 1**	Presence in College	Quiz and Exam

11. Infrastructure	
1. Books Required reading:	The Given Lectures
2. Main references (sources)	1. **SNELL'S CLINICAL ANATOMY BY REGIONS 10th Edition.** 2. **Cunningham's Manual of Practical Anatomy**
A- Recommended books and references (scientific journals, reports…).	1. **Gray's Atlas of Anatomy 3rd Edition.** 2. **USMLE Step1 Anatomy / Kaplan Medical**
B-Electronic references, Internet sites…	www.kenhub.com www.teachmeanatomy.info www.getbodysmart.com www.anatomyarcade.com www.practiceanatomy.com
12. The development of the curriculum plan	
Develop a curriculum plan by using up to date references in syllabus formulation.	

Republic of Iraq
Ministry of Higher Education & Scientific Research Supervision and Scientific Evaluation Directorate Quality Assurance and Academic Accreditation International Accreditation Dept.

Academic Program Specification Form For The Academic

Al-Turath University College: Al-Turath
Collage of engineering
Biomedical Engineering Department
Date Of Form Completion : 2023/2024

Dean's Name Date : / /

Signature

Dean's Assistant For Scientific Affairs

Date : / /
Signature

The College Quality Assurance And University Performance Manager

Date :/ /
Signature

Quality Assurance And University Performance Manager Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering Department
3. Program Title	Electric circuit
4. Title of Final Award	Bachelor's
5. Modes of Attendance offered	Courses
6. Accreditation	Study plans approved by sectoral committee
7. Other external influences	Related laws and guidelines
8. Date of production/revision of this specification	2023/2024
9. Aims of the Program	
1-Graduation of qualified scientific and professional staff in the specializations of Biomedical Engineering.	
2-Preparing academically qualified cadres for admission to postgraduate studies.	
3-Students who are scientifically qualified in the field of Biomedical Engineering techniques.	

4- Keeping abreast of the scientific development of the educational process.
5 - Scientific cooperation with the ministries of the state and the private sector.
6- Contributing to scientific research, holding seminars and conferences, and participating in conferences.

10. Learning Outcomes, Teaching, Learning and Assessment Methods
A.Cognitive Goals A1. The number of scientifically qualified graduates in the field of Biomedical Engineering. A2. Preparing academically qualified caders for admission to post graduate studies. A3. To keep pace with the scientific development of the educational process.
B. The skills goals special to the programme . B1. Professional skills in the aspects of Biomedical Engineering B2. Skills in data analysis and medical treatments for them in the specializations of anesthesia and intensive care, biomedical engineering B3. Acquisition of the necessary skills in the field of specialization
Teaching and Learning Methods
1.Adopting the method of giving lectures. 2. Giving practical case studies. 3- Practical exercises and discussion by the students among themselves and with the professor of the subject. 4- Laboratories and benefit from electronic programs. 5- Adopting platforms and e-learning and blended learning when needed.
Assessment methods

1-Adopting smart methods such as smart boards and display screens.
2- Students' participation in the lecture.
3- Preparing for the subject and adopting exercises as homework.
4- Expand their understanding by asking questions about their previous studies.

A. Affective and value goals

C1. Instilling values and principles in the student. The nature of life medicine absolutely
C2. Emphasis on the personal characteristics of workers in the Biomedical Engineering sector, such as integrity, honesty, confidentiality, morals, and citizen health.
C3. A statement of the importance of the rules of professional conduct.
C4. Fighting financial and administrative corruption by the competent authorities.

Teaching and Learning Methods

1-Giving lectures that encourage emotional values.

2- Holding seminars and workshops for students during the school year.

3- Field visits to the relevant ministries and health institutions.

Assessment methods

1-Follow up on students' behavior.

2- Forming academic and educational guidance committees.

3- The educational supervisor for each class.

4- Student discipline committees.

B. General and Transferable Skills (other skills relevant to employability and personal development)

D1.Encouraging students to be creative and create a spirit of perseverance and self-denial by encouraging the need for joint cooperation among them to fulfill the requirements of understanding the study.

D2.Activating the activities of the graduate follow-up workshops.

D3. Volunteer work for students.

D4. Acquisition of students through self-education and self-talents such as sports and the arts, especially since the college has a Department of Biomedical Engineering.

Teaching and Learning Methods

1-Adopting the method of giving lectures.

2 - Organizing workshops, seminars and conferences.

3- Field visits to health institutions related to medical specialization.

Assessment Methods

1-Giving lectures.

2- Organizing workshops and seminars and participating in conferences.

3- Introducing the rules and ethics of the profession.

11. Program Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
Second Year				Bachelor Degree Requires (x) credits

13. Personal Development Planning
Students to achieve the highest marks in the final stages of study at the college in order to be the first to achieve their future dreams by completing their studies in postgraduate and encouraging them to join professional institutes encouraging the specialized in Biomedical Engineering.
14. Admission criteria .
First: The Ministry's instructions for central admission. Second: Admission to the department is specific to specific criteria from the Ministry. Third: Graduates of the scientific branch exclusively. Fourth: Absorptive capacity. Fifth: Sequence The department is within the departments of the college
15. Key sources of information about the programme
1 - Curriculum and assistance books. 2 - Regulations and instructions of the Ministry. 3 - The Sectoral Committee. 4 - Examining the corresponding experiences of the universities in local, Arab and international universities.

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

				Programme Learning Outcomes													
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
First Year First Course And Second Course		physics		*			*	*	*	*	*	*	*	*	*	*	*	*	*
Second Year First Course And Second Course		Electric circuit		*			*	*	*	*	*	*	*	*	*	*	*	*	*

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering
3. Course title/code	Electric circuit
4. Modes of Attendance offered	Courses
5. Semester/Year	Course I and Course II
6. Number of hours tuition (total)	hrs. Theory and hours Practical
7. Date of production/revision of this specification	2022/ 2023

8. Aims of the Course
1-
2-
3 -
4.-

9. Learning Outcomes, Teaching, Learning and Assessment Method

A. Cognitive goals.

B. The skills goals special to the course.

Teaching and Learning Methods

Assessment methods

C. Affective and value goals

C1-
C2 -
C3 -
C4-

Teaching and Learning Methods

Assessment methods

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development).

10. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
30	150	Gneral understand		Presence in College	Quiz and Examine

11. Infrastructure	
1. Books Required reading:	Any Book with relationship
2. Main references (sources)	Electric circuit Physics
A- Recommended books and references (scientific journals, reports…).	
B-Electronic references, Internet sites…	

12. The development of the curriculum plan
Develop a curriculum plan by using up to date references in syllabus formulation.

وزارة التعليم العالي والبحث العلمي
جـــهاز الإشـــراف والتقـويم العلـمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

الجامعة : التراث
الكلية/ المعهد: كلية الهندسة
القسم العلمي : هندسة الطب الحياتي
تاريخ ملء الملف : 2023/2024

اسم المعاون العلمي:
التاريخ :

اسم العميد :
التاريخ :

دقق الملف من قبل
شعبة ضمان الجودة والأداء الجامعي
اسم مدير شعبة ضمان الجودة والأداء الجامعي:
التاريخ:

مصادقة السيد العميد

وصف البرنامج الأكاديمي

يوفر وصف البرنامج الأكاديمي هذا ايجازاً مقتضياً لأهم خصائص البرنامج ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من الفرص المتاحة . ويصاحبه وصف لكل مقرر ضمن البرنامج

١. المؤسسة التعليمية	كلية التراث الجامعة
٢. القسم العلمي / المركز	هندسة الطب الحياتي
٣. اسم البرنامج الأكاديمي او المهني	علم المواد الحيوية
٤. اسم الشهادة النهائية	بكلوريوس هندسة الطب الحياتي
٥. النظام الدراسي : سنوي /مقررات /أخرى	كورسات
٦. برنامج الاعتماد المعتمد	الخطط الدراسييه المعتمده من قبل اللجنه القطاعيه
٧. المؤثرات الخارجية الأخرى	القوانيين والارشادات ذات العلاقه
٨. تاريخ إعداد الوصف	2023/2024

٩. أهداف البرنامج الأكاديمي

١ - تخريج ملاكات علمية ومهنية مؤهلة في تخصصات هندسة الطب الحياتي.
٢ - تهيئة المتطلبات الأكاديمية المالية والبشرية للدراسات الأولية الصباحية في القسم.
٣ - مواكبة التطور العلمي للعملية التعليمية وحالة التنفيذ المتقن لها.
٤ - فتح القنوات المعرفية في التواصل البحثي والمهني والأستشاري مع الجهات المناظرة العامة والخاصة.
٥ - انتاج المعرفة المهنية ونشرها في مجالات هندسة الطب الحياتي من خلال تنظيم الندوات , الورشات, المحاضرات العلمية والدورات العلمية, والمؤتمرات وحلقات النقاش وغيرها.
٦- المساهمة في حل المشاكل المؤسسية في مجال الأختصاص.

١٠. مخرجات البرنامج المطلوبة وطرائق التعليم والتعلم والتقييم

أ- الاهداف المعرفية

١- أعداد خريجين مؤهلين علميا في هندسة الطب الحياتي.
٢- أعداد كوادر مؤهلة اكاديميا للقبول في الدراسات العليا.
٣- مواكبة التطور العلمي للعملية التعليمية.
٤ - التعاون العلمي مع وزارات الدولة والقطاع الخاص.
٥ - المساهمة في البحث العلمي واقامة الندوات والمؤتمرات والمشاركة في المؤتمرات.
٦- المساهمة في حل المشكلات المؤسسية بطرق علمية.

ب – الأهداف المهاراتية الخاصة بالبرنامج

١- مهارات مهنية في الجوانب هندسة الطب الحياتي.
٢- مهارات في تحليل البيانات والمعالجات الطبيه لها في هندسة الطب الحياتي.
٣– اكتساب المهارات اللازمة في مجال الأختصاص.

طرائق التعليم والتعلم

١- اعتماد اسلوب القاء المحاضرات.
٢- اعطاء حالات دراسية تطبيقية.
٣– تمارين عملية ومناقشتها من قبل الطلبة فيما بينهم ومع استاذ المادة.
٤– اعتماد المنصات والتعليم الألكتروني والمدمج عند الحاجة.

طرائق التقييم

١– اعتماد الوسائل الذكية كالسبورات الذكية وشاشات العرض.
٢- مشاركة الطلبة في المحاضرة.
٢- التحضير المسبق للمادة واعتماد التمارين كواجبات بيتية.
٤- توسيع مداركهم من خلال طرح اسئلة حول دراستهم السابقة.
٥– البحث في حل الموضوع بالأعتماد على المصادر العلمية والشبكة العنكبوتية.

ج- الأهداف الوجدانية والقيمية

١- زرع القيم والمبادئ لدى الطالب
٢- التأكيد على السمات الشخصية للعاملين في قطاع هندسة الطب الحياتي كالنزاهة واالامانة والسرية واالخالق وصحة المواطن.
٣- بيان اهمية قواعد السلوك المهني.
٤- محاربة الفساد المالي والأداري من قبل الأجهزة المختصة.

طرائق التعليم والتعلم

١- القاء المحاضرات التي تحث على القيم الوجدانية.
٢- اقامة الندوات والورش الى الطلبة خلال السنة الد راسية.
٣- زيارات ميدانية الى الوزارات والمؤسسات الصحية ذات العلاقة.

طرائق التقييم

١ – متابعه سلوك الطلبه.
٢- تشكيل لجان الارشاد الاكاديمي والتربوي.
٣- المشرف التربوي لكل صف .
٤- لجان انضباط الطلبه.

د -المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)

١- تشجيع الطلبة على الابداع وخلق روح المثابرة ونكران الذات من خلال التشجيع على ضرورة التعاون المشترك فيما بينهم لأنجاز متطلبات فهم الدراسة.
٢- تفعيل نشاطات ورش متابعة الخرجين.
٣- العمل التطوعي للطلبة.
٤- اكساب الطلبة من خلال التثقيف الذاتي والمواهب الذاتية كالرياضة والفنون سيما وان الكلية لديها قسم التربية البدنية وعلوم الرياضة.

طرائق التعليم والتعلم

١-اعتماد اسلوب القاء المحاضرات.
٢-اقامة ورش العمل والندوات والمؤتمرات.
٣ – زيارات ميدانية الى المؤسسات الصحية ذات العلاقة بالأختصاص الطبي.

طرائق التقييم

١– القاء المحاضرات.
٢- اقامة ورش العمل والندوات والمشاركة في المؤتمرات.
٣- التعريف بضوابط واخلاقيات المهنة.

١١. بنية البرنامج

المرحلة الدراسية	رمز المقرر أو المساق	اسم المقرر أو المساق	الساعات المعتمدة اسيوعيا	
			نظري	عملي
المرحلة الثانية الكورس الاول والكورس الثاني		علم المواد الحيوية	٣	

١٢. التخطيط للتطور الشخصي

تشجيع الطلبة على تحقيق اعلى العلامات في المراحل النهائية من الدراسة في الكلية كي يكونوا الأوائل بغية تحقيق احلامهم المستقبلية من اكمال دراستهم في الدراسات العليا وتشجيعهم على الألتحاق بالمعاهد المهنية المتخصصة في قسم هندسة الطب الحياتي.

١٣. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد)

أولا: تعليمات الوزارة الخاصة بالقبول المركزي.

ثانيا: القبول في القسم خاص بمعايير محددة من الوزارة.

ثالثا: خريجي الفرع العلمي حصرا.

رابعا: الطاقة الأستيعابية.

خامسا: تسلسل القسم ضمن اقسام الكلية.

١٤. أهم مصادر المعلومات عن البرنامج

١ – الكتب المنهجية والمساعدة.

٢– ضوابط وتعليمات الوزارة.

٣–اللجنة القطاعية.

٤ – الأطلاع على تجارب الأقسام المناظرة في الجامعات المحلية والعربية والعالمية.

مخطط مهارات المنهج																							
يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم																							
																	مخرجات التعلم المطلوبة من البرنامج					
السنة / المستوى	رمز المقرر	اسم المقرر	أساسي أم اختياري	الأهداف المعرفية						الأهداف المهاراتية الخاصة بالبرنامج				الأهداف الوجدانية والقيمية				المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)			
				أ١	أ٢	أ٣	أ٤	ب١	ب٢	ب٣	ب٤	ج١	ج٢	ج٣	ج٤	د١	د٢	د٣	د٤				
المرحلة الثانية		علم المواد الحيوية	اساسي	*			*	*	*	*	*	*	*	*	*	*	*	*	*				

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجاز مقتضبا لاهم خصائص المقرر(علم المواد الحيوية) ومخرجات التعلم المتوقعةً من الطالب تحقيقها مبرهنا التعلم المتاحة ولابد من الربطً بينها وبين وصف البرنامج.

١. المؤسسة التعليمية	كلية التراث الجامعة
٢. القسم العلمي / المركز	هندسة الطب الحياتي
٣. اسم / رمز المقرر	علم المواد الحيوية
٤. أشكال الحضور المتاحة	الصفوف الدراسية
٥. الفصل / السنة	كورسات
٦. عدد الساعات الدراسية (الكلي)	٩٠ ساعة
٧. تاريخ إعداد هذا الوصف	٢٠٢٤/٢٠٢٣

٨. أهداف المقرر

يقدم هذا المساق منظور متوازن على الانضباط تطور العلوم الحيوية من قبل بما في ذلك المعلومات عن المواد الحيوية الصلبة والمواد الحيوية لينة، والأفكار العظام والمفاهيم القلب والأوعية الدموية، والأفكار العيون، والقضايا الأسنان. وستتضمن الدورة التوازن بين المفاهيم البيولوجية الأساسية، علوم المواد الخلفية، الاهتمامات الطبية / السريرية، فضلا عن تغطية الحيوية الماضي والحاضر والمستقبل. والهدف من هذه الدورة هو للطالب لاكتساب التقدير متينا للأهمية الخاصة للكلمة مادة بيولوجية وكذلك التطور السريع ومثير، والتوسع في العلوم الحيوية وتطبيقاتها في مجال الطب.

٩.مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ- الأهداف المعرفية

أ١- استعمال المعلومات وطرق النمذجة المختلفة بطريقة علمية مع وجود الطرق الرياضية المختلفة في تحليل وفهم الجهاز الطبي بشكليه النظري والتطبيقي العملي.

أ٢- بناء النموذج التصميمي للجهاز الطبي من خلال الفهم الدقيق وتطبيق القوانين الفيزيائية والطبية السريرية وخوارزميات التحليل للوصول الى التصميم الامثل.

أ٣- بيان الدور الحقيقي لمهندس الطب الحياتي اثناء عمله في المجاميع البحثية والطبية.-

ب - الأهداف المهاراتية الخاصة بالمقرر.

ب- ١ -فهم طبيعة العمل الهندسي والطبي وتطبيقاته.

ب٢ -الأستفادة من التطبيقات الهندسية والطبية في المجال الوظيفي عند التخرج ومعرفة كيفية توظيفها.

ب٣ - المساهمة في البحث العلمي واقامة الندوات والمؤتمرات والمشاركة في المؤتمرات.

طرائق التعليم والتعلم

١- اعتماد اسلوب القاء المحاضرات.
٢- اعطاء حلقات دراسية تطبيقية.
٣ – تمارين عملية ومناقشتها من قبل الطلبة فيما بينهم ومع استاذ المادة.
٤– اعتماد المنصات والتعليم الألكتروني والمدمج عند الحاجة.
٥– اعتماد الوسائل الذكية كالسبورات الذكية وشاشات العرض

طرائق التقييم

١- مشاركة الطلبة في المحاضرة.
٢التحضير المسبق للمادة واعتماد التمارين كواجبات بيتية.
٣- توسيع مداركهم من خلال طرح اسئلة حول دراستهم السابقة.
٤– البحث في حل الموضوع بالأعتماد على المصادر العلمية والشبكة العنكبوتية.
٥-الامتحانات اليومية والشهرية.

ج- الأهداف الوجدانية والقيمية

ج١- زرع القيم والمبادئ لدى الطالب من خلال التأكيد على استقلالية الفاحص عند ابداء رأيه المحايد.

ج٢- التأكيد على السمات الشخصية للفاحص كالنزاهة والأمانة والسرية والاخلاق.

ج٣- بيان اهمية قواعد السلوك المهني للفاحص وتعرضه للعقوبات القانونية في حالة مخالفته.

ج٤- التأكيد على اهمية محاربة الفساد المالي والاداري من قبل الأجهزة المختصة.

د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي).

د١- المهارات العامة والتأهيلية المنقولة, المهارات الاخرى المتعلقة بقابلية التوظيف والتطور الشخصي.

د ١- تشجيع الطلبة على الابداع وخلق روح المثابرة ونكر الذات لديهم من خلال التشجيع المستمر على ضرورة التعاون المشترك والفاعل فيما بينهم الانجاز متطلباتهم الدراسية.

د ٢- تم تزويدهم بالموقع الالكتروني الخاص بالجامعة المتعلق بتوافر فرص مستقبلية للتعيين والتوظيف.

د ٣- أكسابهم معرفة بأهمية تطوير قابلياتهم من خلال تثقيف الذات بالاطلاع على مختلف المعارف.

١٠بنية المقرر					
الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / المساق أو الموضوع	طريقة التعليم	طريقة التقييم
١	٣		**مقدمة للمواد الحيوية Part(1)**		
٢	٣		**مقدمة للمواد الحيوية Part(2)**		
٣	٣		**الأواصر الذرية**		
٤	٣		**الهيكل البلّوري وتنظيم الذرّاتِ**		
٥	٣		**تصنيفِ السبائك المعدنيةِ**		
٦	٣		**معادن الزراعة (Stainless)**		
٧	٣		**معادن الزراعة (Co-Based alloys)**		
٨	٣		**معادن الزراعة (Ti – Based alloys)**		
٩	٣		**معادن أسنانِ**		
١٠	٣		**تآكل المعادني المزروعة**		
١١	٣		**أنواع التآكلِ**		
١٢	٣		**دراسة حالات من التآكلِ**		
١٣	٣		**مخطط الطور (بنائه)**		
١٤	٣		**مخطط الطور (للسبائك)**		
١٥	٣		**أنواع البوليمرات**		
١٦	٣		**تفاعلات البلمرة**		
١٧	٣		**البوليمرات المزروعة**		
١٨	٣		**المواد السيراميكية**		
١٩	٣		**الخصائص الميكانيكية (الاجهادات والتشوهات)**		
٢٠	٣		**الخصائص الميكانيكية (الفشل الميكانيكي القساوة, ..)**		
٢١	٣		**الخصائص الميكانيكية (الكسرِ part 1)**		
٢٢	٣		**الخصائص الميكانيكية (الكسرِ part 2)**		
٢٣	٣		**الخصائص الميكانيكية (التعب)**		
٢٤	٣		**الخصائص الميكانيكية (التلف والإحتكاك)**		
٢٥	٣		**نظرية Viscoelasticity**		
٢٦	٣		**تطبيقات Viscoelasticity**		
٢٧	٣		**الخصائص الحرارية**		
٢٨	٣		**الخصائص الكهربائية والكهروضغطية**		
٢٩	٣		**البصريات، خصائص الإنتشارَ والمساميةَ**		
٣٠	٣		**الخصائص السطحية والإلتصاق**		

١١.البنية التحتية	
١ـ الكتب المقررة المطلوبة	اي كتب اخرى ذات العلاقه
٢ـ المراجع الرئيسية (المصادر)	كتب علم المواد الحيوية
ا ـ الكتب والمراجع التي يوصى بها (المجلات العلمية , التقارير ,....)	Joon Park, R. S. Lakes, Biomaterials: An Introduction 2007 Donglu Shi, Introduction to biomaterials 2006. Joon Park, Biomaterials: principle and applications. William D. Callister, Jr and David G. Rethwisch Materials Science and Engineering,9^{th} .
ب ـ المراجع الالكترونية, مواقع الانترنيت	

وزارة التعليم العالي والبحث العلمي
جـــهاز الإشـــراف والتقـــويم العلـمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

الجامعة :
الكلية/ المعهد: التراث / الجامعه
القسم العلمي : هندسة الطب الحياتي
تاريخ ملء الملف : 2024/2023

اسم المعاون العلمي: **اسم العميد :**
التاريخ : **التاريخ :**

دقق الملف من قبل
شعبة ضمان الجودة والأداء الجامعي
اسم مدير شعبة ضمان الجودة والأداء الجامعي:
التاريخ:

مصادقة السيد

العميد

وصف البرنامج الأكاديمي

يوفر وصف البرنامج الأكاديمي هذا ايجازاً مقتضياً لأهم خصائص البرنامج ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من الفرص المتاحة . ويصاحبه وصف لكل مقرر ضمن البرنامج

١. المؤسسة التعليمية	كلية التراث الجامعة
٢. القسم العلمي / المركز	هندسة الطب الحياتي
٣. اسم البرنامج الأكاديمي او المهني	مقاومة المواد (ميكانيكية المواد)
٤. اسم الشهادة النهائية	بكلوريوس هندسة طب حياتي
٥. النظام الدراسي : سنوي /مقررات /أخرى	كورسات
٦. برنامج الاعتماد المعتمد	الخطط الدراسييه المعتمده من قبل اللجنه القطاعيه
٧. المؤثرات الخارجية الأخرى	لايوجد
٨. تاريخ إعداد الوصف	2023-2024

٩. أهداف البرنامج الأكاديمي

١ - تخريج ملاكات علمية ومهنية مؤهلة في تخصصات هندسة الطب الحياتي.
٢ - تهيئة المتطلبات الأكاديمية المالية والبشرية للدراسات الأولية الصباحية في القسم.
٣ - مواكبة التطور العلمي للعملية التعليمية وحالة التنفيذ المتقن لها.
٤ - فتح القنوات المعرفية في التواصل البحثي والمهني والأستشاري مع الجهات المناظرة العامة والخاصة.
٥ - انتاج المعرفة المهنية ونشرها في مجالات هندسة الطب الحياتي من خلال تنظيم
الندوات ، الورشات، المحاضرات العلمية والدورات العلمية، والمؤتمرات وحلقات النقاش وغيرها.
٦- المساهمة في حل المشاكل المؤسسية في مجال الاختصاص.

١٠. مخرجات البرنامج المطلوبة وطرائق التعليم والتعلم والتقييم

أ- الاهداف المعرفية

١- أعداد خريجين مؤهلين علميا في هندسة الطب الحياتي.
٢- أعداد كوادر مؤهلة اكاديميا للقبول في الدراسات العليا.
٣- مواكبة التطور العلمي للعملية التعليمية.
٤ - التعاون العلمي مع وزارات الدولة والقطاع الخاص.
٥ - المساهمة في البحث العلمي واقامة الندوات والمؤتمرات والمشاركة في المؤتمرات.
٦- المساهمة في حل المشكلات المؤسسية بطرق علمية.

ب – الأهداف المهاراتية الخاصة بالبرنامج

١- مهارات مهنية في الجوانب هندسة الطب الحياتي.
٢- مهارات في تحليل البيانات والمعالجات الطبية لها في هندسة الطب الحياتي.
٣– اكتساب المهارات اللازمة في مجال الأختصاص.

طرائق التعليم والتعلم

١- اعتماد اسلوب القاء المحاضرات.
٢- اعطاء حالات دراسية تطبيقية.
٣– تمارين عملية ومناقشتها من قبل الطلبة فيما بينهم ومع استاذ المادة.
٤- المختبرات والاستفادة من البرامج الإلكترونية.
٥– اعتماد المنصات والتعليم الألكتروني والمدمج عند الحاجة.

طرائق التقييم

١– اعتماد الوسائل الذكية كالسبورات الذكية وشاشات العرض.
٢- مشاركة الطلبة في المحاضرة.
٢- التحضير المسبق للمادة واعتماد التمارين كواجبات بيتية.
٤- توسيع مداركهم من خلال طرح اسئلة حول دراستهم السابقة.
٥– البحث في حل الموضوع بالاعتماد على المصادر العلمية والشبكة العنكبوتية.

ج- الأهداف الوجدانية والقيمية

١- زرع القيم والمبادئ لدى الطالب
٢- التأكيد على السمات الشخصية للعاملين في قطاع هندسة الطب الحياتي كالنزاهة والأمانة والسرية والخلق وصحة المواطن.
٣- بيان اهمية قواعد السلوك المهني.
٤- محاربة الفساد المالي والإداري من قبل الأجهزة المختصة.

طرائق التعليم والتعلم

١- القاء المحاضرات التي تحث على القيم الوجدانية.
٢- اقامة الندوات والورش الى الطلبة خلال السنة الد راسية.
٣- زيارات ميدانية الى الوزارات والمؤسسات الصحية ذات العلاقة.

طرائق التقييم

١ – متابعه سلوك الطلبه.
٢- تشكيل لجان الارشاد الاكاديمي والتربوي.
٣- المشرف التربوي لكل صف .
٤- لجان انضباط الطلبه.

د -المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)

١- تشجيع الطلبة على الابداع وخلق روح المثابرة ونكران الذات من خلال التشجيع على ضرورة التعاون المشترك فيما بينهم للإنجاز متطلبات فهم الدراسة.
٢- تفعيل نشاطات ورش متابعة الخرجين.
٣- العمل التطوعي للطلبة.
٤- اكساب الطلبة من خلال التثقيف الذاتي والمواهب الذاتية كالرياضة والفنون سيما وان الكلية لديها قسم التربية البدنية وعلوم الرياضة.

طرائق التعليم والتعلم

١-اعتماد اسلوب القاء المحاضرات.
٢-اقامة ورش العمل والندوات والمؤتمرات.
٣ – زيارات ميدانية الى المؤسسات الصحية ذات العلاقة بالاختصاص الطبي.

طرائق التقييم

١ – القاء المحاضرات.
٢- اقامة ورش العمل والندوات والمشاركة في المؤتمرات.
٣- التعريف بضوابط واخلاقيات المهنة.

١١. بنية البرنامج

المرحلة الدراسية	رمز المقرر أو المساق	اسم المقرر أو المساق	الساعات المعتمدة اسيوعيا

			نظري	عملي
المرحلة الثانية الكورس الاول		مقاومة المواد (ميكانيكية المواد)	٣	

١٢.التخطيط للتطور الشخصي

تشجيع الطلبة على تحقيق اعلى العلامات في المراحل النهائية من الدراسة في الكلية كي يكونوا الأوائل بغية
تحقيق احلامهم المستقبلية من اكمال دراستهم في الدراسات العليا وتشجيعهم على الألتحاق بالمعاهد المهنية
المتخصصة في قسم هندسة الطب الحياتي.

١٣. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد)

أولا: تعليمات الوزارة الخاصة بالقبول المركزي.
ثانيا: القبول في القسم خاص بمعايير محددة من الوزارة.
ثالثا: خريجي الفرع العلمي حصرا.
رابعا: الطاقة الأستيعابية.
خامسا: تسلسل القسم ضمن اقسام الكلية.

١٤. أهم مصادر المعلومات عن البرنامج

١ - الكتب المنهجية والمساعدة.
٢- ضوابط وتعليمات الوزارة.
٣-اللجنة القطاعية.
٤ – الاطلاع على تجارب الأقسام المناظرة في الجامعات المحلية والعربية والعالمية.

مخطط مهارات المنهج																											
يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم																											
																		مخرجات التعلم المطلوبة من البرنامج									
السنة / المستوى	رمز المقرر	اسم المقرر	أساسي أم اختياري	الأهداف المعرفية						الأهداف المهاراتية الخاصة بالبرنامج						الأهداف الوجدانية والقيمية						المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)									
				أ١	أ٢	أ٣	أ٤	ب١	ب٢	ب٣	ب٤	ج١	ج٢	ج٣	ج٤	د١	د٢	د٣	د٤									
المرحلة الثانية		ميكانيكية المواد	اساسي	*			*	*	*	*	*	*	*	*	*	*	*	*	*									

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجاز مقتضبا لاهم خصائص المقرر(ميكانيكة المواد) ومخرجات التعلم المتوقعةً من الطالب تحقيقها مبرهنا التعلم المتاحة ولابد من الربطً بينها وبين وصف البرنامج.

١. المؤسسة التعليمية	كلية التراث الجامعة
٢. القسم العلمي / المركز	هندسة الطب الحياتي
٣. اسم / رمز المقرر	مقاومة المواد (ميكانيكية المواد)
٤. أشكال الحضور المتاحة	الصفوف الدراسييه
٥. الفصل / السنة	كورسات
٦. عدد الساعات الدراسية (الكلي)	٣ساعه نظري
٧. تاريخ إعداد هذا الوصف	2023-2024
٨. أهداف المقرر ١ من خلال هذا المقرر الدراسي سيتعلم الطالب فهم السلوك الميكانيكي الواجب معرفته لضمان التصميم الامن لكل انواع المنشاءات	

١٠. مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ- المعرفة والفهم

أ١- استعمال المعلومات وطرق النمذجة المختلفة بطريقة علمية مع وجود الطرق الرياضية المختلفة في تحليل وفهم الجهاز الطبي بشكليه النظري والتطبيقي العملي.

أ٢- بناء النموذج التصميمي للجهاز الطبي من خلال الفهم الدقيق وتطبيق القوانين الفيزيائية والطبية السريرية وخوارزميات التحليل للوصول الى التصميم الامثل.

أ٣- بيان الدور الحقيقي لمهندس الطب الحياتي اثناء عمله في المجاميع البحثية والطبية.

ب - الأهداف المهاراتية الخاصة بالمقرر.

ب١ – مناقشة المفردات الاولية والمعلومات الفيزيائية المهمة لجهازي المفراس والرنين.

ب٢ – مناقشة التميم الاولي والتصميم المتقدم وكيفيات العمل من خلال مجموعة من الصور والفيديوات التحليلية.

طرائق التعليم والتعلم

١- ان طرق التعلم المعتمدة هي الاتية:

٢- ان المحاضرات التي يتم تقديمها الى الطلبة تكون على شكل مجموعة من الشرائح التقديمية، او عن طريق العارض الضوئي او يتم كتابتها بشكل مباشر من قبل المحاضر.

٣- هناك محاضرات يتم طباعتها وتوزيعها مسبقا الى الطلاب بحيث يتم وضع الملاحظات ومناقشتها اثناء الدرس.

٤- هناك مادة محاضرات علمية توضع على الصفحات الالكترونية عبر الانترنت.

٥- المناقشة من خلال الاسئلة والاجابات خلال اوقات المحاضرة الرسمية او في الساعات المكتبية للتدريسي.

طرائق التقييم

- الامتحان التحريري.
- الواجبات البيتية.

الامتحانات البيتية .

ج- الأهداف الوجدانية والقيمية

ج١- زرع القيم والمبادئ لدى الطالب من خلال التأكيد على استقلالية الفاحص عند ابداء رأيه المحايد.

ج٢- التأكيد على السمات الشخصية للفاحص كالنزاهة والأمانة والسرية والاخلاق.

ج٣- بيان اهمية قواعد السلوك المهني للفاحص وتعرضه للعقوبات القانونية في حالة مخالفته.

ج٤- التأكيد على اهمية محاربة الفساد المالي والاداري من قبل الأجهزة المختصة.

د ـ المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي).

د١ـ التحليل العميق للمسائل الهندسية المختلفة.

د٢ـ الاستعمال الامثل لكل التخصصات والمهارات المتعددة لمعالجة التصاميم الهندسية للاجهزة الطبية.

٩. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / المساق أو الموضوع	طريقة التعليم	طريقة التقييم
١	٣		Simple stress: analysis of internal forces + simple stress		
٢	٣		Impact stress + shear stress		
٣	٣		simple emotion: stress-exhaustion scheme		
٤	٣		Hooke's law + axial deformation		
٥	٣		Poison Ratio		
٦	٣		test		
٧	٣		Heat stress		
٨	٣		torsion		
٩	٣		racking in bolts + structure spring		
١٠	٣		Shear and torque in beams		
١١	٣		Relationship of loads with each other + test		
١٢	٣		Moving loads + stress in the beams		
١٣	٣		Deviation in the beams: double integral theory		
١٤	٣		Deviation in the beams: double integral theory		
١٥	٣		exam		

١٠.البنية التحتية	
١ـ الكتب المقررة المطلوبة	**اي كتب اخرى ذات العلاقه**
٢ـ المراجع الرئيسية (المصادر)	**كتب مقاومة المواد**

ا- الكتب والمراجع التي يوصى بها (المجلات العلمية ، التقارير ،....)	1. Strength of materials, R. C. Hibbeler, sixth edition in SI units, 2005. 2. Strength of materials, Pytel and Singer, fourth edition 3. Applied strength of materials for engineering technology, Barry Dupen, 2012
ب - المراجع الالكترونية، مواقع الانترنيت	https://libgen.is/book/index.php?md5=C0F7A62F8FA72FA8EF870E55699E9906

Republic of Iraq
Ministry of Higher Education & Scientific Research Supervision and Scientific Evaluation
Directorate Quality Assurance and Academic Accreditation International Accreditation Dept.

Academic Program Specification Form For The Academic

University: Al-Turath University College
College : Al-Turath University College
Number Of Departments In The College:
Biomedical Engineering Department
Date Of Form Completion : //

Dean's Name Date : /
/
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

The College Quality Assurance And University Performance Manager
Date :/ /
Signature

Quality Assurance And University Performance Manager Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering Department
3. Program Title	MECHANICS OF MATERIALS
4. Title of Final Award	Biomedical Engineering Department
5. Modes of Attendance offered	Courses
6. Accreditation	Study plans approved by sectoral committee
7. Other external influences	Related laws and guidelines
8. Date of production/revision of this specification	2023-2024
9. Aims of the Program	
1-Graduation of qualified scientific and professional staff in the specializations of Biomedical Engineering.	
2-Preparing academically qualified cadres for admission to postgraduate studies.	
3-Students who are scientifically qualified in the field of Biomedical Engineering techniques.	

4- Keeping abreast of the scientific development of the educational process.
5 - Scientific cooperation with the ministries of the state and the private sector.
6- Contributing to scientific research, holding seminars and conferences, and participating in conferences.

10. Learning Outcomes, Teaching, Learning and Assessment Methods
A.Cognitive Goals A1. The number of scientifically qualified graduates in the field of Biomedical Engineering. A2. Preparing academically qualified caders for admission to post graduate studies. A3. To keep pace with the scientific development of the educational process.
B. The skills goals special to the programme . B1. Professional skills in the aspects of Biomedical Engineering B2. Skills in data analysis and medical treatments for them in the specializations of anesthesia and intensive care, biomedical engineering B3. Acquisition of the necessary skills in the field of specialization
Teaching and Learning Methods
1.Adopting the method of giving lectures. 2. Giving practical case studies. 3- Practical exercises and discussion by the students among themselves and with the professor of the subject. 4- Laboratories and benefit from electronic programs. 5- Adopting platforms and e-learning and blended learning when needed.
Assessment methods
1-Adopting smart methods such as smart boards and display screens. 2- Students' participation in the lecture. 3- Preparing for the subject and adopting exercises as homework.

4- Expand their understanding by asking questions about their previous studies.

A. Affective and value goals

C1. Instilling values and principles in the student. The nature of life medicine absolutely
C2. Emphasis on the personal characteristics of workers in the Biomedical Engineering sector, such as integrity, honesty, confidentiality, morals, and citizen health.
C3. A statement of the importance of the rules of professional conduct.
C4. Fighting financial and administrative corruption by the competent authorities.

Teaching and Learning Methods

1-Giving lectures that encourage emotional values.

2- Holding seminars and workshops for students during the school year.

3- Field visits to the relevant ministries and health institutions.

Assessment methods

1-Follow up on students' behavior.

2- Forming academic and educational guidance committees.

3- The educational supervisor for each class.

4- Student discipline committees.

B. General and Transferable Skills (other skills relevant to employability and personal development)

D1.Encouraging students to be creative and create a spirit of perseverance and self-denial by encouraging the need for joint cooperation among them to fulfill the requirements of understanding the study.

D2.Activating the activities of the graduate follow-up workshops.

D3. Volunteer work for students.

D4. Acquisition of students through self-education and self-talents such as sports and the arts, especially since the college has a Department of Biomedical Engineering.

Teaching and Learning Methods

1-Adopting the method of giving lectures.

2 - Organizing workshops, seminars and conferences.

3- Field visits to health institutions related to medical specialization.

Assessment Methods

1-Giving lectures.

2- Organizing workshops and seminars and participating in conferences.

3- Introducing the rules and ethics of the profession.

11. Program Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
Second Year		Mechanics of materials		Bachelor Degree Requires (x) credits

13. Personal Development Planning
Students to achieve the highest marks in the final stages of study at the college in order to be the first to achieve their future dreams by completing their studies in postgraduate and encouraging them to join professional institutes encouraging the specialized in Biomedical Engineering.
14. Admission criteria .
First: The Ministry's instructions for central admission. Second: Admission to the department is specific to specific criteria from the Ministry. Third: Graduates of the scientific branch exclusively. Fourth: Absorptive capacity. Fifth: Sequence The department is within the departments of the college
15. Key sources of information about the programme
1 - Curriculum and assistance books. 2 - Regulations and instructions of the Ministry. 3 - The Sectoral Committee. 4 - Examining the corresponding experiences of the universities in local, Arab and international universities.

Curriculum Skills Map																		
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																		
				Programme Learning Outcomes														
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
Second Year First Course		Mechanics of materials		*			*	*	*	*	*	*	*	*	*	*	*	*	*

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Turath University College
2. University Department/Centre	Biomedical Engineering
3. Course title/code	Mechanics of materials
4. Modes of Attendance offered	Courses
5. Semester/Year	Course I
6. Number of hours tuition (total)	3 hrs. Theory
7. Date of production/revision of this specification	2023-2024

8. Aims of the Course

During this course, the student learned the mechanical behavior that must be known for safety in all types of structures

9. Learning Outcomes, Teaching, Learning and Assessment Method

A- Knowledge and understanding

A1- The use of information and different modeling methods in a scientific way, with the existence of different mathematical methods in analyzing and understanding the medical device in both its theoretical and applied forms.

A2- Building the design model for the medical device through accurate understanding and application of physical and clinical laws and analysis algorithms to reach the optimal design.

A 3- Statement of the real role of the biomedical engineer during his work in the research and medical groups.

B. The skills goals special to the course.

B1 - Discussing the initial vocabulary and the important physical information for the telescope and resonance devices.

B2 - Discussing the initial design, advanced design and modalities of work through a set of analytical photos and videos.

Teaching and Learning Methods

1- The approved learning methods are as follows:

2- The lectures that are presented to the students are in the form of a set of presentation slides, or by means of an optical projector, or they are written directly by the lecturer.

3- There are lectures that are printed and distributed in advance to students, so that notes are placed and discussed during the lesson.

4- There is a material for scientific lectures that is placed on electronic pages via the Internet.

5- Discussion through questions and answers during the official lecture times or during the teaching office hours.

Assessment methods

1- Written exam.
2- Homework.
3- Home exams.

C. Affective and value goals

C1- Instilling values and principles in the student by emphasizing the examiner's independence when expressing his impartial opinion.

C2 - Emphasis on the personal characteristics of the examiner such as integrity, honesty, confidentiality and ethics.

C3 - A statement of the importance of the examiner's rules of professional conduct and his exposure to legal penalties in case of violation.

C4- Emphasizing the importance of combating financial and administrative corruption by the competent authorities.

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development).

D1- Deep analysis of various engineering issues.
D2 - the optimal use of all disciplines and multiple skills to address the engineering designs of medical devices.

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
15	**45**	Gneral understa nd	Mechanics of materials	Presence in College	Quize and Examine
	3		Simple stress: analysis of internal forces + simple stress		
	3		Impact stress + shear stress		
	3		simple emotion: stress-exhaustion scheme		
	3		Hooke's law + axial deformation		
	3		Poison Ratio		
	3		test		
	3		Heat stress		
	3		torsion		
	3		racking in bolts + structure spring		
	3		Shear and torque in beams		
	3		Relationship of loads with each other + test		
	3		Moving loads + stress in the beams		

	3		Deviation in the beams: double integral theory		
	3		Deviation in the beams: double integral theory		
	3		exam		
	3		Simple stress: analysis of internal forces + simple stress		

11. Infrastructure	
1. Books Required reading:	Any Book with relationship
2. Main references (sources)	Mechanics of materials
A- Recommended books and references (scientific journals, reports…).	1. Strength of materials, R. C. Hibbeler, sixth edition in SI units, 2005. 2. Strength of materials, Pytel and Singer, fourth edition 3. Applied strength of materials for engineering technology, Barry Dupen, 2012
B-Electronic references, Internet sites…	https://libgen.is/book/index.php?md5=C0F7A62F8FA72FA8EF870E55699E9906

12. The development of the curriculum plan
Develop a curriculum plan by using up to date references in syllabus formulation.

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.؛

1. المؤسسة التعليمية	جامعة التراث الاهلية / كلية الهندسة
2. القسم العلمي / المركز	هندسة الطب الحياتي
3. اسم / رمز المقرر	Analog electronics
4. أشكال الحضور المتاحة	حضوري
5. اسم التدريسي	م.محمد حسين علي فهد
6. الفصل / السنة	الكورس الاول / المرحلة الثالثة
7. عدد الساعات الدراسية (الكلي)	60
8. تاريخ إعداد هذا الوصف	2024/4/1
9. أهداف المقرر	
1. تقديم الطالب الى أساسيات الدوائر الإلكترونية ومكوناتها المستخدمة في الأجهزة والمعدات الإلكترونية 2. تهيئة الطالب لدراسة الحسابات المختلفة في الدوائر الإلكترونية والتعرف على مختلف النظريات لدراسة	

10. مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ- الأهداف المعرفية

اذا اتم الطالب هذا المقرر بنجاح فانه يكون قادرا على:

أ 1 - يتعرف الطالب على مكونات الدوائر الإلكترونية

أ 2- يفهم الطالب الحسابات المختلفة في الدوائر الإلكترونية

أ 3- يتعرف الطالب على مختلف النظريات في تحليل الدوائر الإلكترونية.

ب - الأهداف المهاراتية الخاصة بالمقرر.

ب1 – يكتسب الطالب مهارة تحليل وحساب الدوائر الإلكترونية.
ب2 – يكتسب الطالب مهارة تصميم الدوائر الإلكترونية للتطبيقات المختلفة.

طرائق التعليم والتعلم

- المحاضرات النظرية
- اعداد التقارير من خلال الاستفادة من المكتبة والإنترنيت
- النقاشات الجماعية.

طرائق التقييم

- الامتحانات النظرية الدورية والفصلية
- الاختبارات القصيرة (Quizzes)
- الواجبات (Home works)

ج- الأهداف الوجدانية والقيمية

ج1- إدراك مطلوبات مهنة الهندسة والمسؤولية الأخلاقية.
ج2- يستقبل ويتقبل المعرفة
ج3- إدراك بالحاجة إلى التعلم مدى الحياة والقدرة على الانخراط فيه.

طرائق التعليم والتعلم

- المحاضرات النظرية
- المناقشات الجماعية
- دراسة حالة (Case Study)

طرائق التقييم
1- ألمتحانات االسبوعية والشهرية والنهائية .
2- اعداد المحاضرات والمناقشة العلمية
3- األلنشطة اليومية .
4- كتاب ة التقارير.

د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي).

د1- - تنمية الطالب للتفكير بطريقة هندسية بحته
د2- تنمية الطالب بمعرفة الدوائر الكهربائية وكيفية التعامل معها.
د3- القدرة على استخدام التقنيات والمهارات الهندسية الحديثة والأدوات اللازمة لممارسة مهنة الهندسة.

11- بنيه الماده الدراسيه					
الاسبوع	**الساعات**	**مخرجات التعلم السنويه**	**اسم الموضوع**	**طريقه التعلم**	**طريقه التقييم**
الاول	4 نظري	الطالب يفهم الموضوع	1- The PN Junction Diode. 2- Diode Switching Circuits.	نظري	المشاركة اليومية
الثاني	4 نظري	الطالب يفهم الموضوع	1- Diode Clipping Circuits 2- Diode Clamping Circuits,	نظري	المشاركة اليومية
الثالث	4 نظري	الطالب يفهم الموضوع	Circuits Rectifier D	نظري	المشاركة اليومية
الرابع	4 نظري	الطالب يفهم الموضوع	Voltage-Multiplier Circuits	نظري	المشاركة اليومية
الخامس	4 نظري	الطالب يفهم الموضوع	Zener Diodes and Applications	نظري	Quiz+ المشاركة اليومية
السادس	4 نظري	الطالب يفهم الموضوع	Bipolar Junction Transistor (BJTs)	نظري	quiz
السابع	4 نظري	الطالب يفهم الموضوع	DC Biasing Circuits of BJTs	نظري	Quiz+ المشاركة اليومية
الثامن	4 نظري	الطالب يفهم الموضوع	1- Bias Stabilization 2- BJT Switching Circuits	نظري	Quiz+ المشاركة اليومية
التاسع	4 نظري	الطالب يفهم الموضوع	1- BJT Modeling 2- AC Equivalent Circuits sequence.	نظري	Quiz+ المشاركة اليومية

العاشر	4 نظري	الطالب يفهم الموضوع	BJT Small-Signal Analysis	نظري	quiz
الحادي عشر	4 نظري	الطالب يفهم الموضوع	Frequency Response of BJT Amplifiers	نظري	quiz+ المشاركة اليومية
الثاني عشر	4 نظري	الطالب يفهم الموضوع	Field-Effect Transistors	نظري	Quiz+ المشاركة اليومية
الثالث عشر	4 نظري	الطالب يفهم الموضوع	DC Biasing Circuits of JFETs	نظري	quiz+ المشاركة اليومية
الرابع عشر	4 نظري	الطالب يفهم الموضوع	JFET Small-Signal Analysis	نظري	المشاركة اليومية
الخامس عشر	4 نظري	الطالب يفهم الموضوع	Frequency Response of JFET Amplifiers	نظري	المشاركة اليومية

10. البنية التحتية	
1- الكتب المقررة المطلوبة	1. Robert Boylestad and Louis Nashelsky, Electronic Devices and Circuit Theory, 7th Edition. 2. Thomas L. Floyd, Electronic Devices, 6th Edition
2- المراجع الرئيسية (المصادر)	• Thedore F. Bogart, Electronic Devices and Circuits, 2nd Edition • Donald A. Neamen, , Electronic Circuit Analysis and Design, 2nd Edition Albert Malvino, Electronic .Principles, 2nd Edition
ا- الكتب والمراجع التي يوصى بها (المجلات العلمية , التقارير ,....)	المجلات العلمية في الاختصاص
ب - المراجع الالكترونية, مواقع الانترنيت	

11. خطة تطوير المقرر الدراسي
1- الالمام بكل ماهو مستحدث وجديد في استراتيجيات التعليم والتعلم. 2- اقامة الندوات العلمية وضرورة مشاركة الطلبة بها لزيادة الخبرة ودفع الطالب للبحث وتطوير خبراته

3- اسئلة العصف الذهني الاستخراج خيال الطالب ومعرفة مهارته

اسم وتوقيع التدريسي

م.محمد حسين علي فهد

اسم وتوقيع رئيس القسم

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.؛

1. المؤسسة التعليمية	جامعة التراث الاهلية / كلية الهندسة
2. القسم العلمي / المركز	هندسة الطب الحياتي
3. اسم / رمز المقرر	Signal processing
4. أشكال الحضور المتاحة	حضوري
5. اسم التدريسي	م.محمد حسين علي فهد
6. الفصل / السنة	الكورس الاول / المرحلة الثالثة
7. عدد الساعات الدراسية (الكلي)	45 ساعة
8. تاريخ إعداد هذا الوصف	2024/4/1
9. أهداف المقرر	
The students should be able to understand how to analyze a given signal or system using tools such as Fourier transform and z-transform; what kind of characteristics should we analyze to know the property of a signal or system; how to process signals to make them more useful; and how to design a signal processor (digital filter) for a given problem.	

10. مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ- الأهداف المعرفية

• Understand the significance of digital signal processing in multi-media technology, Biomedical applications.
• Familiarity with fundamental concepts such as 'linearity', 'time-invariance', 'impulse response', 'convolution', 'frequency response', 'z- transforms' and the 'discrete time Fourier transform'. as applied to signal processing systems.
• Knowledge of digital filters and their application to digitised sound and images.
• Understand how FIR and IIR type digital filters: may be designed and implanted in software.
• Understand analogue/digital conversion as required for the digital processing of analogue signals.
• Understand the discrete Fourier transform (DFT), its applications and its implementation by FFT techniques. Gain some knowledge of the 2-D FFT and its application to image processing and compression.

ب - الأهداف المهاراتية الخاصة بالمقرر.

تهدف المادة إلى تعليم المفاهيم الأساسية والخوارزميات والتطبيقات للإشارات والأنظمة المستمرة والوقت المنفصل وتنفيذ هذه الأساسيات في جميع جوانب الحياة والعلوم الحديثة ؛ من الاتصالات والترفيه إلى الصحة والاقتصاد. ستناقش بعض التقنيات المستخدمة في تحليل التردد الزمني مع بعض تطبيقات هذه الطرق في تحليل الإشارات متعددة الوسائط

طرائق التعليم والتعلم

- المحاضرات العلمية التي تم اعداها من قبل الأستاذ على شكل مجموعه من الشرائح التقديمية حيث يناقش فيها اساسيات واهم المفاهيم المعتمدة
- المناقشات الحرة الهم الأفكار واهم الاستفسارات الممكنة
- رفع المادة العلمية على الموقع الإلكتروني
- استخدام كتب منهجية ومرجعية في المقرر الدراسي

طرائق التقييم

- الامتحانات النظرية الدورية والفصلية
- الاختبارات القصيرة (Quizzes)
- الواجبات (Home works)

ج- الأهداف الوجدانية والقيمية

ج1- إدراك مطلوبات مهنة الهندسة والمسؤولية الأخلاقية.
ج2- يستقبل ويتقبل المعرفة
ج3- إدراك بالحاجة إلى التعلم مدى الحياة والقدرة على الانخراط فيه.

طرائق التعليم والتعلم

- المحاضرات النظرية
- المناقشات الجماعية
- دراسة حالة (Case Study)

طرائق التقييم

1- الامتحانات الأسبوعية والشهرية والنهائية .
2- اعداد المحاضرات والمناقشة العلمية
3- الأنشطة اليومية .
4- كتاب ة التقارير.

د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي).

د1- القدرة على تحديد وصياغة وحل المشاكل الهندسية.
د2- القدرة على تصميم التجارب واجراءها وتحليل البيانات وتفسيرها.
د3- القدرة على استخدام التقنيات والمهارات الهندسية الحديثة والأدوات اللازمة لممارسة مهنة الهندسة.

11- بنيه الماده الدراسيه

الاسبوع	الساعات	مخرجات التعلم السنويه	اسم الموضوع	طريقه التعلم	طريقه التقييم
الاول	3 نظري	الطالب يفهم الموضوع	Introduction to DSP / Type of signals	نظري	المشاركة اليومية
الثاني	3 نظري	الطالب يفهم الموضوع	Representation of discrete time signal / Definition of discrete System	نظري	المشاركة اليومية
الثالث	3 نظري	الطالب يفهم الموضوع	Discrete convolution / Graphical method	نظري	المشاركة اليومية
الرابع	3 نظري	الطالب يفهم الموضوع	Discrete convolution / Analytical method	نظري	المشاركة اليومية
الخامس	3 نظري	الطالب يفهم الموضوع	Linear constant coefficient difference equation	نظري	امتحانات اسبوعية –اسئلة قبلية وبعدية
السادس	3 نظري	الطالب يفهم الموضوع	The frequency response of linear	نظري	امتحانات اسبوعية

		shift invariant system			اسئلة قبلية وبعدية–
السابع	3 نظري	الطالب يفهم الموضوع	Property of frequency response / Definition of Z-transform	نظري	Quiz+ المشاركة اليومية
الثامن	3 نظري	الطالب يفهم الموضوع	Definition of Fourier transform and its properties	نظري	امتحانات اسبوعية اسئلة قبلية وبعدية–
التاسع	3 نظري	الطالب يفهم الموضوع	The discrete Fourier transform	نظري	Quiz+ المشاركة اليومية
العاشر	3 نظري	الطالب يفهم الموضوع	Definition of Fast Fourier transform (FFT)	نظري	امتحانات اسبوعية اسئلة قبلية وبعدية–
الحادي عشر	3 نظري	الطالب يفهم الموضوع	DIFFFT / DIFFT	نظري	quiz+ المشاركة اليومية
الثاني عشر	3 نظري	الطالب يفهم الموضوع	Digital filter and spectral analysis	نظري	Quiz+ المشاركة اليومية
الثالث عشر	3 نظري	الطالب يفهم الموضوع	Design of nonrecursive digital filter (FIR)	نظري	امتحانات اسبوعية اسئلة قبلية وبعدية–
الرابع عشر	3 نظري	الطالب يفهم الموضوع	Design of recursive digital filter (IIR)	نظري	امتحانات اسبوعية اسئلة قبلية وبعدية–
الخامس عشر	3 نظري	الطالب يفهم الموضوع	Seminar activity	نظري	امتحانات اسبوعية اسئلة قبلية وبعدية–

10. البنية التحتية	
1-"Discrete-Time Signal Processing: Pearson New International Edition" Alan V Oppenheim; Ronald W. Schafer, Pearson Education, 3rd Edition, 2013 2- "Schaum's Outline of Theory and Problems of Digital Signal Processing"	1- الكتب المقررة المطلوبة

2- المراجع الرئيسية (المصادر)	• Thedore F. Bogart, Electronic Devices and Circuits, 2nd Edition • Donald A. Neamen, , Electronic Circuit Analysis and Design, 2nd Edition Albert Malvino, Electronic .Principles, 2nd Edition
ا- الكتب والمراجع التي يوصى بها (المجلات العلمية , التقارير ,....)	المجلات العلمية في الاختصاص
ب - المراجع الالكترونية, مواقع الانترنيت	

11. خطة تطوير المقرر الدراسي
1- الالمام بكل ما هو مستحدث وجديد في استراتيجيات التعليم والتعلم. 2- اقامة الندوات العلمية وضرورة مشاركة الطلبة بها لزيادة الخبرة ودفع الطالب للبحث وتطوير خبراته 3- اسئلة العصف الذهني الاستخراج خيال الطالب ومعرفة مهارته

اسم وتوقيع التدريسي

م. محمد حسين علي فهد

اسم وتوقيع رئيس القسم

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Biomedical Engineering department
2. University Department/Centre	AlTurath university
3. Course title/code	Electromagnetic fields
4. Programme(s) to which it contributes	B.Sc. in Biomedical Engineering
5. Modes of Attendance offered	Full time
6. Semester/Year	Semester
7. Number of hours tuition (total)	45
8. Date of production/revision of this specification	2023/2024
9. Aims of the Course	
The aim of this headquarters is to prepare an engineer who can understand, estimate and provide solutions for a wide range of electromagnetic field problems in the practical environment, as well as to provide a basis for understanding the electromagnetic fields and their relationship with human body. Additionally, to explain to students how electromagnetic fields and their applications can be applied in medical equipment and medicine in general.	

10· Learning Outcomes, Teaching ,Learning and Assessment Methods

A- Knowledge and Understanding

A1. Understand how electromagnetic fields are produced.

A2. Make the students familiar with how various charge distributions can affect its surroundings based existing media.√

A3. Make the students able to assess and measure voltages based their source and the surrounding parts at different positions.

A4. Make students able to imagine the positions of sources and how they affect the destination which are normally sensing units.

B. Subject-specific skills

B1.√**Solid knowledge of multiple integrals and various coordinate systems.**

B2.

Teaching and Learning Methods

1- Lecture notes.
2- Internet based homeworks.

Assessment methods

1- Short tests (2).
2- Long test (1).
3- Research report.

C. Thinking Skills

C1. Problem solving.

C2. Homework leading to report preparation.

Teaching and Learning Methods

We use the blackboard and wide screen to introduce the students to this course, we also let the students to participate in the problem solving process in the class and by giving them homeworks.

Assessment methods

Quizzes and midterm examinations

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. √**The most important skill students can acquire during this course is building their self-confidence by making them prepare a report about a research they find in the internet. Selecting the proper report directly related to the course material is difficult and really important to make the students feel responsible about the chosen research, where they have to prepare the report and discuss it with the instructor using face-to-face contact.**

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4		**Introduction**	Lecture	
2	4		**X,Y, Z coordinates**	Lecture	
3	4		**Cylindrical coordinates**	Lecture	
4	4		**Spherical coordinates**	Lecture	
5	4		**Vectors analysis**	Lecture	
6	4		**Coulomb's law**	Lecture	
7	4		**Electrical Forces**	Lecture	Test (short test)
8	4		**Electrical Field Intensity**	Lecture	
9	4		**Point, Line, surface charge**	Lecture	Test (long test)
11	4		**Electrical filed density**	Lecture	
11	4		**Flux**	Lecture	
12	4		**Flux intensity**	Lecture	
13	4		**Guesses law**	Lecture	
14	4		**Energy and potential**	Lecture	Test (short test)
15	4		**Potential field of a point, line and sheet charges**	Lecture	Report preparation

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1- Engineering electromagnetic, W. Hayt, 6th edition, 2006. 2- Classical Electromagnetic Theory, 2nd edition, J. Vanderlinde, Canada, 2011. 3- Electricity and Magnetism, B. Crowell, 2007.
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Mathematics III and IV
Minimum number of students	10
Maximum number of students	40

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	AlTurath university
2. University Department/Centre	Biomedical Engineering Department
3. Course title/code	Physiology\ BME541
4. Programme(s) to which it contributes	B.Sc. Biomedical Engineering
5. Modes of Attendance offered	Full Time
6. Semester/Year	2 Semesters
7. Number of hours tuition (total)	4 Hours weekly
8. Date of production/revision of this specification	2023/2024
9. Aims of the Course	
The goal of physiology is to explain the physical and chemical factors that are responsible for the origin, development and progression of life. Physiology course present tremendous challenges to both students& teachers for acquisition of the basic facts is essential to the study of physiology, but also important for students to develop the ability to solve practical, real life problems releated to the knowledge they have acquired.	

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

Graduates will be able to:

A2. Apply their knowledge and understanding of physical and biological laws, mathematics and numerical analysis in order to model Biomedical Engineering and similar systems;

A4. Explain the role of Biomedical Engineers in society and the constraints within which their engineering judgment will be exercised.

B. Subject-specific skills

B2. Design, from requirement, market need or specification, a biomedical engineering device implant or system, up to the preliminary design stage, and present this design via a series of poster, written and oral presentations from both group and individual work;

B3. Use laboratory and workshop equipment to generate data, including both engineering and physiological measurements, with appropriate rigor;

Teaching and Learning Methods

Staff involved in the degree program utilize a wide range of teaching methods that they deem the most appropriate for a particular course. These include:

• Lectures where the students write information presented to them via slide show, overhead or written by the lecturer;
• Lectures where the students have some printed notes/handouts and may annotate, or expand these during a spoken lecture;
• Small group and large group tutorial sessions;
• Question and answer sessions during lectures or staff Office Hours;
• Laboratory sessions.

Assessment methods

1. Seminar presented and discussed.

Assessment Methods to be used are:

• Written examinations (Summative assessment);
• Oral presentations of individual and group work;
• Individual written project report(s) of both individual and group projects;
• Homework;
• Take home exams;

• Practical skills will be assessed through laboratory experiments, write – ups, coursework reports, project reports and presentations;
• Experimental, research and design skills will be assessed through laboratory experiments write-ups, coursework reports, project reports and presentations;
• Presentation skills through group presentations and poster presentations.

Quizzes and exams.

C. Thinking Skills

C2. Analyze and solve engineering problems;
C3. Design a Biomedical Engineering system, component or process to meet a need;
C4. Integrate knowledge and understanding of other scientific, mathematical, computational or engineering disciplines in order to support their engineering specialization.

Teaching and Learning Methods

• External lectures from industry or clinicians;
• Feedback given to students during tutorials;
• Small group and large group tutorial sessions;
• Question and answer sessions during lectures or staff Office Hours;
• Guided reading of texts, journal articles etc., for individual and group projects;
• Completion of web-based exercises or computer based laboratory sessions;

Assessment methods

• Individual written project report(s) of both individual and group projects;
• Group written project report(s) of group projects;
• Interview of group project manager and assessment of group project minutes;
• Poster presentation of group project work;
• Practical skills will be assessed through laboratory experiments, write-ups, coursework reports, project reports and presentations;
• Experimental, research and design skills will be assessed through laboratory experiments write-ups, coursework reports, project reports and presentations;
• Presentation skills through group presentations and poster presentations.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D2. Use appropriate multi-disciplinary skills to solve Biomedical Engineering problems, combining the biological and engineering knowledge gained through the degree;
D3. Demonstrate numeracy and literacy in written reports, project work and examinations;
D4. Learn effectively for the purpose of continuing professional development and in a wider context throughout their career.

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4		Introduction to human physiology, Levels of Structural Organization, interrelationships among body organ systems.		
2	4		Homeostasis,Feedback Mechanisms, Regulation of body system.		
3	4		Blood physiology, Blood Composition and Functions, Formed Elements,		
4	4		Bone marrow, Red blood cells, Erythropoietin.		
5	4		Production of Erythrocytes, formation of hemoglobin, anemia, polycythemia. Regulation and Requirements for Erythropoiesis		
6	4		Blood types, transfusion reactions resulting from mismatching, transplantation of tissue and organs.		
7	4		Muscle physiology, skeletal muscle, sarco-tubular system		
8	4		Excitation- contraction coupling, muscle twitch, muscle types,		

			Oxygen debt mechanism		
9	4		Examination		
10	4		Physiology of digestive system, digestion, saliva, gastric juice		
11	4		Bile juice, pancreatic juice, intestinal juice		
12	4		Absorption, Regulation of digestion.		
13	4		Introduction to Immunity, types of immunity, Immunization, Vaccine.		
14	4		Resistance of body to infection, Humoral immunity, classes of Antibodies. Complement system, Cell-mediated immunity, types of t-cells		
15	4		Examination		
16	4		Physiology of urinary system		
17	4		Urine formation, GFR, Micturition		
18	4		RAASystem. Dialysis		
19	4		Physiology of Endocrine system, Cell signaling		
20	4		Hormonal System, Transmissions		
21	4		Chemical structure of Hormones.		
22	4		Mechanisms of hormonal action		
23	4		Physiology of Central nervous system, Neurotransmitters, classification of neurotransmitters,neuromodulators , action of neuromodulators		
24	4		Examination		
25	4		Receptors, classification , mechanism and developmentof receptors		
26	4		Reflexes, classification, reflex Arc, Knee-Jerk reflex, withdrawal reflex		
27	4		Sensations, somatosensory system,		
28	4		Pain, referred pain, analgesia system, gait control theory		
29	4		Memory, types of memory		
30	4		Term Exam		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1.C. Gytun.M. D. John (2010) Text book of medical physiology . 13 Edition. 2. D. U. Silverthon (2010) Human physiology. 5 Edition. 3. K.Sembulingam, Perma Sembulingam.Essential of medical physiology . 6th . edition. 2012 4- Elaine N. Marieb, Katja Hoehn. Human Antomy & Physiology, 9th edition. 2013. 5- Laralee Sherwood, Christopher ward. Human physiology from cell to system. 2013.
Special requirements (include for example workshops, periodicals, IT software, websites)	**1-** Hypothalamic damage in multiple sclerosis correlates with disease activity, disability, depression, and fatigue. Kantorová E1, Poláček H2, Bittšanský M3, Baranovičová E3, Hnilicová P3, Čierny D4, Sivák Š1, Nosáľ V1, Zeleňák K5, Kurča E1. **2-** Anemia modifies the prognostic value of glycated hemoglobin in patients with diabetic chronic kidney disease. Kuo IC1,2, Lin HY1,3, Niu SW1,2, Lee JJ4, Chiu YW4,5, Hung CC4, Hwang SJ4,5, Chen HC4,5. **3-** Breathing with neuromuscular disease: Does compensatory plasticity in the motor drive to breathe offer a potential therapeutic target in muscular dystrophy? O'Halloran KD1, Burns DP2.
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	BME 541
Minimum number of students	20
Maximum number of students	30

جمهورية العراق

وزارة التعليم العالي والبحث العلمي

جهاز الاشراف والتقويم العلمي

بسم الله الرحمن الرحيم

اسم الجامعة: التراث

اسم الكلية: كليةالهندسة
اسم القسم:هندسة الطب الحياتي
المرحلة: الثالثة
اسم المحاضر الثلاثي:مروة مصطفى اسماعيل
اللقب العلمي: مدرس مساعد
المؤهل العلمي: ماجستير هندسة الليزر والالكترونيات البصرية

((استمارة الخطة التدريسية السنوية))

اسم التدريسي	مروة مصطفى اسماعيل
البريد الالكتروني	marwa.mustafa1985@gmail.com
اسم المادة	Medical optics in Engineering
مقرر الفصل	الفصل الثاني
اهداف المادة	1.توضيح المفاهيم الاساسية في علم الفيزياء. 2.لمعرفة والفهم الظواهر الطبيعية المحيطة وتفسيرها 3.ايضاح دور مهندس الطب الحياتي في المجتمع واهم اعماله الهندسية
الكتب المنهجية	Optics, N. Subrahmanyam Brij Lal, 2009. - An introduction to LASERS theory and applications, M.N. Avadhanulu, 2009. Optics, Light and Lasers The Practical Approach to Modern Aspects of Photonics and Laser Physics, Dieter Meschede, 2004

تقديرات الفصل	النظري	العملي	السعي النهائي	الامتحان النهائي
	%40	%10	%50	%50

جمهورية العراق

وزارة التعليم العالي والبحث العلمي

جهاز الاشراف والتقويم العلمي

بسم الله الرحمن الرحيم

اسم الجامعة: التراث

اسم الكلية: كليةالهندسة
اسم القسم:هندسة الطب الحياتي
المرحلة: الثالثة
اسم المحاضر الثلاثي:مروة مصطفى اسماعيل
اللقب العلمي: مدرس مساعد
المؤهل العلمي: ماجستير هندسة الليزر والالكترونيات البصرية

استمارة الخطة التدريسية للمادة

الاسبوع	التاريخ	المادة النظرية	المادة العملية	الملاحظات
1th	27/1/2024	Introduction		
2 th	3/2/2024	Introduction to light		
3 th	10/2/2024	Lenses		
4 th	17/2/2024	Lenses		
5 th	24/2/2024	Ray tracing for an object with finite extent		
6 th	2/3/2024	Mid exam		
7 th	9/3/2024	Power of the lens		
8 th	16/3/2024	Optical Aberration		
9 th	23/3/2024	How the Eyes Sense Light		
10 th	30/3/2024	Common Visual Defects in The Human Eye (Errors of Refraction)		
11 th	6\4\2024	Astigmatism—Anamorphic Lenses		
12 th	20\4\2024	Mid exam		
13 th	27\4\2024	Fundamental Parameters of an Optical Fiber		
14 th	4\5\2024	Optical Fiber Types		
15 th	11\5\2024	Review		

توقيع الاستاذ : مروم مصطفى اسماعيل

توقيع العميد:

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	AlTurath university
2. University Department/Centre	Collage of Engineering/ Biomedical Engineering Department
3. Course title/code	Digital Electronic Engineering
4. Programme(s) to which it contributes	BSc. in Engineering
5. Modes of Attendance offered	Weekly attendance
6. Semester/Year	Academic Semester
7. Number of hours tuition (total)	30hrs. Theoretical
8. Date of production/revision of this specification	2023/2024
9. Aims of the Course	
The course will introduce basic digital Electronics, concepts, including: devices, network, architecture, reference, models, layering, service, interface, multiplexing, switching and standards. An overview of digital communication to identify all electronic devices (design, analysis, operation) and their applications and Topics covered in this course include, Specify FETS, operational amp.	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
Knowledge and Understanding A1. Understand the purpose of digital Electronics concepts, principles, design issues and techniques. A2. Understand and contrast between different types of Electronic A3. Understand how to describe the best using in the active systems and what can be the future applications.
B. Subject-specific skills B1. Possessing a strong technical background as well as analytical and problem solving skills. B2. B3.
Teaching and Learning Methods
Lectures
Assessment methods
Written exams
C. Thinking Skills C1. Ability to conduct standard tests and measurements; to conduct, analyse and interpret experiments; and to apply experimental results to improve processes. C2.
Teaching and Learning Methods
Tutorials
Assessment methods
Homework and written Assignment

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. Ability to function effectively as a member or leader on a technical team.
D2. Contribute in a variety of technical roles within the electronics and high-tech industry
D3.
D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
16	2	SCR type characteristic		Lecture	Discussion
17	2	SCR trigger circuit		Lecture	Discussion
18	2	SCR application		Lecture	Written Quiz
19	2	Multistage systems		Lecture	Discussion
20	2	Multistage systems & special amplifiers		Lecture	Discussion
21	2	Large signal amplifiers (power transistors)		Lecture	Discussion
22	2	power transistors, class A			
23	2	power transistors, class A transformer coupled		Lecture	Discussion
24	2	power transistors, class B(push – pull)		Lecture	Discussion
25	2	BJT&FET frequency response		Lecture	Discussion
26	2	The operational amplifier as an electrical circuit		Lecture	Discussion
27	2	Operational applications		Lecture	Discussion
28	2	Frequency Response of BJT Transistor		Lecture	Discussion
29	2	Frequency Response of FET Transistor		Lecture	Discussion
30	2	**second semester exam**		Lecture	Discussion

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**1.** Robert Boylestad , Louis Nashelsky , 2010 , Electronic Devices and Circuit Theory ,Pearson International Edition , Ltd. London , ISBN-13: 978-0-13-606463-3 **2.** James Bignell , Robert Donovan , 2007 , Digital Electronics , Thomson Delmar Learning , Printed in United States Of America , ISBN : 1418020265 **3.** Digital Electronics principles & applications , 2008 , the Mc graw-Hill companies , Toheim Roger , Inc. ,1221 Avenue of Americas , New York , NY 10020 , ISBN: 978-0-07-312634-0
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	High school degree or equivalent degree according to the regulations of the Ministry of Higher Education and Scientific Research in Iraq.
Minimum number of students	
Maximum number of students	

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	AlTurath university
2. University Department/Centre	Biomedical Engineering Department
3. Course title/code	Thermodynamics
4. Programme(s) to which it contributes	B.Sc. Biomedical Engineering
5. Modes of Attendance offered	Full Time
6. Semester/Year	1 Course
7. Number of hours tuition (total)	45 Hours for each course
8. Date of production/revision of this specification	2023/2024

9. Aims of the Course

This course aims at providing the student with the necessary basic and advanced concepts for the followings:

To present a comprehensive treatment of classical thermodynamics while retaining an engineering perspective. To lay the groundwork for subsequent studies in such fields as fluid mechanics, heat transfer and to prepare the students to effectively use thermodynamics in the practice of engineering. To develop an intuitive understanding of thermodynamics by emphasizing the physics and physical arguments. To present a wealth of real world engineering examples to give students a feel for how thermodynamics is applied in engineering practice.

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

Graduates will be able to:

A1. Use their information and thoughtful of the appropriate modelling, scientific and computational tools that support medical instrumentation, to solve, in depth, analytical, design or theoretical problems in this field.

A2. Apply their data and understanding of physical and clinical laws, arithmetic analysis in order to model medical device and any other similar systems.

A3. Explain the role of Biomedical Engineers in medical instrumentation group of work and the constraints within which their clinical judgment will be exercised.

B. Subject-specific skills

B1. Discuss the principles of general block diagram for medical systems.

B2. Discuss the design requirements and specifications, the preliminary stages of designs and their modified action and work, via series of videos and figures.

B3. Use the preliminary understanding to build a virtual explanation for the desired and undesired plan of design.

B4. Discuss the ability to explain new modification and the new trend of clinical supportive works.

Teaching and Learning Methods

The teaching and learning of such important Couse include the followings:

1. Lectures by the instructor himself explaining the main and important points of design.
2. Free discussion of the brain storm presented at the lecture times and discuss the new and future trends.
3. Seminars presented by the student and discussed directly by the other student and instructor.
4. Discussions of important points and induced ideas through social media.

Assessment methods

1. Seminar presented and discussed.
2. Site visited through group of students and under supervising of official medical company.
3. Home works and challenges of design thoughts.
4. Quizzes and exams.

C. Thinking Skills

C1. Apply appropriate analytical mathematics, scientific and engineering tools to the analysis of problems;
C2. Analyze and solve engineering problems;
C3. Design a medical device system, component or process to meet a need;
C4. Integrate knowledge and understanding of other scientific, mathematical, computational or engineering disciplines in order to support their engineering specialization.

Teaching and Learning Methods

- Internal lectures from manufacturers or clinicians;
- Feedback given to students during tutorials;
- Question and answer sessions during lectures or staff Office Hours;
- Guided reading of texts, journal articles etc., for individual and group projects;

Assessment methods

- Individual written report(s).
- Group discussions of group work brainstorm case studies.
- Practical skills will be assessed through troubleshoot technique.
- Experimental, research and design skills will be assessed through laboratory experiments write-ups, coursework reports, project reports and presentations;
- Presentation skills through group presentations and poster presentations.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Apply in depth problem solving and analytical thinking to a diverse range of problems;
D2. Use appropriate multi-disciplinary skills to solve medical device problems, combining the biological and engineering knowledge gained through the degree;
D3. Demonstrate numeracy and literacy in written reports, project work and examinations;
D4. Learn effectively for the purpose of continuing professional development and in a wider context throughout their career.

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
First course					
1	3		A Review of Thermodynamic Concepts ▪ Energy ▪ Heat ▪ Heat transfer ▪ Temperature ▪ Distinction between heat and temp. ▪ What is the thermodynamics? ▪ What is the difference between Heat Transfer and Thermodynamics? ▪ Energy in thermodynamics ▪ Internal energy ▪ Total energy ▪ Broadening Our Understanding of Energy ▪ What is the thermal-fluid sciences? ▪ What is the bio transport? ▪ Application Areas of Thermodynamics ▪ Units of Energy ▪ Units of Temperature		
2	3		Introductory Concepts & Definitions in Thermodynamics ▪ Defining Systems & Types of Systems – System – Types of Systems • closed system (control mass) • open system, or a control volume, ▪ Describing Systems and Their Behavior – Property – Extensive and Intensive Properties – State, Process, Path and Cycle – Path functions and point functions – Equilibrium – Uniform, Steady and Steady-Flow Process – Actual and Quasi-equilibrium Processes		
3	3		Energy Transfer by Work ▪ Moving Boundary Work ▪ Special cases of P&V		

			relationships – The constant volume proces – The constant pressure – PV = Constant process = C – The process $PV^n = C$. ▪ Shaft Work ▪ Spring Work ▪ Electrical Work ▪ Flow work and power		
4	3		Energy Transfer by Heat ▪ Adiabatic system ▪ Isothermal process ▪ Determine heat transfer rate		
5	3		Equation of State ▪ The ideal gas law – Kinetic Theory of Gases – Boyle's Law – Charles s law – Gay-Lussac's Law – Avogadro's Law – General Gas Law		
6	3		Heat and Other Forms of Energy ▪ Latent energy or latent heat. - Enthalpy of Ideal Gases - Specific Heats of Gases, Liquids, and Solids ▪ Specific Heats (Heat Capacity) of Ideal Gases ▪ Specific Heats of Solids and Liquids		
7	3		Solution of problems		Quiz 1
8	3		▪ The First Law of Thermodynamics ▪ Energy Balance for Closed Systems ▪ The First Law Applied to Various Process - The Constant-Temperature Process (Isothermal process) - The Constant-Volume Process - The Constant-Pressure Process - The Adiabatic Process		
9	3		Energy Balance for Steady-Flow Processes Surface Energy Balance Heat Transfer Mechanisms ▪ Conduction – Thermal Conductivity – Thermal Diffusivity ▪ Convection		

			▪ Radiation		
10	3		Solution of problems		Quiz 2
11	3		▪ Mass and Energy Analysis of Control Volumes ▪ Conservation of Energy for a Control Volume ▪ Forms of the Control Volume Energy Rate Balance ▪ Some Steady - Flow Engineering Devices - Nozzles and Diffusers - Compressors and Pumps - Heat exchangers - Throttling Devices - Pipe and Duct Flow		
12	3		Phase-Change Processes of Pure Substances ▪ Compressed liquid and Saturated liquid ▪ Saturated Vapor and Superheated Vapor ▪ Saturation Temperature and Saturation Pressure Property Diagrams for Phase-Change Processes ▪ The *T*- *v* Diagram ▪ The *P*- *v* Diagram		
13	3		Steam Tables Saturated ▪ Saturated Liquid and Saturated Vapor States ▪ Saturated Liquid–Vapor Mixture Superheated Vapor ▪ Compressed Liquid		
14	3		Solution of problems		
15	3		Mid exam		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**1.** Engineering Thermodynamics by P. K. Nag **2.** Introduction to Thermal Systems Engineering by Michael J. Moran **3.** Heat and Mass transfer by Rajendra Karwa
Special requirements (include for example workshops, periodicals, IT software, websites)	Check the new modern websites talking about the new modifications
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	BME 445
Minimum number of students	20
Maximum number of students	30

نموذج وصف البرنامج الاكاديمي

مراجعة أداء مؤسسات التعليم العالي ((مراجعة البرنامج الاكاديمي))

وصف البرنامج ألكاديمي

يوفر وصف البرنامج الإكاديمي هذا ايجازا مقتضيا لاهم خصائص البرنامج و مخرجات التعلم المتوقعه من الطالب تحقيقها مبرهنا عما اذا كان قد حقق الاستفادة القصوى من الفرص المتاحة. و يصاحبه وصف لكل مقرر في البرنامج

1. المؤسسة التعليمية	**جامعة التراث – كلية الهندسة الخوارزمي**
2. القسم الجامعي / المركز	قسم هندسة لطب الحياتي
3. اسم البرنامج ألكاديمي	بكلوريوس هندسة طب حياتي
4. اسم الشهادة النهائية	بكلوريوس هندسة طب حياتي
5. النظام الدراسي	كورسات
6. برنامج الاعتماد المعتمد	ABET
7. المؤثرات الخارجية الأخرى	لا يوجد
8. تاريخ اعداد الوصف	20/4/2024
9. أهداف البرنامج الاكاديمي	
أن يكون الطالب قادرًا على حل النماذج الرياضية التي تمثل نماذج فيزيائية وهندسية مختلفة عدديًا وإيجاد أفضل ما يناسب البيانات التجريبية واتساع الصورة الهندسية للطالب.	

12. مخرجات التعليم المطلوبة وطرائق التعليم والتعليم والتقييم

أ- المعرفة و الفهم

تعريف الطلاب بالمفاهيم و الأساليب الرئيسية في علم التحليل العددي، و تطوير مهاراتهم في حل المسائل الرياضية والهندسية باستخدام الأساليب العددية المناسبة، بالإضافة الى تنمية قدرتهم على تقييم الخطأ و تحليل النتائج بشكل نقدي.

تحسين الفهم للطالب في كيفية توظيف الطرق العددية في حل المشاكل العلمية في مختلف المجالات العلمية و الهندسية.

تخريج طلاب مبتكرون في حل المشكلات، يتمتعون بقدرة على التفكير بشكل نقدي و تحليلي و استنتاجي، متكيفين مع التحديات الجديدة وذلك لصقل شخصية الطلاب و جعلهم مؤهلين ان يكونوا قادة في مؤسساتهم.

ب المهارات الخاصة بالموضوع
تعلم و تطبيق الخوارزميات و التقنيات

طرائق التعليم و التعلم

ان العاملين في هذا يمتلكون خبرة معرفية واسعة بادوات العليم و بما يتناسب مع المفردات الدراسية و من هذه الطرق:
ان المحاضرات التي يتم تقديمها الى الطلبة تكون على شكل مجموعة من الشرائح التقديمية، او يتم ذلك من خلال تقديمها بشكل مباشر من المحاضر.
بعض المحاضرات تم طباعتها مسبقا و توزيعها للطلبة وطرحها ومناقشتها مع الطلبة اثناء الدرس.

طرائق التقييم

طرق التقييم المعتمدة هي:

- الامتحان التحريري..
- كتابة التقارير الفردية
- الواجبات البيتية
- المهارات العملية سيتم تقيمها من خلال التقارير و المشاريع المقدمة

- مهارات التقييم من خلال الافراد و المجموعات

مهارات التفكير
ان تكون قادر على تطبيق نهج صارم و تحليلي عالي العدد لتحليل المشكلات و حلها باستخدام الطرق العددية.
اعداد الطلاب لمهن ناجحة في هندسة الطب الحياتي

طرائق التعليم و التعلم

من خلال تقديم الانتاجات الفكرية للطلبة في المعارض المقامة.

من خلال البحوث والدراسات والتقارير المقدمة من قبل الطلبة.

طرائق التقييم

- تقييم التقارير المقدمة من قبل الطلبة

تقييم النقاشات والحوار من قبل مدرسي المواد النظرية

تقييم جودة الإنتاجية الفكرية المقدمة من قبل الطلبة

.

د المهارات العامة و التأهيلية المنقولة الأخرى المتعلقة بقابلية التوظيف و التطور الشخصي
توجيه الطلبة الى ادخال الأساليب النظرية الى بحوث تخرجهم و مشاريعهم العملية
اكساب الطلبة المعرفة الشاملة بالطرق العددية و كيفية توظيفها في المجال التطبيقي العملي التكنولوجي لقسم هندسة الطب الحياتي

طرائق التعليم و التعلم

- رفع جزء من المادة العلمية على الموقع الالكتروني.
- الحلقات الدراسية المتعلقة بمواضيع الطرق العددية لإكساب الطالب مهارة الالقاء و فتح أبواب المناقشات الجماعية بين الطلبة لتعزيز الفهم للمادة العلمية

طرائق التقييم
كتابة تقارير جماعية مشتركة من خلال الامتحانات السريعة اليومية المفتوحة open book

11. بنية البرنامج

الاسبوع	الساعات	اسم الوحدة او الموضوع	طريقة التعليم	طريقة التقييم
1	3	Semi-exact methods	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
2	3	Numerical methods of finding roots of equations	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
3	3	Curve fitting	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
4	3	Curve fitting	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
5	3	Interpolation	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
6	3	Interpolation	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
7	3	Solving System of linear equations	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
		Solving System of		

		linear equations		
8	3	Solving System of linear equations	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سري
9	3	Integration		
10	3	Integration	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
11	3	Integration	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
12	3	Ordinary differential equations	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
13	3	Ordinary differential equations	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
14	3	Ordinary differential equations	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة
15	3	Ordinary differential equations	حضوري	أسئلة تفاعلية خلال المحاضرة وامتحانات سريعة

13. التخطيط للتطور الشخصي
متابعو وحدة الاشراف التربوي كدليل للطالب المساعدة في مجال علم النفس والتربية الذهنية منهج التعريف بالحقوق والامتيازات والواجبات الإنسانية والجامعية و القانونية
14. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية)
تحديد المعدل للدراسات الإعدادية اجراء اختبارات صحية-بدنية-مهارية المقابلات الشخصية إيجاد الدراسات المعيارية
15. أهم مصادر المعلومات عن البرنامج
- وزارة التعليم العالي والبحث العلمي - جامعة التراث. - كلية الهندسة –قسم الطب الحياتي

مخطط مهارات المنهج																									
يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم																									
			مخرجات التعلم المطلوبة من البرنامج																						
السنة / المستوى	رمز المقرر	اسم المقرر	أساسيأم اختياري	المعرفة والفهم				المهارات الخاصة بالموضوع								مهارات التفكير				المهارات العامة والمنقولة) أو(المهارات ألاخرى المتعلقة بقابلية التوظيف والتطور الشخصي			
				أ1	أ2	أ3	أ4	ب1	ب2	ب3	ب4	ب5	ج1	ج2	ج3	ج4	د1	د2	د3	د4					
	طب 133	تحليلات عددية	اساسي	√	√	√							√	√			√	√							

_____ _____

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	AlTurath university
2. University Department/Centre	Biomedical Engineering Department
3. Course title/code	Transport Phenomena
4. Programme(s) to which it contributes	B.Sc. Biomedical Engineering
5. Modes of Attendance offered	Full Time
6. Semester/Year	1 Course
7. Number of hours tuition (total)	45 Hours for each course
8. Date of production/revision of this specification	2023/2024

9. Aims of the Course

This course aims at providing the student with the necessary basic and advanced concepts for the followings:

1. Principles to engineering applications track is to educate and train scientists, physicians, and engineers in the physical, biological, and clinical bases of the cardiovascular system.
2. The objective of this track is to enable them to develop innovative applications in this field while employed in the implantable cardiovascular medical device industry. This rapidly growing sector needs people with double training in fundamental bioengineering and clinical skills.

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

Graduates will be able to:

A1. Use their information and thoughtful of the appropriate modelling, scientific and computational tools that support medical instrumentation, to solve, in depth, analytical, design or theoretical problems in this field.

A2. Apply their data and understanding of physical and clinical laws, arithmetic analysis in order to model medical device and any other similar systems.

A3. Explain the role of Biomedical Engineers in medical instrumentation group of work and the constraints within which their clinical judgment will be exercised.

B. Subject-specific skills

B1. Discuss the principles of general block diagram for medical systems.

B2. Discuss the design requirements and specifications, the preliminary stages of designs and their modified action and work, via series of videos and figures.

B3. Use the preliminary understanding to build a virtual explanation for the desired and undesired plan of design.

B4. Discuss the ability to explain new modification and the new trend of clinical supportive works.

Teaching and Learning Methods

The teaching and learning of such important Couse include the followings:

1. Lectures by the instructor himself explaining the main and important points of design.
2. Free discussion of the brain storm presented at the lecture times and discuss the new and future trends.
3. Seminars presented by the student and discussed directly by the other student and instructor.
4. Discussions of important points and induced ideas through social media.

Assessment methods

1. Seminar presented and discussed.
2. Site visited through group of students and under supervising of official medical company.
3. Home works and challenges of design thoughts.
4. Quizzes and exams.

C. Thinking Skills

C1. Apply appropriate analytical mathematics, scientific and engineering tools to the analysis of problems;
C2. Analyze and solve engineering problems;
C3. Design a medical device system, component or process to meet a need;
C4. Integrate knowledge and understanding of other scientific, mathematical, computational or engineering disciplines in order to support their engineering specialization.

Teaching and Learning Methods

- Internal lectures from manufacturers or clinicians;
- Feedback given to students during tutorials;
- Question and answer sessions during lectures or staff Office Hours;
- Guided reading of texts, journal articles etc., for individual and group projects;

Assessment methods

- Individual written report(s).
- Group discussions of group work brainstorm case studies.
- Practical skills will be assessed through troubleshoot technique.
- Experimental, research and design skills will be assessed through laboratory experiments write-ups, coursework reports, project reports and presentations;
- Presentation skills through group presentations and poster presentations.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Apply in depth problem solving and analytical thinking to a diverse range of problems;
D2. Use appropriate multi-disciplinary skills to solve medical device problems, combining the biological and engineering knowledge gained through the degree;
D3. Demonstrate numeracy and literacy in written reports, project work and examinations;
D4. Learn effectively for the purpose of continuing professional development and in a wider context throughout their career.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
First course					
1	3		Introduction to physiological fluid mechanics		
2	3		Basic concepts in fluid mechanics		
3	3		Viscosity		
4	3		Hematology and blood rheology		
5	3		Fluid flow		
6	3		Shear stress in fluids		
7	3		Solution of problems		Quiz 1
8	3		Poiseuille's law		
9	3		Mass, Bernoulli and Energy Equations		
10	3		Solution of problems		Quiz 2
11	3		Friction coefficients of pipe flow		
12	3		Head loss		
13	3		Fluid statics and measurement of pressure		
14	3		Solution of problems		
15	3		Mid exam		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**1.** Introduction to Fluid mechanics. Y. Nakayama **2.** Fluid Flow for Chemical Engineers by F. A. Holland **3.** Applied Biofluid Mechanics, by Lee Waits and Jerry Fine McGrew Hill, 2007.
Special requirements (include for example workshops, periodicals, IT software, websites)	Check the new modern websites talking about the new modifications
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	BME 445
Minimum number of students	20
Maximum number of students	30