



JUST demonstrates its commitment to meaningful education around the SDG's by offering courses that are integrated across full curriculum, mandatory courses to be taken by all students, and optional courses that are offered to all students regardless of their program of study. In this document, we provide examples of the courses that cover these three domains. For more information, please visit the official [university website](#) where course offerings are available and updated every academic semester.

Examples of courses that are integrated across full curriculum:

| Course Title | Faculty | Description | SDG(s) |
|--|-------------|--|-----------------------|
| Introduction To Natural Resources Management (NR210) | Agriculture | Basic knowledge of biology, geology and chemistry of life on Earth, such as land, chemical and biological cycles, agro-ecosystems, soil, forests, rangeland, wildlife, biodiversity, bio-production, water, energy, atmosphere, climate change, and air pollution. The topics will cover population growth, endurance and sustainability, scientific methods of research and values. | SDG 6, SDG 15 |
| Principles Of Soil Science | Agriculture | This course is designed to provide students with basic concepts of all aspects of soil science including: composition and genesis, physical, chemical, and biological properties. Topics include the relationship between crops and soils, conservation of soil and water resources, and the use of fertilizer. | SDG 2, SDG 13, SDG 15 |
| Forest Science | Agriculture | The course is intended to provide non-forestry majors with an overview of forestry: the art, science, business, and public policy. Emphasis is placed on the vocabulary, techniques and philosophies peculiar to forests and forestry. This course will provide easy and up to date introduction to the most | SDG 15 |



| | | | |
|---------------------------------------|-------------|---|---------------|
| | | important and useful concepts in forest science and its relation to human. This course will provide a support and background of different aspects related to the forest resources including biology, ecology, physiology, Silviculture, mensuration, and management of forest resources as well as the ecosystem services. | |
| Rangeland Management | Agriculture | This course covers various aspects of range management including; rangeland components and types, grazing management, stocking rate, plant physiology. We will focus on those processes that influence the function of rangeland ecosystems such as succession, disturbance (e.g., herbivory, fire, ...). Also, rangeland inventory and monitoring methods will be covered, in addition to the major rangeland rehabilitations methods. | SDG 15 |
| Soil Conservation And Land Management | Agriculture | Basic concepts in soil conservation and land management. Causes of soil erosion and methods of minimizing soil erosion. Soil fertility and its improvement. Revegetation. | SDG 2, SDG 15 |
| Soil Fertility And Fertilizers | Agriculture | Soil chemical and physical properties as related to soil fertility. Plant nutrients and their classification, functions, soil and plant contents, reactions and availability in the soil. Movement and absorption of plant nutrients. Fertilizers classification, types and application methods. Soil fertility evaluation and fertilizer recommendations. Fertigation and advanced techniques in fertilizer applications. (Prerequisite: NR 312, PP 205) | SDG 2 |
| Hydrology | Agriculture | The aim of this course is to provide a basic understanding of hydrological cycle, measurement | SDG 6, SDG 13 |



| | | | |
|---|-------------|--|---------------|
| | | <p>methods to each component (Precipitation, infiltration, runoff, and evapotranspiration), and basic knowledge about groundwater flow and storage. Upon successful completion of the course, students should be able to apply the principles of hydrology to solve hydrology problems including modeling and analysis</p> | |
| Soil Reclamation | Agriculture | <p>This class is designed to provide students with knowledge about salt affected soils, distribution, classification, reactions, and characterization. In addition, student to distinguish hazard of salinity and sodicity and process and steps of soil reclamation and management.</p> | SDG 2, SDG 15 |
| Extension And Transfer of Agricultural Technology | Agriculture | <p>Concepts, principles, models, and approaches of extension services. Individual and group Extension Teaching Methods. Adoption and diffusion of agricultural innovation. Data collection and analysis. Extension program development.</p> | SDG 6, SDG 15 |
| Sustainable Development of Rangeland | Agriculture | <p>The course is designed to introduce students to the tools of developing and improving range forage resources such as range seeding, control of undesirable range plants, pitting, furrowing, water spreading and fences. The student should know the ecological principles of range improvements, particularly competition, succession and steps in improving range forage resources to prove the desirable forage species with a competitive advantage for resources. In addition, the student should know the economic basis of range development and improvement. The establishment and development of feed sources in</p> | SDG 15 |



| | | | |
|---|-------------|--|---------------|
| | | pastoral lands, including resistance to weeds, sowing, fertilization, fire, and the use of pasture within environmental bases. Students submit reports and seminars and students participate in discussions within the classroom. (Prerequisite: PP 205) | |
| Plant Physiology | Agriculture | Water absorption and balance. Transport of solutes, photosynthesis, and respiration. Physiology of mycorrhiza and nitrogen fixing nodules. Plant growth and development. Plant hormones and defense mechanisms in plants. | SDG 2, SDG 15 |
| Phmd332: Medicinal Natural Products | Pharmacy | Provides basic information about nature as a source of drugs, different classes of natural products with an emphasis on secondary metabolites from plants and microorganisms. Also covered, are the role of natural products in drug discovery, drug discovery methods and approaches, and drug development. The use of various natural drugs in modern-day therapeutics will also be discussed. | SDG 3 |
| PHAR334: Pharmacognosy And Phytochemistry | Pharmacy | This course will provide students with basic knowledge and understanding of the chemistry of crude drugs and types of plants constituents, particularly those which are active pharmacologically and are used in medical treatment or those used in cosmetics. The scientific name, English, Arabic and local name, part/s used, occurrence, description, main constituent/s, and main uses for each drug. Isolation of the main active constituent/s, chemical structure, properties, tests of identify, and action and uses. | SDG 3, SDG 4 |



| | | | |
|--|----------|--|---------------|
| Phar371: Pharmaceutical Biotechnology | Pharmacy | This course is designed to provide students with a well-balanced framework for education in various aspects of pharmaceutical biotechnology, including production, dosage forms, and regulatory aspects regarding biopharmaceuticals. The course will cover the key concepts at the foundation of the technology relevant to protein therapeutics including molecular biology, production, and analytical procedures, formulation development, and immunogenicity. Additionally, the course will emphasize various therapeutic classes of protein biologics currently approved by regulatory bodies in the US and Europe and can be found on the market. | SDG 3, SDG 9 |
| PHAR372: Pharmaceutical Microbiology And Biotechnology Lab | Pharmacy | Students are trained on the methods of culturing, staining and identifying bacteria. Bacterial metabolism, the way bacteria are affected by antibiotics, the essentials of sterilization and quantifying microorganism growth and the methods of producing antibiotics using biotechnological techniques will also be covered. | SDG 3, SDG 9 |
| Phar433: Phytotherapy | Pharmacy | The aim of this course is to provide students with knowledge about scientific name of medicinal plants, parts used, the active constituents, uses, toxicity, contraindications, dosage forms and posology. Assessment, quality control and standardization of herbal products are also included. | SDG 3, SDG 4 |
| PHAR464: Public Health And Policy | Pharmacy | This course is concerned with introducing students to various resources and information about values, contexts, principles, and frameworks of public health and policy. It also provides an | SDG 3, SDG 10 |



| | | | |
|--|----------|---|----------------------|
| | | introduction to public health, explores the history of public health, health determinants and measurements, impact of health disparities on race, class, and gender, moral and legal foundations, public health structures, historical trauma, and cultural competence, health and human rights, advocacy and health equity and the formulation and analysis of public health policies. Students learn the importance of public health concepts and issues in daily pharmacy practice, with an emphasis on applying the fundamental issues of public health within pharmacy practice. | |
| PHAR521: Introduction To Scientific Research | Pharmacy | This course provides undergraduate students with an introduction to scientific research. Topics relevant to scientific research will be covered, including literature search, essential software's in research, research ethics, scientific authorship, data management, research misconduct, scientific writing, the publication process, and human participants and animal subjects in research. Moreover, the course will provide undergraduate students with the opportunity to practice academic writing and present scientific topics. | SDG 3 |
| PHAR527: Functional Foods And Nutraceuticals | Pharmacy | This course will outline the concept of functional foods, nutraceuticals, and dietary supplements, including their health benefits, development, and regulation. Moreover, the principles and processes necessary to evaluate their health claims and the potential long-term effects of their usage will be covered. | SDG 3, SDG 4, SDG 10 |



| | | | |
|--|-----------------|---|----------------------|
| <p>PHAR528: Complementary And Alternative Medicine</p> | <p>Pharmacy</p> | <p>This course provides a foundation of the therapies and evidence-based clinical applications for the major domains of complementary and alternative medicine practices in healthcare such as yoga, meditation, chiropractic, and acupuncture. Other complementary health approaches such as traditional Arab-Islamic medicine, traditional Chinese medicine, Ayurveda, naturopathy, and homeopathy will be covered. Students will learn how to evaluate the safety and effectiveness of the different complementary and alternative medicine practices.</p> | <p>SDG 3</p> |
| <p>PHAR529: Drug Discovery from Nature</p> | <p>Pharmacy</p> | <p>The focus of this course is to highlight the impact of natural products in the drug discovery and development process. Topics related to the different methods approaches, and strategies utilized in discovering new drug leads from nature will be covered, including biochemistry- and molecular biology-based methods. Several unique drugs of natural origin will be highlighted during the course.</p> | <p>SDG 3, SDG 15</p> |
| <p>Phar554: Gene Therapy</p> | <p>Pharmacy</p> | <p>This course is designed to provide students with a comprehensive understanding of the rationale and the applications of gene therapies, with special emphasis on current technologies essential for their clinical use, such as molecular cloning techniques, production and formulation, delivery into target cells and tissues, and the challenges related to the use of biologics as drugs. The 30 Bachelor of Pharmacy Program students will gain broad comprehension of designing treatment strategies for various diseases using gene drugs, the</p> | <p>SDG 3</p> |



| | | | |
|--|--------------------|---|-----------------------|
| | | <p>rationale of their use, and their mechanism of action.</p> <p>Additionally, the course will provide a broad comprehension of regulatory and ethical issues related to strategies, techniques, and the use of gene drugs as modern biomedical practice tools.</p> | |
| PHAR564: Ethics and Communication Skills | Pharmacy | <p>This course discusses moral-ethical concepts and key concepts related to patients' rights, confidentiality, and care in pharmacy practice. Further, verbal, and non-verbal communication skills to prepare students for the pharmacy profession are the major focus of this course. Overall, this course focuses on principles, practices, and procedures necessary to establish a climate that fosters healthcare provider-patient interactions and enhances students' ability to promote positive health outcomes and patient wellbeing.</p> | SDG 3, SDG 4 |
| VM 101 Animal Husbandry and Welfare | Veternity Medicine | <p>The aim of this course is to introduce the students to the broad fields of veterinary medicine and to develop an appreciation of the importance of the livestock industry in Jordan agriculture and economy. The student should become acquainted with the basic principles of different methods of handling and controlling domestic animals, such as cows, sheep, goats, horses, in addition to small animals. Besides, the student will be introduced to certain distribution and behavioral aspects of domestic animals.</p> | SDG 2, SDG 12, SDG 15 |
| VM 300 Clinical Application and Integration Of Basic Veterinary Sciences I | Veternity Medicine | <p>This course provides problem solving and integration of clinical cases and basic sciences in the veterinary medicine. Students learn through interaction with</p> | SDG 2, SDG 4 |



| | | | |
|--|---------------------------|--|----------------------------|
| | | <p>their peers in small group settings. Integration and reinforcement of basic veterinary knowledge in microbiology, immunology, anatomy and physiology in relation with technical and clinical skills related to the listed basic courses. Teaching will be through critical thinking exercises, professional skills application activities.</p> | |
| <p>VM 400 Clinical Application and Integration Of Basic Veterinary Sciences II</p> | <p>Veternity Medicine</p> | <p>This course provides student-centered learning sessions with faculty facilitator for self-discovery of new information; based on specific clinical case or problem with integration of basic science (Animal Nutrition, Hematopathology and Cytology, General Veterinary Internal Medicine and Case History and Physical Examination). This course includes one week of clinical experience through participation in specific clinical rotations in Veterinary Teaching Hospital.</p> | <p>SDG 2, SDG 4</p> |
| <p>VM 362 Meat Hygiene and Inspection</p> | <p>Veternity Medicine</p> | <p>This course will provide participants with knowledge and comprehension on: slaughtering, stunning an carcass handling and judgement at the abattoir, biochemistry of postmortem muscle characteristics of beef, sheep, goat, horse, camel and ostrich meat, meat spoilage Page 6 and preservation, examination of meat adulteration and species determination, microbial and chemical meat hazards, meat fermentation and processing, new technologies to enhance the safety of meat and meat products, meat packaging, HACCP. In addition, fish and seafood safety is covered.</p> | <p>SDG 2, SDG 3, SDG 4</p> |
| <p>VM 376 Veterinary Infectious and Zoonotic Diseases</p> | <p>Veternity Medicine</p> | <p>This course covers the most important infectious diseases that affect bovine, equine, ovine,</p> | <p>SDG 2, SDG 4</p> |



| | | | |
|--|---------------------------|---|-----------------------------|
| | | <p>caprine, and porcine. In addition, small animals (dogs and cats) diseases will be covered. Students will learn how to identify infected animals and manage cases with infectious diseases. This course also covers the most important zoonotic diseases that represent threat to humans (animal health providers, farmers, animal owners and food animal consumers). Issues related to biosecurity and self-protection will be discussed.</p> | |
| <p>VM 460 Abattoir and Food Animal Products Inspection</p> | <p>Veternity Medicine</p> | <p>This course will teach the students practical sessions in cattle, sheep, goat and poultry ante-mortem inspection. The course also teaches practically the veterinary-sanitary examination of carcasses and internal organs that includes healthy carcasses, local and general pathological changes, and infected carcasses with bacterial, viral and parasitic diseases. In addition, the course teaches several testing methods of milk and dairy products, fish, and eggs.</p> | <p>SDG 2, SDG 3</p> |
| <p>VM 473 Production Medicine and Electronic Farming</p> | <p>Veternity Medicine</p> | <p>This course will focus on production animal agriculture and the veterinarian's present and future role in these enterprises. Cattle production is emphasized. Cattle production, economics, disease prevention and health programs will be discussed. In addition, in this course students will learn how to incorporate technologies (such as computer programs) in animal production and record keeping.</p> | <p>SDG 3, SDG 9, SDG 12</p> |
| <p>VM 502 Veterinary Practice Management, Economics and Professional Communication</p> | <p>Veternity Medicine</p> | <p>This course provides students with the basic principles of professional communications skills, basic personal and business finances skills, and legal aspects of veterinary practice.</p> | <p>SDG 4, SDG 9</p> |



| | | | |
|--|-----------------------------------|--|--------------|
| CIS203 Communication and Professional Ethics | Computer & Information Technology | This course aims to introduce students to the field of communication through the study of life-enhancing communication skills including listening attentively, managing conflict, interviewing successfully, interpreting media, sustaining healthy relationships, working effectively in groups and communicating amid diversity. And introduces students to the social context of the IT industry and its practices. These include professional and ethical responsibilities in the analysis and design of systems. Also, in ensuring the safety of work environments, risks and liabilities of computer-based systems, intellectual property, computer crimes, and economic issues in computing | SDG 4, SDG 8 |
| Se440 Project Management | Computer & Information Technology | This course composes four perspectives of Project Management and Software Project Management. These are the Project Management Perspective that was introduced by the Institute of Project Management (PMI), the Software Project Management Perspective that was introduced by the IEEE Computer Society (IEEE-CS SWEBOK), the SCRUM Software Project Management Perspective that was introduced during the past 15 years or so by different professional AGILE-SCRUM bodies (AGILE-SCRUM), and the Software Project Management View by Dr. Radaideh, the author of the upcoming textbook on Software Project Management. | SDG 8 |
| Cs342 Computer Networks | Computer & Information Technology | This course covers networking architecture, structure, and functions. The course introduces the principles and structure of IP | SDG 8 |



| | | | |
|-------------------------------------|-----------------------------------|--|----------------------|
| | | addressing and the fundamentals of Ethernet concepts, media, and operations to provide a foundation for networking. | |
| CS484 Computer and Network Security | Computer & Information Technology | This course is intended to give the students the principles and concepts of computer security. The students should be able to understand what it means for a system to be secure. Furthermore, the students will get to know about computing systems vulnerabilities, threats, and security controls. The course includes the following topics: Introduction to cryptography, confidentiality, authentication, digital signatures, program security, operating systems security, and network security. | SDG 9, SDG 11 |
| CIS441 Business Data Communication | Computer & Information Technology | The objective of this course is to present students with a firm understanding of fundamentals, as well as the state-of-the-art of telecommunications in a business oriented manner. Telecommunication technology will be reviewed and current practices discussed. Topics include distributed data processing, communication techniques, network design, LANs and PC networking, and if time allows introductory topics in management and security will be presented. This course is focused on the TCP/IP architecture, but the OSI model is introduced and discussed. Topics like OSI reference model, architecture of circuits, message and packet switching networks, network topology, routing, flow control, capacity assignments, protocols, coding and multiplexing, will be presented with case studies related to business scenarios to give students the hands-on experience as well. | SDG 4, SDG 9, SDG 11 |



| | | | |
|--|-----------------------------------|--|--------------|
| Nes311 Data Communication | Computer & Information Technology | Analog and digital transmission, modulation and demodulation, transmission media, data encoding, synchronous and asynchronous transmission, digital carriers, error control, multiplexing, circuit and packet switching, open system standards. | SDG 4 |
| Graduation Projects: Such As (Smart Home, Smart Parking System, Smart Renting, E-Museum) | Computer & Information Technology | Provides the senior student with the opportunity to undertake a substantial graduation project under the supervision of a faculty member. At least two weeks prior to registration, an interested student must submit to the department chair a written request for permission to select a project. The request is to include a preliminary description of the proposed project and the name of the supervising faculty member. During this course, the student is expected to specify and design the proposed system or software. | SDG 8, SDG 9 |
| Nes540 Wireless Networking Protocols | Computer & Information Technology | The challenges and latest solutions in wireless and mobile networks: routing, auto-configuration, clustering, topology management, quality of service (QoS), reliable transport, energy conservation, mobility management, MAC, and service discovery. | SDG 4 |
| NES552 Reverse Engineering and Malware Analysis | Computer & Information Technology | This course introduces the essential concepts, tools, and techniques for understanding, analyzing, and investigating binary programs, in general, and malicious programs, in specific. It begins with easy methods that can be used to get information from relatively unsophisticated programs, and proceeds with increasingly complicated techniques that can be used to tackle even the most sophisticated malicious programs. Particular topics include static analysis techniques, dynamic analysis, | SDG 4, SDG 9 |



| | | | |
|---|-----------------------------------|--|---------------|
| | | assembly language and disassembly, recognizing C code constructs in assembly, debugging, and obfuscation techniques. | |
| Cs 442 Wireless Networks | Computer & Information Technology | Motivation, wireless network architectures and wireless network devices, wireless standards, mobile computing issues, wireless local area networks and satellite-based networks, sensor networks, mobile Internet protocol, extending the client-server model for mobility, mobile data access, language support for mobile and wireless computing, and technologies such as infrared devices and Bluetooth. | SDG 4 |
| Growth And Development For Paramedic Students | Applied Medical Sciences | Different developmental stages. The psychology of each developmental stage from the embryo stage till the late adult. | SDG 3 |
| Psychology And Sociology For Paramedic Students | Applied Medical Sciences | Psychology, paradigms, issues, debates, controversies, and physiological, cognitive developmental psychologies, relevance of sociology to health care, central components of socialization, cultural variations, culture values introduction to the components of stratification, social processes and defining disease - deviance, sick role and stigma. | SDG 3 |
| Introduction To Civil Defense | Applied Medical Sciences | The Jordanian Civil Defense; its construction, roles, responsibilities, and services. The importance of an integrated emergency response system, related professions such as fire, police, air ambulance and various related community services, procedures of evacuation and rescuing, disaster management, and methods of designing shelters. | SDG 3, SDG 16 |



| | | | |
|--|--------------------------|--|--------------|
| Ethics In Applied Medical Careers | Applied Medical Sciences | Ethical issues in applied medical careers have been prominent in recent years. The philosophical theories of ethics, patient-health provider relationship, patient's rights, code of ethics, and health communication. | SDG 3, SDG 4 |
| Paramedic Management Of Infectious, Toxicological, And Environmental Emergencies | Applied Medical Sciences | Epidemiology, pathophysiology, assessment and clinical management of patients with toxicological, infectious and environmental illness, overdose, poisoning, and acute infectious disease. | SDG 3, SDG 9 |
| EMS And Disaster Management | Applied Medical Sciences | The theoretical principles of EMS systems. Ground transportations; indications and restrictions, system status management, air medical (flight) transportation (types; fixed, rotor wing, indications, contraindications, considerations, flight physiology), inter-facility transportation, critical care transportation, and pediatric transportation considerations. Disaster management and the theoretical principles necessary to manage crisis and multi-casualty incidents under field conditions. System response to disaster, acute and chronic medical needs post disasters, triage principles, medical evacuation procedures, disaster preparation, and disaster mitigation. | SDG 3, SDG 9 |
| Low Vision And Visual Rehabilitation | Applied Medical Sciences | The needs and visual functioning of low vision patients. They will also be able to prescribe different types of visual optical aids and visual non-optical aids to restore the patients' ability to do their life activities easily, and to provide the patient with instructions and trainings of how to use these Aids in addition with different rehabilitation methods. | SDG 3 |



| | | | |
|---|--------------------------|---|---------------|
| Human Development And Psychology | Applied Medical Sciences | This course covers all developmental and growth stages from early childhood to late older adulthood, which includes: physical, motor, cognitive, communication and psychosocial development. Course also covers the development of play and related theories. It's also discusses practical application to aid in the development in all the above areas based on various theories and models. | SDG 3 |
| Independent Living | Applied Medical Sciences | This course covers participation problems and performance deficits that impact the patient's level of independence in all areas of occupation, both individual and environment related. The course stresses out the occupational therapy role and clinical skills to promote participation and independence in all areas of occupation, including activities of daily living, instrumental activities of daily living, work and leisure that are individualized and meaningful to each patient. | SDG 3, SDG 11 |
| Independent Living Practical | Applied Medical Sciences | This course covers practical skills that increase the independent participation in all areas of occupation that are meaningful to each patient. It details therapeutic rehabilitation and assistive tools and devices, assistive technology strategies that promote a high level of independence in mobility, transfers, dressing, feeding and other areas of occupation. | SDG 3, SDG 11 |
| Psychosocial Counseling And Group Therapy | Applied Medical Sciences | This course enhances the student awareness about themselves as well as others. It will also provide the students psychosocial skills which may be useful in treatment situations. The component also aims to introduce the student to the basic techniques of communication and self-helping | SDG 3 |



| | | | |
|------------------------------------|--------------------------|---|----------------------|
| | | skills for individuals and groups. The course also details the dynamics of group process, group dynamics theories, leadership styles and application of occupation based group therapy. | |
| Community Rehabilitation | Applied Medical Sciences | This course introduces the community based rehabilitation (CBR) as a strategy for community development. It highlights disability and participation and integration in the community as human rights issue not only to individual patients but also to communities. Also, students will understand the development, principles, and structure of CBR both internationally and in Jordan. Course covers the different models of CBR, issues of public accessibility and the role of occupational therapy in CBR. | SDG 3, SDG 11 |
| Community Rehabilitation Practical | Applied Medical Sciences | This course allows students to visit and observe a number of community-based rehabilitation centers in the local community. Course will provide students with practical skills on the development of community-based occupational programs promoting participation in areas of occupation and integration with the community for individuals and communities with or without deficits. Students are asked to establish a community-based program proposal focusing on one problem within their community | SDG 3, SDG 11 |
| Introduction To Special Education | Applied Medical Sciences | This course includes basic information of special education for special exceptional children (the characteristics of these groups of children and their education) and more emphasizing on the techniques and classroom practices that make up the discipline of special education, | SDG 3, SDG 4, SDG 10 |



| | | | |
|----------------------|--------------------------|--|---------------|
| | | also this course covered the special psychological, medical, and sociological aspects of the various handicapping condition that is via studying the following topics (Mental retardation, Learning disabilities, Emotional disturbance, Speech and language disorders, Hearing impairment, Visual impairment, Physical disabilities, Giftedness and Normalization and attitudes toward exceptional children). | |
| Aural Rehabilitation | Applied Medical Sciences | The Course aims at giving the student the opportunity to understand Auditory Verbal Therapy, Hearing Impairment, Hearing Impaired children (characteristics, assessment & therapy approaches). It also includes one hour as clinical practicum. | SDG 3, SDG 10 |
| Oral Radiology 1 | Dentistry | The aim of this course is to teach the students about extral oral and advanced imaging, film mounting, normal anatomy and different pathologies encountered on radiographs during routine dental practice. To learn basics of film viewing and interpretation and to solve problems encountered during radiographic interpretation. | SDG 3 |
| Dental Material | Dentistry | This course is a solely theoretical course with no practical component. It is one of two dental materials courses that run over the course of the first and second semesters. The theory part of the course will be presented to students in the form of weekly 2 hour lectures that provide students of basic and advanced knowledge of dental materials composition, properties, manipulation and clinical handling. Such knowledge will be applied firstly in preclinical laboratories, and then as part of | SDG 3, SDG 9 |



| | | | |
|----------------------------------|-----------|--|---------------|
| | | the dental services within the dental clinics. This knowledge will also be instrumental in educating patients in the home maintenance of restorations and prostheses. | |
| Dental Ethics and Jurisprudence | Dentistry | The profession of dentistry and the oral health of patients depend on dentists who comply with the laws and regulations that govern the profession of dentistry in Jordan, and who adhere to high ethical and normative standard of conduct. Students examine key principles and values used in dentistry to identify and justify their decisions when faced with ethical dilemmas. Special attention to research ethics encourages the students to adopt responsible conduct of research practices. Through analysing and solving ethical dilemmas, and discussion of examples from the practice of dentistry, students focus on the ethical and legal implications of certain acts and behaviours that can occur in the dental setting. The course is given online, all materials will be available at JUST's e-Learning platform. | SDG 3 |
| Basic Infection Control Measures | Dentistry | The aim of this course is to teach dental students the principles of cross infection control and establish the culture of safety. The course aims also at providing students with the basics of safe dental practice that integrates the principles of evidence-based infections control. It will be given as a synchronous online course. | SDG 3, SDG 16 |
| Preventive Dentistry | Dentistry | This course is designed to bring students to the current knowledge in the prevention of dental diseases. It will examine the public health methods for the prevention and control of dental caries, periodontal disease, dental | SDG 3, SDG 11 |



| | | | |
|------------------|-----------|---|-------|
| | | <p>trauma, malocclusion, and oral mucosal lesions. This course will also provide instruction on the prevention of social inequality, preventing a disability, oral health promotion, and restricting the use of tobacco.</p> | |
| Research Project | Dentistry | <p>Dent 513 course, is a course given by the department of oral medicine and oral surgery for fifth year dental students . The course prepares students to acquire the basic knowledge and the primary skills in relation to conducting research in biomedical/dental fields and writing up a scientific publishable paper. In the practical part of the course, students are divided into groups. The supervisor guides the students into selecting a topic of interest and guides them to a research question. Students will develop a certain hypothesis and in a timely manner provided with data needed. In each weekly meeting, the faculty member will give a brief information (discussion or presentation format) about the requirements of each section of the paper to be written. These meeting are conducted in person.</p> <p>Furthermore, students will be provided with some feedback regarding their weekly task. By the end of the semester, students are required to submit a final coherent manuscript. The manuscript should include all the elements of a research paper (abstract, introduction, literature review, materials and methods, results, discussion, conclusion and references). The students will be evaluated in groups for every step they perform in the conduction of the project and for the final manuscript that they</p> | SDG 3 |



| | | | |
|-------------------------|-----------|--|----------------------|
| | | submit. In addition, the students will be evaluated individually through an online examination on the elements of research paper and abstract and on the basic principles and design of research. Moreover, there will be an individual evaluation on the contribution of each student to the overall work. | |
| Community Dentistry | Dentistry | This is a course with theoretical and practical components. Students will receive the theory part in the form of a weekly seminar over the 2nd semester along with supplementary handouts and materials. The practical component involves an online project during the second semester of year 5 to encourage and raise the awareness towards oral health | SDG 3, SDG 11 |
| Growth & Development | Nursing | The focus of this course is on the process of human growth and development across the life span. It enhances the student's abilities to assess and understand the normal process of growth and development through the life cycle, as well as enable them to understand the normal problems and needs during different stages of human life. The course also focuses on enhancing students' critical thinking skills to provide a plan of care for clients and their families according to their needs and priorities. | SDG 3 |
| Nursing Ethics & Issues | Nursing | The course highlights ethical issues of importance to nursing students. It includes many case scenarios that expose nursing students to different dimensions in their clinical practice. The course starts with philosophical & theoretical assumptions behind ethical decision-making & then applies this knowledge to particular situations about nursing | SDG 3, SDG 4, SDG 16 |



| | | | |
|----------------------------------|---------|--|-----------------------------|
| | | care, professional issues, practice issues, technology, scholarship, & social issues. | |
| Health Informatics | Nursing | The purpose of this course, whereby part of it will be online, is to explain the origins, key components and current state of Health Informatics, which will take a national and international perspective. This course will introduce key issues and applications of Health Informatics at theoretical and applied levels. Students are left with knowledge and skills to examine existing practices and recommend change based on evidence and structured approaches. Emphasis will be placed on current ethical, cultural, and financial issues accompanying the increasing use of the health related internet applications by healthcare providers and consumers. Computer skills and Internet use will also be provided with emphasis on the use of EHR in healthcare system. | SDG 3, SDG 4, SDG 9, SDG 10 |
| Communication & Health Education | Nursing | The Purpose of this course is to provide basic knowledge in assessment, planning, implementing and evaluating education for patients in all stages of life. The course also focuses on the role of the nurse in the process of communication and education to patients. Through this course students are directed to the application of various communication skills by providing health education to patients in all circumstances. It also focuses on the use of theories and skills necessary to communicate with all age groups and in different primary and secondary health institutions. | SDG 3, SDG 4 |



| | | | |
|--|----------|---|---------------|
| Human Nutrition | Nursing | This course is designed to provide undergraduate Health Care Providers students with the basic nutrition knowledge that supports the role of the practicing nurse; whether working in a community health center or in a clinical setup. It displays principles of nutrition throughout the life cycle, focusing on the importance of nutrition as an essential component of an appropriate and effective health care measure for the maintenance of health. Therefore diet therapy in disease states will be integrated throughout the course | SDG 2, SDG 3 |
| Introduction To Research and Evidence Based Medicine epidemiology And Health Economics | Medicine | This undergraduate course delineates the essential concepts of research and Evidence-Based Medicine (EBM), information mastery, and critical appraisal of the medical literature. It is intended for first-year medical students as an introduction to research concepts and builds up skills to be familiar with research design, analysis, interpretations of results, and applications in medical practice and science in both the medical and public health fields. | SDG 3, SDG 4 |
| Medical Ethics And Forensic Medicine | Medicine | This course provides the medical students with the fundamental comprehension of medical ethics. Hence, ways of developing and conceptualizing a framework for moral judgment and decision-making, which can serve as a basis for health care practice, will be discussed. Additionally, understanding the basic ethical issues in health care practice field, the best ethical reasoning, and medical practitioners' ability to make right decisions will be emphasized, particularly because ethical problems in medical | SDG 3, SDG 16 |



| | | | |
|--|----------|---|-------|
| | | practice and research are unavoidable. | |
| Family Medicine and Primary Healthcare | Medicine | <p>This is a clinical course for the fifth year medical students at JUST University, 4.5 credit hours, 4 weeks duration, teaching is a mixture of both didactic-lectures and seminars- and bed site at JUST health center and MOH Primary care centers.</p> <p>Family medicine is the medical specialty for providing primary health care to the community. It is a specialty of continuing, comprehensive and holistic care that integrates the biological, clinical, and behavioral aspects of medical care.</p> <p>The scope of family medicine encompasses all ages, genders, disease entity and organ systems. Family physicians provide medical care in the context of a personal doctor-patient relationship, but with an appreciation for the individuals, families and community influences.</p> <p>This 4 -week course clerkship will provide an outstanding learning experience for 5th year medical students who will spend training period at a university health center and other affiliated primary health care centers in Irbid area. Students during this rotation are exposed to different health problems commonly seen at primary healthcare settings. They will be taught how to take the proper, timely managed medical history, examination, and communication skills. They will actively participate in management plan as well. Didactic teaching is composed of lectures and seminars, which are selected based on the common</p> | SDG 3 |



| | | | |
|---------------------------------------|----------|--|---------------------|
| | | diseases with an emphasis on disease prevention and health promotion. | |
| Research And Community Medicine | Medicine | <p>The main focus of this course is on providing students with an understanding of methodological health research issues as well as analytical and practical skills of designing and conducting epidemiologic studies. It includes more rigorous discussion of key epidemiologic concepts and methods such as study designs and measures of association and impact. Throughout this program, methodological and design issues are integrated with statistical techniques and applied by extensive use of the SPSS package. With real-life examples throughout, the course avoids complex statistical formulations.</p> <p>The course will help students acquire knowledge and skills necessary to prepare for and implement various aspects of the public health research process. In addition, the course will encourage critical thinking and writing skills that demonstrate the student's abilities to understand and evaluate related researches.</p> | SDG 3, SDG 4, SDG 9 |
| Research And Community Medicine (Lab) | Medicine | <p>The main focus of this course is on providing students with an understanding of methodological health research issues as well as analytical and practical skills of designing and conducting epidemiologic studies. It includes more rigorous discussion of key epidemiologic concepts and methods such as study designs and measures of association and impact. Throughout this program, methodological and design issues are integrated with statistical techniques and applied by extensive use of the SPSS</p> | SDG 3, SDG 4, SDG 9 |



| | | | |
|--------------------------------------|----------|---|--------------|
| | | <p>package. With real-life examples throughout, the course avoids complex statistical formulations.</p> <p>The course will help students acquire knowledge and skills necessary to prepare for and implement various aspects of the public health research process. In addition, the course will encourage critical thinking and writing skills that demonstrate the student's abilities to understand and evaluate related researches.</p> | |
| Biostatistics And Health Informatics | Medicine | <p>Biological data, descriptive statistics, probability, axioms and rules of probability, conditional probability, Bayes theorem and independence, discrete and continuous random variables, Binomial and normal distributions, Sampling distribution point and interval estimation, hypothesis testing, types of error, tests for one and two means, test for one proportion, categorical data analysis, incidence and prevalence, contingency tables; diagnostic tests; false positive, false negative; odds ratio and relative risk, specificity and sensitivity, chi-square test of independence, life tables, correlation and simple regression.</p> | SDG 3, SDG 4 |
| Medical Communications Skills | Medicine | <p>This course provides the students with basic concepts of communication skills such as writing skills, communications skills, and presentation skills. It will help the students to learn how to write professional emails, CV, statement of purpose, and prescriptions that are essential to their future career.</p> | SDG 4 |
| Clinical Psychology | Medicine | <p>This course of behavioral science has 2 purposes: It shows you the psychological aspects of medical practice and presents an overview</p> | SDG 3 |



| | | | |
|--|-----------------------|---|-----------------------|
| | | <p>of clinical psychiatry. 24 Curriculum for Doctor of Medicine (MD) Clinical psychiatry is supported by sociology and human psychology; it includes behavioral sciences, behavioral biology which include; biochemical, physiological and pharmacological behavioral science. It also contains individual behavior (emotions, life cycle, motives, mental disorders, personal relationships) Most of the lecturers are physicians, so its expected that the material presented will have clinical implications ٥</p> | |
| Ce 452 Environmental Engineering I | Engineering: Civil | <p>Introduction to environmental and ecological systems, Environmental chemistry and microbiology, Water quality parameters and standards, Population estimation, Material balance and reactor Engineering, Water treatment units and design (Physiochemical and advanced technology), Air pollution, Noise pollution, Introduction to Environmental Impact Assessment.</p> | SDG 6, SDG 11, SDG 13 |
| Ce 503: Geographic Information Systems (Gis) | Engineering: Civil | <p>Fundamentals of GIS. GIS data acquisition, entry, structure and processing, Database management and analysis, Maps, projections and transformations, Project management and planning, Remote Sensing, Emphasis on product generation.</p> | SDG 9, SDG 11 |
| Ce 505: Geographic Information Systems Lab (GIS) | Engineering: Civil | <p>Applications on GIS software relevant to the theory presented in CE503. Cor (compulsory): CE 503.</p> | SDG 9, SDG 11 |
| Ce 544: Transportation Planning | Engineering: Civil | <p>Introduction to transportation planning, fundamentals of traffic planning, trip generation, trip distribution, mode choice, and traffic assignment techniques. Intelligent transportation systems,</p> | SDG 11, SDG 9, SDG 13 |



| | | | |
|--------------------------------|--------------------|---|-----------------------|
| | | transportation demand forecasts, traffic impact studies, transportation system evaluation, Transportation planning issues (energy, environment, & social factors), highway planning, mass transit planning, Traffic congestion and new technologies in transportation. | |
| Ce 552: Water Ressources | Engineering: Civil | Water laws, Reservoirs, dams, and reservoir basins, Hydro-power generation, Flood estimation, routing and control, Engineering economy in water resources planning. Introduction to system engineering in water resources, Topics in arid and semi-arid region water resources, Water conservation techniques, Linear programming and its applications in water resources. | SDG 6, SDG 13 |
| Ce 553: Groundwater Management | Engineering: Civil | Definition and occurrence, groundwater and the hydrologic cycle, Darcy's law, groundwater flow equations, analytic solutions, type curves, superposition, aquifer evaluation: pump test, slug test, salt water intrusion, delayed yield, basics of numerical modeling, groundwater contamination, transport processes, one dimensional transport equation and available solutions, and groundwater remediation. | SDG 6, SDG 11 |
| Ce 554: Engineering Hydrology | Engineering: Civil | Introduction to Hydrology, Watershed Characteristics, Precipitation, Infiltration, Evapotranspiration, Hydrograph Analysis and Synthesis, Peak Discharge Estimation, Hydrologic Design Methods, Reservoir Routing, Channel Routing, Statistical Methods in Hydrology. | SDG 6, SDG 13 |
| Ce 566: Soil Stabilization | Engineering: Civil | General Review of basic soil mechanics, Physical and chemical properties of soil, Types of major problematic soils and properties, Expansive soils, collapsible soils | SDG 6, SDG 11, SDG 13 |



| | | | |
|------------------------------------|-------------------------|--|-------------------------------|
| | | and dispersive soils, General constriction problems in soils with emphasis on bearing capacity, 38 Civil Engineering Program Settlement and expansion, Methods of soil stabilization: compaction, Preloading densification using vibratory equipment, Soils cement soil lime, Soil bitumen, chemical and thermal stabilization, Grouting and soil injection, Use geo-textile to improve soil in reinforced earth walls, embankment & steep slopes. | |
| Energy And Environment | Engineering: Mechanical | Theory and practice of environment and sustainable development at urban, national and international levels. Environmental degradation by deforestation, loss of biodiversity, air pollution, global warming, soil erosion, decreasing quality and quantity of water, poor sanitation services and poor urban conditions; CO2 emissions and global warming, interactions among society. Development and environment: implications for sustainable development. Technical, economic, ethical and philosophical aspects of sustainable development. | SDG 11, SDG 13, SDG 15, SDG 6 |
| Design Of Renewable Energy Systems | Engineering: Mechanical | Scientific and technological fundamentals of renewable energy sources: passive and active solar systems (high, medium and low temperature thermal solar collectors; photovoltaic systems); wind energy; biomass and bio-energy; waste management; hydrogen production, hydroelectric power; geothermal. Practical aspects of renewable energy systems; design development, exploitation and monitoring. Introduction to social, legal and market | SDG 7, SDG 13, SDG 12 |



| | | | |
|----------------------------------|--|--|----------------------------------|
| | | challenges of RE systems. Prospective of RE technologies, factors affecting the deployment of RE systems. | |
| Energy And Environment | Engineering: Mechanical | Theory and practice of environment and sustainable development at urban, national and international levels. Environmental degradation by deforestation, loss of biodiversity, air pollution, global warming, soil erosion, decreasing quality and quantity of water, poor sanitation services and poor urban conditions; CO2 emissions and global warming, interactions among society. Development and environment: implications for sustainable development. Technical, economic, ethical and philosophical aspects of sustainable development. | SDG 11, SDG 13, SDG 15, SDG 6 |
| Renewable Energy | Engineering: Mechanical | Renewable energy sources including, solar, wind, biomass , hydroelectric and geothermal. Electric power solar, wind and future energy alternatives. | SDG 7, SDG 13 |
| Sustainable Energy Conversion | Engineering: Mechanical Engineering: Mechanical | Forms of energy. Fossil fuels including, petroleum, coal, oil shale and tar sand, natural gas and hydrogen power. Principles of nuclear power. Renewable energy sources including, solar, wind, biomass, hydroelectric and geothermal. Conversion of thermal energy into electrical power including thermoelectric converters and fuel cells, thermoelectric systems, electric generators and alternators. Environment and sustainable development at urban, national and international levels. Development and environment: implications for sustainable development. Technical, economic, ethical and | SDG 7, SDG 13, SDG 12 |



| | | | |
|---|--|---|---------------|
| | | philosophical aspects of sustainable development. | |
| Water Desalination | Engineering: Mechanical | Water analysis and treatment. Analysis and design of different types of desalination processes. Distillation processes: multi-stage, multi-effect distillation, and vapor compression. Membrane processes: electro-dialysis and reverse osmosis. Desalination by freezing. | SDG 6, SDG 13 |
| Wind Energy | Engineering: Mechanical | Basic characteristics of wind, site characterization , Statistical methods of wind analysis, wind resources assessment, fundamental principles of wind energy utilization, aerodynamics, mechanical and electrical design aspects. Wind machine technologies and wind turbines performance analysis. Wind power integration into the power systems, environmental impact of wind power utilization. | SDG 7, SDG 13 |
| Ie441: Statistical Quality Control | Engineering: Industrial | The course covers the concepts and methods of quality, engineering specifications and tolerances, quality charts, statistical process control (SPC) using control charts of variables and attribute data, acceptance sampling, process capability indices, and cost and management aspects of quality. | SDG 9 |
| IE452 Production Planning And Inventory Control | Engineering: Industrial | The course covers the concept of value chain with a focus on supply chain analyses, capacity planning, inventory models, and demand forecasting. Additional topics include Material Requirement Planning (MRP) and job shop scheduling. | SDG 9 |
| Ne206 Introduction To Nuclear Engineering | Engineering: Nuclear Engineering: Nuclear | Three credit hours (3 h lecture) Fundamentals of atomic-scale units ; mass, binding energy, and energy levels; types of nuclear reactors and nuclear power; components of nuclear power station; fission chain reaction | SDG 7, SDG 13 |



| | | | |
|--|-------------------------|---|----------------------|
| | | kinetics; interaction of neutron with matter; interactions of gamma radiation with matter; interaction of charged particles with matter; nuclear data preparation and cross section data library. | |
| Ne451 Nuclear Power Plant Systems & Operations (1) | Engineering: Nuclear | Description of light water power plants systems, NSSS system, secondary systems, reactor safety systems, plant layout, steam cycles, electrical, mechanical, and nuclear system components, practical aspects of NPP system operation. | SDG 7, SDG 13 |
| Ne452 Nuclear Instrumentation & Control | Engineering: Nuclear | Three credit hours (3 h lecture) encompasses the principles of operation of various types of instruments in the nuclear industry to measure temperature, pressure, level, flow, position, and radiation. The student will gain a broad range of working knowledge of temperature, pressure, level, and flow sensors, position indicators, radiation detectors, and control systems. Component theory and design, system hardware, and integrated operation as applied to commercial nuclear systems will be explored. | SDG 7, SDG 9, SDG 13 |
| Fuel Cycle and Waste Management | Engineering: Nuclear | Front end and back end nuclear fuel cycle including mining, milling, conversion and enrichment, fuel design and fabrication and waste fuel management and nuclear reactor decommissioning. | SDG 12, SDG 13 |
| Building Construction I | Architecture | This course is an introductory of construction of buildings. It deals with basic construction materials used as: brick, cement, gypsum, steel, timber, etc. it describes their main types, characteristics, their use and function. It will also cover the modern construction materials such as: pre stressed concrete, float glass, extruded | SDG 9, SDG 11 |



| | | | |
|--|--------------|--|----------------|
| | | aluminum, advanced gypsum products, plastics, the miraculous materials of construction developed recently. This course will consider the preparation of construction site, soil investigation, building codes used in construction practices. | |
| Landscape Architecture | Architecture | This course is comprised of both lecture classes and design problems. The lecture material should cover: an introduction to landscape architecture as a discipline; theoretical views of landscape architecture; review of selected historical markers; review of renowned landscape architects; survey of landscaping plants focusing on plants of the region; plant as a design material; and principles of space design. Within the design studio, students should design 2-3 projects ranging in size and functions in order to acquire fundamental training and experience in landscape and plant design. | SDG 11, SDG 15 |
| Local Architecture And Heritage Conservation | Architecture | Review the definition of Vernacular architecture and heritage and the history of its conservation and its evolution. Analysis of the planning process for the protection of historic areas and sites within the urban form of cities as part of its management. The importance of including historic areas and sites within the master plan of the city as sustainable development approach. Interpretation of the correlation of historic events and the value of historic sites. The integration between historic sites and their local communities. Interpretation and presentation of historic areas for the public as a | SDG 11, SDG 15 |



| | | | |
|---|--------------|---|----------------|
| | | socio-economic development issue. | |
| Environmental Control Systems I- Temperature And Humidity | Architecture | The first part of the course concentrates on the global climate factors, Human comfort measurements, and climatic elements affecting it, thermal balance of human body, thermal balance of buildings: heat gain, and heat loss in building. Formation of condensation, and thermal profile for architectural elements. Simple calculation of heat and vapor diffusion in buildings, applications of passive solar energy and shading device systems, wind movement in buildings, evaporative cooling, time lag and decrement factor, traditional solutions of thermal control in buildings in different climates. The second part of this course deals with mechanical systems from the standpoint of architecture. It presents different ways for integrating cooling and heating systems with other architectural elements. | SDG 11, SDG 13 |
| Human Behavior In Built Environments | Architecture | Environment as a context for human behavior .Basic concepts of mental, affective, spatial and social behavior. The concept of behavioral setting as the basis for designing responsive environments. Topics of perception, cognition, meaning, proxemics, privacy, territoriality, and social interaction. | SDG 11, SDG 3 |
| Planning And Urban Design | Architecture | This studio introduces students to urban planning and design as integral parts of problem solving process. It covers basic conceptual urban planning introduction where students learn, through land use study of qualitative and quantitative analysis, the geometrical formulation and assessment for | SDG 11, SDG 15 |



| | | | |
|---|---|--|-----------------------|
| | | different land use problems of a case study area. Urban design solutions are applied to these areas in case of new residential layout or regeneration in older parts of the study area. | |
| Plant Biotechnology | Sciences and Arts: Department of Biotechnology and Genetic Engineering | This class designed to provide students with up-to-date ways to develop higher-yielding and more nutritious crop varieties, to improve resistance to disease, or to reduce the need for inputs of fertilizers and other expensive agricultural chemicals. | SDG 2, SDG 12, SDG 15 |
| Bioinformatics | Sciences and Arts: Department of Biotechnology and Genetic Engineering | This course will introduce students to some of the most commonly used software packages for genetic analysis of nucleic acid, protein sequences and designing primers for PCR. In addition the class explores and explains some of the computational biology tools found on the Internet and how they can be applied to problems in genomic and molecular biology. | SDG 3, SDG 9 |
| Applications Of Biotechnology In Medicine | Sciences and Arts: Department of Biotechnology and Genetic Engineering | The aim of this course is to study a full spectrum of genetic diseases such as Thalassemia, sickle cell anemia, infectious diseases and diabetes by using the entire array of molecular genetic techniques. In addition the student well be exposed to genetic counseling training. Forensic cases from a real crime seen will be studied. | SDG 3, SDG 4 |
| Environmental Analytical Chemistry | Sciences and Arts: Department of Chemistry | This course will give the students the fundamentals of environmental chemistry and applications of advanced analytical techniques in environmental analysis. Emphasis will be on trace and ultra-trace toxic metals and organic pollutants in water. | SDG 6, SDG 12, SDG 15 |
| Organic Chemistry For Nursing Students | Sciences and Arts: | Structure, Bonding and Molecular Properties of organic | SDG 3, SDG 4 |



| | | | |
|--------------------------------|---|---|---------------|
| | Department of Chemistry | Compounds; Alkanes and Cycloalkanes; Stereochemistry of Alkanes and Cycloalkanes; Alkenes and alkynes; Stereochemistry; Alkyl Halides and their Reactions; Aromatic Compounds and their Reactions. Alcohols; Aldehydes and ketones; Carboxylic acids; Carbohydrates | |
| Chemistry Of Natural Compounds | Sciences and Arts: Department of Chemistry | Chemical properties, structural determination, Isolation, nomenclature and Synthesis of some natural products (terpens, steroids, hormones, vitamins, antibiotics, Prophyryns, alkaloids, Fatty acids, aromatic and aliphatic natural products). Economical interest of natural products in Jordan. | SDG 3, SDG 15 |
| Polymer Chemistry | Sciences and Arts: Department of Chemistry | Structure of polymers (Classification of polymers, Nomenclature, polymerization degree and Molar mass), Constitution (Constitution isomers, Copolymers, Molecular structure), configuration, conformation, Synthesis of polymers, polyreactions (Radical polymerisation, ionic polymerisation-Coordination polymersation, polycondensation, polyaddition), Polymers in solution (Thermodynamics of polymers solutions, Characterization of polymers), solid polymers (structure, thermal, mechanical, optical-and electrical properties), Qualitative analysis of polymers, Reaction, on polymers (Polymeranalog reactions, Cellulose chemistry, Crosslinking reactions), Recycling of the synthetic materials. | SDG 12, SDG 9 |



Examples of Mandatory Courses

| Course Title | Course Description | SDG(s) |
|---|---|---------------|
| Entrepreneurship And Innovation (HSS 119) | HSS 119 course introduces students to the theory of entrepreneurship and its practical implementation. It focuses on different stages related to the entrepreneurial process, including, ideation, idea assessment, feasibility analysis, business model innovation, building business plan, small business management as well as strategies that improve the performance of new business. Students will exercise ethical interpretation of the intellectual property context and related regulations. The course is centered around a mixture of theoretical exploration as well as case studies of real-world examples and invited successful entrepreneurs, students will develop an understanding of the successes, opportunities, and risks of entrepreneurship. This course has an interdisciplinary approach and is therefore open to students from all Majors. | SDG 8, SDG 9 |
| Leadership And Social Responsibility (HSS110) | The Leadership and Social Responsibility course aims to introduce the student to the basic concepts of social leadership and the responsibility of citizenship, develop the student's leadership skills and attitudes, develop and promote the values of the individual, group and society, and focus on the practice of social leadership and responsible citizenship. | SDG 4, SDG 16 |
| Communication Skills in Arabic | The course aims to develop and enhance the student's ability to use the Arabic language and develop his communication skills by learning effective listening skills and verbal and non-verbal communication through scientific and practical training, with an emphasis on comprehension and comprehension skills, as well as correct conversation, reading and writing skills. Students are trained in conducting personal interviews, performing a number of roles, storytelling, dialogue, persuasion, CV writing, stress and stress tolerance skills, listening and conflict resolution skills. Students are also extensively trained in the use of correspondence and presentations, and students are motivated to think critically, to actively participate in classroom discussions, to conduct strong and persuasive classroom presentations and to learn skills through teamwork and interactive methods. The course is also concerned with the most important grammatical and morphological rules and spelling issues that the student needs to write a text, and the course includes a set of tests in previous skills to measure the student's ability and comprehension of the course. | SDG 4 |
| Military Sciences | Military science and citizenship study material is considered as an organic extension of the education and teaching philosophy as it is a dimension of the national strategy of the Jordanian higher education, which takes into consideration | SDG 16 |



| | | |
|--|---|--|
| | <p>the comprehensive national security concept in its traditional and social meaning. It deepens the loyalty values in the homeland's land, people, regime institutions and military and security agencies that leads toward qualifying students to undertake their future roles as a loyal citizen and glorifying and sustaining the national feeling, loyalty, to be proud of the Jordanian fixed values and to trust the military and security systems until they achieve the positive change which sustain the security and stability of the country. In addition, it provides students with the basic information regarding building and developing the Hashemite kingdom of Jordan, its armed forces, its security agencies and showing its abilities in protecting the nation high interests. Moreover, this course has a role in developing and serving local Arabic and international communities as well as the comprehensive security awareness in the operational and psychological fields, the danger of drug, terrorism and the meanings of loyalty and citizenship and to prepare and mobilize the national resources.</p> | |
|--|---|--|

Examples of Optional Courses

| Course Title | Course Description | SDG(s) |
|------------------------------------|--|--------------|
| Introduction To The Nanotechnology | <p>The course is focused on defining nanotechnology and nanoscience as research and technology development fields. It describes the historical turning points in the development of nanotechnology and shows how it crosses the boundaries of physics, chemistry, biology, and engineering to provide new insights into the nature of matter and its remarkable potential for new technology. Examples of products and applications for nanotechnology are emphasized. Nanotechnology-related material science topics, the crossover from bulk to quantum mechanical properties (magnetic, mechanical, electrical, optical, and interaction with living tissues) as well as quantum mechanics principles are covered. Properties of carbon nanostructures, as well as their uses, are discussed. The course explores the possibility of developing nano-devices made from a single nanostructure and its functionalization to carry out a task on its own. In addition, the use of functional nanoparticles in medicine for treatment (drug delivery) and diagnosis (contrast enhancers), molecular manufacturing based on the nanofactory without</p> | SDG 3, SDG 9 |



| | | |
|---|--|-----------------------|
| | self-replication and useful non-replicating nanobots, are showcased. | |
| Farm Animal Products (For Non Animal Production And Nutrition And Food Technology Students) | Livestock industry in Jordan, animal products, animal welfare and breeds of livestock. | SDG 2, SDG 12 |
| Food Preservation "In English" (For Non Nutrition And Food Technology Students) | Food composition, food spoilage, foodborne illness, food processing and preservation, biopreservation methods will be introduced to students as well as food quality and sensory properties. | SDG 3, SDG 12 |
| Earth Problems And Solutions (For Non Plant Productions And Soil Irrigation Students) | Provide students with basic knowledge of Earth; spheres, resources, current environmental issues, population growth, pollution of water, land, and atmosphere and suggested solutions. | SDG 6, SDG 13, SDG 15 |
| Home Gardens (For Non-Plant Production and Soil And Irrigation Students) | This is a 3 credit hour, university elective course designed for non Plant production students. The course covers the following topics: plant groups used in the garden (narrow- and broad-leaf trees and shrubs, vines, and groundcovers); landscape planning, installation, and maintenance; flower gardening; lawn establishment and maintenance; vegetable gardening; growing tree fruits. | SDG 11, SDG 15 |
| Beekeeping (for Non-Plant Production Students) | This course is designed to explain the student with the honeybee in all aspects. It will include honey bee biology and behavior, hive management for honey production, products of the hive, pests and enemies and the value of bees as pollinators of agricultural crops. Current issues related to bees will be highlighted. | SDG 2, SDG 15 |
| Natural Resources and Man (For Non Plant Production And Soil And Irrigation Students) | An introduction to the types of natural resources including natural vegetation, water, soil, wildlife, fossil fuels and its relation to man. | SDG 6, SDG 12, SDG 15 |
| Animal Health (Not for Veterinary Medical And Agriculture Students) | This course is designed to give basic knowledge about animal health, zoonoses, methods of diseases transmission, animal breeds, behavior, reproduction, productivity, animal transportation and pet animal vaccination programs. In addition, animal contributions to human needs, impacts of drug residues on | SDG 3, SDG 12 |



| | | |
|--|---|-----------------------------|
| | human health, some aspects of food hygiene and food poisoning diseases. | |
| Pet Animal Care | This course is designed to give non veterinary students basic knowledge about pet care (dogs, cats, fish, birds) and on how keep these friendly animals healthy. Information will be gained about their breeds, house training, behavioral problems, feeding, grooming, diseases transmitted by them to humans, vaccinations, elective surgical operations, and breeding. | SDG 3, SDG 12 |
| Animal Behaviour And Welfare | Animal behavior and welfare course is about studying how animals function and interact with each other and with humans and learning how to assess and discuss their welfare objectively. Students will learn how to apply scientific and theoretical knowledge to globally relevant, practical problems in agriculture, conservation, research, and developing skills that can improve human interaction with animals. | SDG 15, SDG 12 |
| Animal Products And Public Health(For Non Veterinary Students) | This course will highlight the relationship between animal products and human health. The course will familiarize students with human foods of animal origin and their comparative nutritive value. Impact of animal products on human health will be emphasized. Also, infectious diseases that can be transmitted to humans by consuming animal products will be covered. | SDG 3, SDG 12 |
| Health Promotion | This course is designed to provide students with the necessary scientific background to learn about the concepts of health, health promotion and health prevention of disease, in addition to studying health promotion from an environmental perspective that includes social, cultural, economic and political aspects, and the student will be provided with the basics and necessary information on which the concept of health promotion focuses across different stages of life. This course is also concerned with supporting and promoting health by encouraging healthy lifestyles and creating a supportive healthy environment, and this course also deals with important topics such as chronic diseases and | SDG 3, SDG 4, SDG 5, SDG 10 |



| | | |
|--|---|--------------------------------------|
| | <p>health and behavioral problems such as addiction and smoking. On the other hand, this course highlights the importance of reproductive health and readiness for marriage and presents topics related to the concept of violence, gender-based violence and school bullying.</p> <p>This course is presented in unusual teaching methods where faculty members will apply interactive activities such as group work, brainstorming, case study and implementation of youth projects.</p> <p>This course is designed in collaboration with the Royal Health Awareness Society and the United Nations Population Fund</p> | |
| Introduction To Information Technology | <p>This course introduces the latest major concepts of Information Technology (IT) encompassing the Internet of Things and smart systems, cyber security, artificial intelligence, big data, blockchain, and social media. It also presents a perspective foundation on the range of underlying theoretical and practical principles regarding information technology and how they would impact the lifestyle of individuals.</p> | SDG 4, SDG 9, SDG 16 |
| Islam And Recent Problems | <p>The book deals with a number of concepts, the most important of which are: (human rights, the status of women in Islam, democracy, Shura, globalization, terrorism, drugs, causes, prevention and treatment, the media, contemporary medical issues in Islamic jurisprudence, and they were explained in detail in order to achieve the desired benefit, God willing, and also aims to identify the most important Islamic and detailed aspects of contemporary issues and the positive role of Islam in them.</p> | SDG 3, SDG 4, SDG 5, SDG 10 |
| Principles Of Sociology | <p>The course deals with the definition of the beginnings of the first social ideas to the contributions of the first pioneers in the modern era, and the resulting concepts and scientific theories that contribute to understanding societies, interpreting and analyzing their social systems and phenomena, and the distinctive cultural specificities of human groups that dictate the different practices and behaviors emanating from culture, and introducing the reality of confrontation and acculturation between cultures through metaphor and quotation, and the extent</p> | SDG 3, SDG 4, SDG 10, SDG 16, SDG 17 |



| | | |
|--------------------------|---|--------------------------------------|
| | <p>to which culture reflects on the cultural vision of man for his health and disease, and its change with the emergence of modern medical institutions, which Imposing the reality of social change on the human reality in view of the dynamism and movement of life itself, and the fact that man is the only being who created a culture in order to meet his material and moral life requirements and needs that ensure his continuity, survival and coexistence with the other.</p> | |
| Principles Of Psychology | <p>The course is concerned with reflecting the importance of psychology in contemporary life and its interest in studying human behavior by clarifying the foundations of psychology and its various branches and schools. It also develops individuals in terms of biology and educational abilities, and provides learners with knowledge about the important motives in their behavior and the behavior of individuals and the concept of remembering and forgetting. In addition to giving a clear idea of intelligence and personality and measuring them to help learners understand themselves, determine their abilities, adapt to themselves, members of their society and the environments around them, especially as we live in a rapidly changing and evolving world, characterized by improving the productivity of its members.</p> | SDG 3, SDG 4, SDG 10, SDG 16, SDG 17 |
| Educational Technology | <p>This course discusses the concept of educational technology and its relationship to educational means and systems style in addition to communication theories and its elements. And its tools are at the service of the educational process. This course also deals with the principles of educational design and its different models and training the student to design Educational plan for a course. It also deals with the use of contemporary technology in the teaching and learning process, such as the use of educational computers. And the uses of the Internet to serve e-learning by the teacher and the student.</p> | SDG 4 |
| Digital Skills | <p>This course is designed to enhance students' digital knowledge and skills, with the aim of preparing them to keep pace with current and future jobs in the evolving labor market. The course addresses a variety of topics to achieve this goal, allowing students to understand the foundations of the digital world and make the</p> | SDG 4, SDG 8, SDG 9 |



| | | |
|--------------------------------------|---|-----------------------|
| | <p>best use of technology to advance their careers. The topics of the course vary to include types of data, information and digital content, in addition to focusing on digital identity and how to create digital content in all its forms. The course also highlights cybersecurity and safety issues, including cybersecurity, and includes teaching students how to collaborate and work online. In addition, the course provides a comprehensive overview of global trends and technologies such as big data, artificial intelligence, and gamification applications. The course also focuses on balance in the use of technology and social media, and enhances an understanding of the digital professional competencies necessary in the current job market. Through a variety of learning styles and experiential activities, students will gain the ability to successfully deal with the demands of changing local and global markets. The course also aims to introduce students to the basic concepts of well-known social networks such as Facebook and Twitter, with a focus on social applications.</p> | |
| Islamic Civilization | <p>The course deals with the definition of Islamic civilization and its characteristics and its relationship with other civilizations that were based on communication, interaction and exchange with them, and the course also includes the definition of the achievements of Islamic civilization in strategic topics, urbanism, the emergence of the Islamic city, hydraulic engineering and mining.</p> | SDG 4, SDG 16 |
| The History Of The City Of Jerusalem | <p>The course examines the history of the city of Jerusalem through historical times since 3000 BC until the year 2000 AD, it examines the conditions of Jerusalem in prehistoric times, the status of Jerusalem in Islam, the history of Jerusalem in the Islamic era, and the political developments that Palestine in general and Jerusalem in particular were exposed to in contemporary history.</p> | SDG 4, SDG 11, SDG 16 |
| Islamic Culture | <p>This course deals with a detailed study of Islamic culture in terms of its concept and role in progress, and what is related to its original sources, namely the Holy Qur'an and the Sunnah of the Prophet purified and related to the biography of the Prophet fragrant and tributary of Islamic culture represented by jurisprudence and the Arabic language and Islamic history.</p> | SDG 4, SDG 16 |



| | | |
|-----------------------------------|---|-------------------------------|
| The Law in Our Life | This course examines the general culture of law and also aims to improve the knowledge of youth and society with the concepts of rights. The human being and the ability to determine their types and identify the legal guarantees to protect the rights and freedoms guaranteed by him The Jordanian Constitution and the factors of the rule of law, building their skills and enabling them with confidence to participate in the process of promoting a culture of sovereignty Law in society, and the rejection of violence in all its forms and knowledge of the position of national legislation on that in addition to protection Women's Legal Against Violence. Its importance also lies in organizing the relationship of individuals with each other, maintaining security and stability, and upholding the spirit of The content of the idea of citizenship | SDG 4, SDG 5, SDG 16 |
| Human Rights | The course deals with civil rights such as the right to acquire Jordanian nationality. Equality before the law and the right to personal liberty. It talks about political rights such as the right to vote and the right to form political parties, cultural and intellectual rights such as the right to education, economic and social rights such as the right to work and a special focus on the rights of women and children in Jordanian and international national legislation, and the Universal Declaration of Human Rights. | SDG 4, SDG 5, SDG 10, SDG 16 |
| Islam And Contemporary Challenges | This course deals with a detailed study that inspired contemporary local and national issues and at least in terms of their concept, characteristics and types. and its banishment, as well as dealing with the methods of the Islamic approach in dealing with issues theoretically and practically, prevention and treatment. | SDG 16, SDG 17, SDG 10, SDG 5 |
| Contemporary Problems | The course aims to identify the most important contemporary problems facing us in our Arab societies, which pose a great challenge for us to stand in front of them and confront them and determine how to deal with them and solve them in ways based on scientific and realistic foundations based on clarifying the problem, analyzing and studying it in a systematic and neutral framework that revolves around this problem and its positive and negative repercussions on our Arab societies in general and our Jordanian society in particular, and studying how to find appropriate solutions that | SDG 16, SDG 17, SDG 10, SDG 5 |



| | | |
|---|---|--------------------------------------|
| | <p>are compatible with the nature of our Arab societies within a civilized democratic framework based on democratic foundations. By presenting and discussing different points of view about them, especially since these issues face a great intellectual controversy in the difference of opinions and visions on how to deal with them. The course presents a range of topics such as: 1- Democracy 2- Women's participation in political life 3- Human rights 4- Political corruption 5- Globalization 6- Political terrorism</p> | |
| Sociology (In English) | <p>In this course in Sociology (3 credit hours), students will learn how to be creative and active participants in society in order to solve cultural dialectical problems, understand social phenomena within our society and other societies, and know the experiences and cultures of other societies and how to deal with them.</p> | SDG 3, SDG 4, SDG 10, SDG 16, SDG 17 |
| Individual And Society | <p>Students will be taught the course of introduction to the individual and society (as three credit hours) such topic can encourage our students to understand the power relationship in the society. to set up a new student awareness of the subject of subject individual and society and illustrate many concepts in social science in order to appreciate the humanistic side if there extra extraneous discipline for the father study in the humanities themselves .</p> | SDG 4, SDG 10, SDG 16 |
| History Of Sciences In Islam | <p>The course examines the study of the history of science among the Arabs in terms of: its origin, development, factors of prosperity, the achievements of the Arabs in various sciences during the Islamic era, the role of educational institutions in building society and Islamic civilization, and the impact of Arabs and Muslims on the renaissance and modern European civilization.</p> | SDG 4, SDG 9 |
| Disability And The Society(Not Allowed For Rehabilitation Science Dep.Students) | <p>The course provides a basic college culture of understanding, accepting, and integrating individuals with special needs in the community. This course is designed to provide an overview of medical terminologies and descriptions of major diseases or injuries associated with disabilities. The course discusses the sociocultural, psychological, functional, and economic consequences of handicaps affecting the individual, the family and the society. The emphasis will be laid on the Jordanian and the Arabic individuals and communities. A variety of diagnoses across different lifespan millstones of congenital and acquired nature will be discussed.</p> | SDG 4, SDG 10, SDG 16 |



| | | |
|---|--|-------------------------------------|
| | <p>Upon successful completion of this course, the students will be able to understand the common physical and mental roots of disabilities and their typical prognoses. The course will outline the rights and responsibilities of individuals with special needs and major available resources/skills to accommodate their needs. The course will equip the students with the basic community knowledge required to help in boosting individuals with special needs independency and life quality.</p> | |
| <p>Principles In Nuclear Energy And Its Peaceful Applications</p> | <p>The course aims to introduce energy principles with more focus on nuclear power. It discusses, in a simplified manner, nuclear energy concepts, the nuclear fuel cycle, the types of nuclear reactors, and a general overview of the development of nuclear energy and the motives and incentives for its use in the production of electricity in addition to the challenges and obstacles in this field. The course also discusses other peaceful applications of nuclear energy technology, frameworks, and legislation and the role of international and national institutions in controlling and regulating the nuclear energy sector. The Jordanian nuclear program is also highlighted, as Jordan is a newcomer to nuclear power.</p> | <p>SDG 7, SDG 9, SDG 13, SDG 16</p> |