Ministry of Higher Education and Scientific Research

Warith Al-Anbia University

College of Engineering

Job Description for Engineering College Graduates

For Scientific Departments

(Civil Engineering - Biomedical Engineering - Refrigeration and Air Conditioning Technology Engineering - Aircraft Engineering - Oil and Gas Engineering)

For the academic year

2024 – 2025

Civil Engineering Department Job Description

The job description for graduates of the College of Civil Engineering includes a wide range of responsibilities and skills necessary to contribute to the design and implementation of engineering and infrastructure projects. The civil engineer plays a fundamental role in the development, design and construction of projects that include roads, bridges, buildings, water and sewage networks, airports, and ports, in addition to many other engineering structures.

The basic tasks of the civil engineer:

1. Planning and design: Analyzing data and planning projects using engineering design software. Preparing detailed drawings and plans that take into account technical and environmental requirements.
2. Evaluation and analysis: Evaluating project sites and conducting feasibility studies to determine the best engineering methods and materials to be used. Analyzing the impact of projects on the environment.
3. Project management: Following up on the implementation of projects and ensuring that they are carried out according to the specified timetables and budgets. Supervising work

teams and ensuring compliance with quality and safety standards.

4. Communication and coordination: Collaborating with stakeholders, including architects, contractors, and government agencies to ensure that the project is implemented properly.
5. Problem solving: Dealing with engineering challenges that may arise during the design or implementation stages, and providing innovative and effective solutions.
6. Reporting: Writing technical reports that explain the project stages and provide the necessary recommendations.

Required Skills:

•Strong mathematical and analytical skills.

•Proficiency in engineering design programs such as AutoCAD and Civil 3D.

•Excellent communication and teamwork skills.

•Ability to solve problems and make decisions effectively.

•Deep understanding of engineering and environmental standards.

Job Description for Biomedical Engineering Graduates

The job description for Biomedical Engineering graduates depends on the skills and specializations they learned during their studies, as well as on the type of environment in which they will work (such as hospitals, research centers, or companies that manufacture medical devices, etc.). However, some general descriptions can be set that include the required tasks and skills, including:

1) Working in universities and bodies that monitor instructions and quality for medical engineering measurements and working in consulting offices in their field of specialization
2) Designing, manufacturing, developing and maintaining medical devices and equipment.
3) Designing and manufacturing prosthetic human organs and the properties of the materials used in their manufacture.
4) Acquiring the basic skills that qualify him to prepare the requirements for designing modern hospitals and health centers and addressing doctors to cover the basic requirements and needs in the precise medical specialty.
5) Managing the medical devices file, especially estimating the exact need according to the institution's need and setting the technical specifications for it and the optimal mechanism for working on these devices.

6) Working on implementing the quality system for the work of medical devices, medical equipment and occupational safety.
7) Be part of the surgical operations team to prepare and supervise medical devices and equipment.
8) Participate with the medical team in selecting and matching prosthetic limbs.
9) Set technical standards for accrediting companies specialized in importing medical devices that deal with the Ministry of Health according to modern scientific foundations that take into account the medical and engineering fields.
10) Design and maintain medical measurement devices.

Job Description for Graduates of Refrigeration and Air Conditioning Engineering

This job description guide serves as a comprehensive reference that outlines the tasks and responsibilities that graduates of the Refrigeration and Air Conditioning Engineering department can undertake in the labor market. It also highlights the core skills that graduates should possess to meet the needs of various industries and adhere to quality and safety standards.

General Job Description: A graduate of the Refrigeration and Air Conditioning Engineering department specializes in the design, installation, and maintenance of refrigeration and air conditioning

systems of various types, including residential, commercial, and industrial units. They work to ensure the efficiency, safety, and energy consumption of these systems, whether for residential, commercial, or industrial purposes. The graduate focuses on optimizing system efficiency, enhancing safety, and reducing energy consumption in compliance with environmental and health standards.

Areas of Work:

1. **Maintenance and Repair:**
    - Maintenance of residential refrigeration and air conditioning devices (e.g., air conditioners, refrigerators).
    - Repair of commercial refrigeration units (e.g., store and restaurant coolers).
    - Maintenance and repair of industrial refrigeration systems (e.g., cold storage and freezing rooms).
2. **Installation and Operation:**
    - Installation of refrigeration and air conditioning units of all types (residential and industrial).
    - Adjusting system settings and connecting them to control systems.
    - Performing comprehensive device checks before operation to ensure quality and safety.

3. **Design and Development:**
    - Designing refrigeration and air conditioning systems based on required specifications.
    - Developing innovative solutions to improve system efficiency and energy conservation.
    - Using modern software for design and analysis (e.g., AutoCAD or thermal analysis programs).

Tasks and Responsibilities:

1. Reading technical blueprints and diagrams related to refrigeration and air conditioning systems.
2. Conducting necessary inspections to diagnose faults and performing appropriate repairs.
3. Installing refrigeration and air conditioning components such as compressors, condensers, and evaporators.
4. Monitoring device performance and adjusting it to optimize efficiency.
5. Adhering to safety and occupational health standards during work.
6. Preparing periodic reports on system conditions and maintenance performed.
7. Handling environmentally friendly refrigeration systems and complying with regulations related to fluorine refrigeration.

Required Skills:

1. Technical skills in using maintenance and inspection tools.
2. Good understanding of refrigeration and air conditioning systems and their components.
3. Ability to troubleshoot technical problems.
4. Communication skills with customers and colleagues.
5. Familiarity with software used for design and analysis.
6. Understanding of safety and occupational health standards.
7. Time management skills and the ability to work under pressure.

Job Description for Graduates of the Aircraft Engineering Department

Fields of Work for Aircraft Engineering Graduates: The specialization in Aircraft Systems Engineering is considered rare and has been developed in response to labor market demands in the field of aircraft manufacturing, design, and maintenance. Aircraft engineers can work in the following fields:

- Ministry of Transport
- Ministry of Defense
- Ministry of Interior
- Ministry of Electricity
- Ministry of Higher Education and Scientific Research

Entities That Have Employed Aircraft Engineering Graduates: No batch has graduated yet.

Duration of Study for the Specialization: Four years.

Scientific Department Granting the Specialization: Aircraft Engineering Department.

Scientific Backgrounds Eligible for the Specialization: Graduates of high school (scientific, applied, and biological branches) and technical school graduates (Mechatronics Industrial Technology, Mechatronics for Vehicles, Mechanics, Electronics and Control, Machine Assembly, Power, Electricity, Engines).

Job Description for Petroleum Engineering Graduates

A graduate of the College of Engineering, Department of Petroleum and Gas Engineering at Warith Al-Anbiyaa University (peace be upon him) is distinguished by a comprehensive preparation that combines practical scientific skills, ethical values, and research capabilities. Below is a detailed explanation of the job description and the expected role of the graduate:

The job description of a petroleum engineering graduate varies depending on the type of work and field, but generally, the tasks and responsibilities can be summarized as follows:

1. **Planning and Design:**
    - Analyzing and studying drilling and oil extraction projects.
    - Designing and planning operations related to well drilling and oil and gas extraction.
    - Selecting appropriate technologies for the efficient and safe execution of oil projects.
2. **Drilling and Production Operations:**
    - Supervising drilling and exploration operations in oil wells.
    - Monitoring the performance of oil wells and analyzing data to ensure optimal performance.
    - Ensuring the application of safety and environmental standards in all operations.

3. **Data Analysis and Monitoring:**
    - Analyzing field data and production reports.
    - Assessing the efficiency of equipment and technologies used in drilling and production operations.
    - Conducting geophysical and engineering studies to analyze reservoir characteristics.
4. **Project Management:**
    - Supervising the implementation of oil extraction projects by coordinating with technical and administrative teams.
    - Setting completion timelines and managing project budgets.
5. **Maintenance and Improvement:**
    - Identifying issues with equipment and engineering systems and working on their maintenance and improvement.
    - Proposing solutions to enhance performance and increase oil extraction efficiency.
6. **Compliance with Regulations and Standards:**
    - Ensuring adherence to environmental and occupational safety regulations.
    - Monitoring compliance with local and international standards related to the oil industry.
7. **Continuous Development:**
    - Keeping up with the latest technologies and developments in the oil industry.
    - Working on developing new techniques to improve drilling and production methods.

Required Skills:

- Strong analytical skills.
- Deep knowledge of the equipment and technical systems used in the oil industry.
- Ability to solve problems and make quick decisions under pressure.
- Communication and teamwork skills.

Fields of Work:

- Oil and gas companies.
- Drilling and exploration companies.
- Engineering consulting firms.
- Oilfield services companies.