

## Academic Program Description (English Version)

Ministry of Higher Education and Scientific Research – Scientific Supervision and Evaluation Apparatus – Department of Quality Assurance and Academic Accreditation

### Academic Program Description Form for Colleges and Institutes – Academic Year 2024 – 2025

| Item                      | Details                                           |
|---------------------------|---------------------------------------------------|
| University                | Shatt Al-Arab University                          |
| College / Institute       | Engineering Technical College                     |
| Scientific Department     | Power Mechanics Techniques Engineering            |
| Date of filling the file  | 10/9/2024                                         |
| Head of Department        | Lect. Dr. Jawad Mahmoud Jasim                     |
| Scientific Assistant Dean | Lect. Dr. Ahmed Abdul-Razzaq                      |
| File checked by           | Quality Assurance and University Performance Unit |
| Approved by the Dean      | Asst. Prof. Dr. Mazin Abdul-Ilah Alwan            |

### Academic Program Description

This academic program description provides a concise summary of the main features of the program and the learning outcomes that students are expected to achieve, demonstrating whether the program has made the best use of the available opportunities. It is accompanied by a description of each course within the program.

| No. | Item                                    | Details                                                             |
|-----|-----------------------------------------|---------------------------------------------------------------------|
| 1   | Educational institution                 | Shatt Al-Arab University / Engineering Technical College            |
| 2   | Scientific department / centre          | Power Mechanics Techniques Engineering                              |
| 3   | Academic or professional program name   | Power Mechanics Techniques Engineering                              |
| 4   | Final degree awarded                    | Bachelor of Power Mechanics Techniques Engineering                  |
| 5   | Study system (annual / courses / other) | Bologna system                                                      |
| 6   | Accreditation program                   | Program of the Ministry of Higher Education and Scientific Research |
| 7   | Other external influences               | Field and scientific visits to factories and plants                 |
| 8   | Date of preparing the description       | 10/9/2024                                                           |

### 9. Academic Program Objectives

1. Preparing applied engineers in the field of mechanical technical engineering work.

2. Graduating students who are able to understand the parts of various mechanical devices and keep pace with developments in their technologies.
3. Training and developing engineering and technical staff in the operation and maintenance of mechanical devices.
4. Preparing research and studies to improve and develop the operation of mechanical devices.
5. Giving students the scientific skill to diagnose faults that occur in mechanical devices.
6. Putting forward proposals and alternatives for mechanical devices.

## **10. Required Program Outcomes and Teaching, Learning and Assessment Methods**

### **A. Knowledge objectives**

- A1: The ability to apply knowledge of mathematics, science and engineering.
- A2: The ability to identify, formulate and solve engineering problems.
- A3: The ability to use the new engineering techniques, skills and tools required, and to learn leadership skills and the value of commitment, ethical conduct and respect for others.
- A4: The ability to understand the applied codes of the profession and professional specifications, and to understand the professional and ethical responsibilities of the field.

### **B. Program-specific skill objectives**

- B1: The ability to supervise or carry out mechanical engineering work, and to work and integrate within multidisciplinary teams.
- B2: The ability to identify engineering problems in the work field and to think about solving those that arise during the execution of work.
- B3: The ability to design and conduct experiments, analyze and interpret results, write scientific reports and read engineering drawings.
- B4: The ability to keep up with developments in engineering materials and methods of execution, and to use modern techniques, skills and engineering tools in engineering practice.

### **C. Affective and value objectives**

- C1: Responsiveness: following how far the student interacts with the material presented on the screen.
- C2: Attention: drawing students' attention through questions during the lecture.
- C3: Interest: following the student's interest, shown by greater interaction with the material presented.
- C4: Forming value-based behaviour: the student reaches the top of the affective scale, maintaining a steady level in class without laziness or restlessness.

### **D. General and qualifying skills**

- D1: Developing the student's ability to deal with technical tools.
- D2: Developing the student's ability in dialogue and discussion.
- D3: The ability to carry out mechanical design using the latest design and 3D simulation software.

- D4: The ability to work with the latest devices for diagnosing mechanical, electrical and electronic faults in mechanical systems.

### Teaching and learning methods

1. Lectures.
2. Scientific laboratories.
3. Visual aids (Data Show).
4. Workshops.
5. Seminars.
6. Scientific exhibitions.

### Assessment methods

1. Daily assessment.
2. Semester assessment.
3. Practical assessment.
4. Final assessment.
5. Presentation.
6. Daily attendance.
7. Weekly reports.

## 11. Program Structure

| Level  | Course code | Course name                     | Units | Theory hours | Practical hours |
|--------|-------------|---------------------------------|-------|--------------|-----------------|
| First  | ATU 12011   | English Language                | 2     | 1            | –               |
| First  | ATU 12012   | Computer Fundamentals           | 3     | 1            | 2               |
| First  | ATU 12013   | Single-Variable Calculus        | 5     | 4            | –               |
| First  | ATU 12014   | Mechanical Workshops            | 4     | –            | 4               |
| First  | ATU 12015   | Engineering Physics             | 5     | 3            | 1               |
| First  | ATU 12016   | AutoCAD Drawing                 | 7     | 2            | 6               |
| First  | ATU 12017   | Human Rights and Democracy      | 2     | 2            | –               |
| First  | ATU 12018   | Arabic Language                 | 2     | 1            | –               |
| First  | ATU 12021   | Multivariable Calculus          | 6     | 5            | –               |
| First  | ATU 12022   | Materials Engineering           | 4     | 2            | 2               |
| First  | ATU 12023   | Fundamentals of Thermodynamics  | 6     | 4            | 1               |
| First  | ATU 12024   | Engineering Mechanics (Statics) | 8     | 8            | –               |
| First  | ATU 12025   | Fundamentals of Electricity     | 6     | 4            | 1               |
| Second | ATU 12031   | Fluid Mechanics (Statics)       | 5     | 3            | 2               |
| Second | ATU 12032   | Advanced Vehicle Technology     | 5     | 3            | 1               |
| Second | ATU 12033   | Computer                        | 3     | 5            | –               |
| Second | ATU 12034   | Thermodynamics (Ideal Gas)      | 5     | 3            | 1               |
| Second | ATU 12035   | Manufacturing Processes         | 5     | 4            | –               |

| Level  | Course code | Course name                           | Units | Theory hours | Practical hours |
|--------|-------------|---------------------------------------|-------|--------------|-----------------|
| Second | ATU 12036   | Fundamentals of Engineering Mechanics | 5     | 5            | –               |
| Second | ATU 24      | Crimes of the Baath Regime in Iraq    | 2     | 1            | –               |
| Second | ATU 12041   | Fluid Mechanics (Dynamics)            | 5     | 4            | 1               |
| Second | ATU 12042   | Internal Combustion Engines           | 5     | 3            | 2               |
| Second | ATU 12043   | Applied Engineering Mechanics         | 5     | 4            | –               |
| Second | ATU 12044   | Strength of Materials                 | 5     | 4            | 2               |
| Second | ATU 12045   | Linear Algebra                        | 5     | 4            | –               |
| Second | ATU 12046   | Thermodynamics (Gas Cycles)           | 5     | 4            | 1               |
| Second | ATU 12047   | English Language II                   | 2     | 1            | –               |
| Second | ATU22048    | Arabic Language II                    | 2     | 1            | –               |

## 12. Personal Development Planning

1. Scientific trips.
2. Scientific visits.

## 13. Admission Criteria (regulations for enrolment in the college or institute)

1. Graduates of the sixth preparatory grade, scientific branch.
2. Graduates of industrial preparatory schools.
3. Graduates of technical institutes.

## 14. Main Sources of Information about the Program

1. The library.
2. The internet.
3. Websites.
4. The virtual library.

## Curriculum Skills Map

Please tick the boxes corresponding to the individual program learning outcomes subject to assessment

[illegible]