University of Warith Al-Anbiyaa/ Collage of Engineering

Ministry of Higher Education and Scientific Research

Scientific supervision and evaluation device

Department of Quality Assurance and Academic Accreditation

Accreditation Department

Academic Program and Course Description Guide

University of Warith Al-Anbiyaa/ Collage of Engineering

Aacademic Program Description Form

University Name: University of Warith AL-Anbiyaa

Faculty/Institute: College of Engineering

Scientific Department: Aircraft Engineering Department

Academic or Professional Program Name: Bachelor of Science degree (B.Sc.) in Aircraft Engineering

Final Certificate Name: Bachelor of Science degree (B.Sc.) in Aircraft Engineering

Academic Degree System: Bologna Process

Description Preparation Date: 2024/12/1

File Completion Date: 2024/12/1

Signature:

Head of Department:
Assist. Prof. Dr. Ahmed Saddy Mohammad

Date:

Signature:

Assistant Dean For Scientific Affairs:
Assist. Prof. Dr. Hasan Talib Hashim

Date: 21 - 01 - 2025

The file is checked by: **Dr. Salam Al-Rbeawi**
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department
Date: 29/12/2024

Signature:

Approval of the Dean

أ.م.د. حسين هادي حسين
عميد كلية الهندسة
٢٠٢٥/١/٢٢

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1. **Program Vision**
The Aircraft Engineering Department seeks to be a scientific and research center of excellence that leads the process of innovation in the field of aircraft engineering and its applications, and achieves quality engineering education in its field of specialization.

2. Program Mission

1. Graduating engineers with an integrated leadership personality and high professional skills and ethics that meet the needs of the state's civil and military institutions related to their specialty.
2. Conducting research and studies, transferring knowledge and localizing technology in order to serve and develop society.
3. Providing a scientific atmosphere that helps creativity, nurture outstanding and talented people, invest their energies, enhance continuous learning skills, and serve the community within the framework of specialization.
4. Providing educational, academic and vocational guidance, and consolidating national identity and the spirit of belonging and loyalty to the country.

3. Program Objectives

The program aims to prepare engineers who have the ability to:

1. Successful practice in the field of aircraft engineering with the ability to self-learn, develop, apply and enhance technical knowledge to solve engineering problems and present distinctive designs.
2. Demonstrate a desire for continuous learning, technical proficiency, and comprehensive personal skills necessary to advance one's career and assume leadership roles and supervisory and administrative positions.
3. Performing engineering duties with high professionalism, ethical behavior, and economic and social awareness.
4. Continuing higher education and enhancing research capabilities in major research institutions in the aircraft engine industry.

4. Program Accreditation

Work in progress to adopt the Bologna Process requirements to achieve and ensure quality learning in the Aircraft Engineering Department.

5. Other external influences

1. Scientific library.
2. Scientific laboratories.
3. Computer laboratories.
4. Industrial software.
5. Providing internet service.
6. Training workshops and seminars, in addition to field visits to airports.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	6	14		**Basic course**
College Requirements				**Basic course**
Department Requirements	45	226		**Basic course**
Summer Training	Required			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
2024-2025/One	UOWA101	Computer Science	2	1
2024-2025/One	AIE 112	Mathematics I	4	
2024-2025/One	AIE 113	Physics	6	1
2024-2025/One	AIE 106	Workshops		6

2024-2025/One	AIE 114	Thermodynamics I	4	1
2024-2025/One	UOWA102	Democracy and Human Rights	2	
2024-2025/One	AIE 123	Engineering Mechanics	6	1
2024-2025/One	AIE 125	Electrical Engineering	2	1
2024-2025/One	UOWA105	English Language	2	
2024-2025/One	AIE 122	Mathematics II	4	
2024-2025/One	AIE 124	Eng. Drawing and Descriptive Geometry	4	1
2024-2025/One	AIE 106	Workshops		6
2024-2025/Two	AIE231	Mathematics III	3	
2024-2025/Two	AIE232	Fluid Mechanics	4	1
2024-2025/Two	AIE233	Thermodynamics II	3	1
2024-2025/ Two	AIE234	Mechanical Drawing and CAD	3	1
2024-2025/ Two	AIE235	Materials Properties	2	
2024-2025/ Two	AIE206	Workshops II		3
2024-2025/ Two	AIE207	English Language II	2	
2024-2025/Two	UOWA104	Crimes of the Baath Regime in Iraq	2	
2024-2025/ Two	AIE241	Engineering and Numerical Analysis	4	1
2024-2025/ Two	AIE242	Strength of Materials	4	1
2024-2025/ Two	AIE243	Aircraft Engines I	3	1
2024-2025/ Two	AIE244	Fundamentals of Aeronautics	2	1
2024-2025/ Two	AIE245	Manufacturing Processes	2	

2024-2025/ Two	AIE206	Workshops II		3
2024-2025/ Two	UOWA201	Computer Science II	1	2
2024-2025/ Two	UOWA103	Arabic Language	2	
2024-2025/ Three	AIE351	Mechanical Design I	2	2
2024-2025/ Three	AIE352	Heat Transfer I	2	
2024-2025/ Three	AIE353	Aerodynamics	4	1
2024-2025/ Three	AIE354	Theory of Machines	4	1
2024-2025/ Three	AIE355	Aircraft Engines II	4	1
2024-2025/ Three	AIE356	Computer Aided Design	1	2
2024-2025/ Three	AIE361	Mechanical Design II	2	2
2024-2025/ Three	AIE362	Heat Transfer II	3	1
2024-2025/ Three	AIE363	Gas Dynamics	4	
2024-2025/ Three	AIE364	Theory of Flight	4	
2024-2025/ Three	AIE365	Aircraft Engines III	4	
2024-2025/ Three	AIE366	Aircraft Electrical and Electronics Systems	2	1
2024-2025/ Four	AIE471	Aircraft Structures and Design I	6	
2024-2025/ Four	AIE472	Automatic Control	5	1
2024-2025/ Four	AIE473	Aircraft Systems	3	
2024-2025/ Four	AIE474	Unmanned Aerial Vehicles	2	1
2024-2025/ Four	AIE405	Project	1	2
2024-2025/ Four	AIE476	Engineering Ethics	2	

2024-2025/ Four	AIE481	Aircraft Structures and Design II	6	
2024-2025/ Four	AIE482	Aircraft Stability & Control	4	
2024-2025/ Four	AIE483	Aircraft Maintenance	3	1
2024-2025/ Four	AIE483	Aircraft Vibrations	4	1
2024-2025/ Four	AIE405	Project	1	2

8. Graduates Learning outcomes

Graduates of the program should have:

1. Ability to identify, formulate, and solve engineering problems by applying engineering, science, and mathematics principles.
2. Ability to apply engineering design to produce solutions that meet specific needs while taking into account public health, safety, global, cultural, social, environmental, economic, and other factors appropriate to the specialty.
3. Ability to develop and conduct appropriate experiments, analyze and interpret data, and use engineering judgment to draw conclusions .
4. The ability to communicate effectively with a group of workers in the aircraft sector and other sectors.
5. Ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must take into account the impact of engineering solutions in the global, economic, environmental and social context.

6. Ability to recognize the constant need to acquire new knowledge, choose appropriate learning strategies, and apply this knowledge.
7. Ability to work effectively in a team whose members together provide leadership, create an inclusive collaborative environment, set goals, plan tasks, and achieve goals.

9. Teaching and Learning Strategies

There are many teaching and learning methods used in the aircraft engineering branch, and the most important of these methods is the theoretical and practical lectures. Using computer programs in various aircraft specializations, discussion and dialogue, and scientific trips to airports. Discussions on specific topics, theoretical and practical student research, and office activities, which help students reach the following results :

1. Engineering ability to distinguish between correct information and incorrect information.
2. Easiness of scientific formulation and correction.
3. The ability to memorize and guess.
4. Ability to relate engineering concepts, principles and instructions .
5. The ability to recall, relate, and explain.
6. The ability to link theoretical information to the process and what happens at the work site and airports.

10.Evaluation methods

a. Written exams.
b. Quick exams (Quiz).
c. Writing scientific reports.
d. Homework.
e. Scientific seminars.
f. Graduation project discussion committees.

g. Emotional and value goals:

1. The ability to solve engineering and administrative problems in effective engineering ways.
2. Developing the spirit of cooperation and teamwork among engineers to serve the public good.
3. Developing the student's ability to deal with modern technologies related to the course vocabulary.
4. Developing the student's ability to make engineering and administrative decisions.

11.Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Mechanical Engineering	Thermofluids				1
Professor	Mechanical Engineering	Solar Energy			1	
Assistant Professor	Mechanical Engineering / Aircraft Engineering	Applied Mechanics / Aircraft Engineering			1	
Assistant Professor	Mechanical Engineering	Thermofluids / Aerodynamics				1
Lecturer	Mechanical Engineering	Fluids Mechanics			1	
Assistant Lecturer	Mechanical Engineering	Thermofluids			1	

Assistant Lecturer	Information Technology	Information Networks			1	
Assistant Lecturer	Law	Private Law / Civil Law				1

12. Acceptance Criterion

College admission requirements:

a. Approval of admission requirements for students in accordance with instructions issued by the Ministry of Higher Education and Scientific Research (central admission)
b. To be medically fit for the specialty applied for
c. Conditions for admission to the scientific department.
d. Choose the student's desire from more than one desire arranged according to preference
e. High school acceptance rate
f. Absorptive capacity of the scientific department.

13. The most important sources of information about the program

1. Sources approved by international universities
2. Local trends
3. Market needs
4. Studies and questionnaires
5. Specialized seminars and workshops with beneficiaries

14. Program Development Plan

The focus in the Aircraft Engineering Department is on continuous improvement. The department always seeks to improve the scientific and administrative process and overcome all the difficulties and obstacles that hinder the educational program by developing human resources to develop personality.

The following procedures explain the steps implemented or in the process of implementation in this area :

1. Continuous improvement and development of faculty members through training programs and workshops inside and outside the department and university.
2. Increasing extracurricular activities, such as holding conferences, scientific seminars, and personal and sports creativity, locally, regionally, and internationally.
3. Encouraging faculty members to obtain the highest academic and administrative ranks.
4. Providing modern scientific sources and books for the department's library to keep pace with the rapid progress in engineering sciences.
5. Providing specialized software in aircraft engineering and the computers necessary for this, along with internet lines for all teachers.