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: 2025/12/1

File Completion Date: 2025/12/1

Signature:

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

Date: 2 - 12 - 2025

Signature:

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

Date: 3 - 12 - 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: 1 /12/2025

Signature:

Approval of the Dean

ا.م.د.حسين هادي

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
2025-2026/One	UOWA101	Computer Science	2	1
2025-2026/One	AIE 112	Mathematics I	4	
2025-2026/One	AIE 113	Physics	6	1
2025-2026/One	AIE 106	Workshops		6
2025-2026/One	AIE 114	Thermodynamics I	4	1
2025-2026/One	UOWA102	Democracy and Human Rights	2	
2025-2026/One	AIE 123	Engineering Mechanics	6	1
2025-2026/One	AIE 125	Electrical Engineering	2	1
2025-2026/One	UOWA105	English Language	2	
2025-2026/One	AIE 122	Mathematics II	4	
2025-2026/One	AIE 124	Eng. Drawing and Descriptive Geometry	4	1
2025-2026/Two	AIE231	Mathematics III	3	
2025-2026/Two	AIE232	Fluid Mechanics	4	1
2025-2026/Two	AIE233	Thermodynamics II	3	1
2025-2026/Two	AIE234	Mechanical Drawing and CAD	3	1

2025–2026/Two	AIE235	Materials Properties	2	
2025–2026/Two	AIE206	Workshops II		3
2025–2026/Two	AIE207	English Language II	2	
2025–2026/Two	UOWA104	Crimes of the Baath Regime in Iraq	2	
2025–2026/Two	AIE241	Engineering and Numerical Analysis	4	1
2025–2026/Two	AIE242	Strength of Materials	4	1
2025–2026/Two	AIE243	Aircraft Engines I	3	1
2025–2026/Two	AIE244	Fundamentals of Aeronautics	2	1
2025–2026/Two	AIE245	Manufacturing Processes	2	
2025–2026/Two	UOWA201	Computer Science II	1	2
2025–2026/Two	UOWA103	Arabic Language	2	
2025–2026/Three	AIE351	Mechanical Design I	2	2
2025–2026/Three	AIE352	Heat Transfer I	2	
2025–2026/Three	AIE353	Aerodynamics	3	2
2025–2026/Three	AIE354	Theory of Machines	3	2
2025–2026/Three	AIE355	Aircraft Engines II	3	2

2025–2026/Three	AIE356	Science of Mathematical Modelling	3	
2025–2026/Three	AIE361	Mechanical Design II	2	2
2025–2026/Three	AIE362	Heat Transfer II	2	2
2025–2026/Three	AIE363	Gas Dynamics	3	2
2025–2026/Three	AIE364	Theory of Flight	3	1
2025–2026/Three	AIE365	Aircraft Engines III	3	1
2025–2026/Three	AIE366	Applications of Numerical Analysis	2	2

7. Graduates Learning outcomes

A. Knowledge

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

B. Skills

1- Ability to develop and conduct appropriate experiments, analyze and interpret data, and use engineering judgment to draw conclusions .

2- The ability to communicate effectively with a group of workers in the aircraft sector and other sectors.

3- Ability to recognize the constant need to acquire new knowledge, choose appropriate learning strategies, and apply this knowledge. **4-** Ability to work effectively in a team whose members together provide leadership, create an inclusive collaborative environment, set goals, plan tasks, and achieve goals.
C. Ethics
1- 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.

8. 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.

9. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
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	Applied Mechanics				1
Lecturer	Mathematics	Mathematics				1
Assistant Lecturer	Mechanical Engineering	Thermodynamics			2	
Assistant Lecturer	Mechanical Engineering	Applied Mechanics			1	
Assistant Lecturer	Information Technology	Information Networks			1	
Assistant Lecturer	Law	Private Law / Civil Law				1

10. **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.

11. **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

12. 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.

Professional Development

Mentoring new faculty members

Directing new faculty members to the necessity of working on developing the scientific curriculum, techniques of delivering scientific lectures, and how to deliver practical and theoretical material to the student.

Professional development of faculty members

Working to find creative and developing ideas and working to develop scientific laboratories and the practical aspect for teaching staff. In addition to develop theoretical aspect for them through encroaching scientific

research in exact specialization of the scientific department.

Program Skills Outline										
				Required program Learning outcomes						
Year/Level	Course Code	Course Name	Basic or optional	Knowledge		Skills				Ethics
				A1	A2	B1	B2	B3	B4	C1
FIRST STAGE	AIE112	Mathematics I	Basic	☑						
	AIE113	Physics	Basic	☑		☑				
	AIE114	Thermodynamics I	Basic	☑		☑		☑		
	AIE106	Workshops	Basic			☑			☑	
	UOWA101	Computer Science	Basic			☑		☑		
	UOWA102	Democracy and Human Rights	Basic							☑
	AIE122	Mathematics II	Basic	☑						
	AIE123	Engineering Mechanics	Basic	☑	☑	☑				
	AIE124	Eng. Drawing and Descriptive Geometry	Basic	☑	☑			☑		
	AIE125	Electrical Engineering	Basic	☑		☑		☑		
	AIE106	Workshops	Basic			☑			☑	
	UOWA105	English Language	Basic				☑	☑		

Program Skills Outline										
				Required program Learning outcomes						
Year/Level	Course Code	Course Name	Basic or optional	Knowledge		Skills				Ethics
				A1	A2	B1	B2	B3	B4	C1
SECONDE STAGE	AIE231	Mathematics III	Basic	☑						
	AIE232	Fluid Mechanics	Basic	☑		☑		☑		
	AIE233	Thermodynamics II	Basic	☑		☑		☑		
	AIE234	Mechanical Drawing and CAD	Basic	☑	☑			☑		
	AIE235	Materials Properties	Basic	☑		☑		☑		
	AIE206	Workshops II	Basic			☑			☑	
	AIE207	English Language II	Basic				☑	☑		
	UOWA104	Crimes of the Baath Regime in Iraq	Basic							☑
	AIE241	Engineering and Numerical Analysis	Basic	☑			☑			
	AIE242	Strength of Materials	Basic	☑		☑		☑		
	AIE243	Aircraft Engines I	Basic	☑		☑		☑		
	AIE244	Fundamentals of Aeronautics	Basic	☑				☑		
	AIE245	Manufacturing Processes	Basic		☑				☑	
	AIE206	Workshops II	Basic			☑		☑	☑	

	AIE208	Programming	**Basic**					☑	☑	
	UOWA103	Arabic	**Basic**				☑			☑

Program Skills Outline

				Required program Learning outcomes						
Year/Level	**Course Code**	**Course Name**	**Basic or optional**	**Knowledge**		**Skills**				**Ethics**
				A1	**A2**	**B1**	**B2**	**B3**	**B4**	**C1**
THIRD STAGE	AIE351	Mechanical Design I	**Basic**	☑	☑	☑		☑		
	AIE352	Heat Transfer I	**Basic**	☑		☑		☑		
	AIE353	Aerodynamics	**Basic**	☑	☑	☑		☑		
	AIE354	Theory of Machines	**Basic**	☑	☑	☑				
	AIE355	Aircraft Engines II	**Basic**	☑		☑		☑		
	AIE356	Science of Mathematical Modelling	**Basic**	☑	☑	☑		☑		
	AIE361	Mechanical Design II	**Basic**	☑	☑	☑		☑		
	AIE362	Heat Transfer II	**Basic**	☑		☑		☑		
	AIE363	Gas Dynamics	**Basic**	☑		☑		☑		
	AIE364	Theory of Flight	**Basic**	☑		☑		☑		
	AIE365	Aircraft Engines III	**Basic**	☑		☑		☑		

	AIE366	Applications of Numerical Analysis	**Basic**	☑			☑			