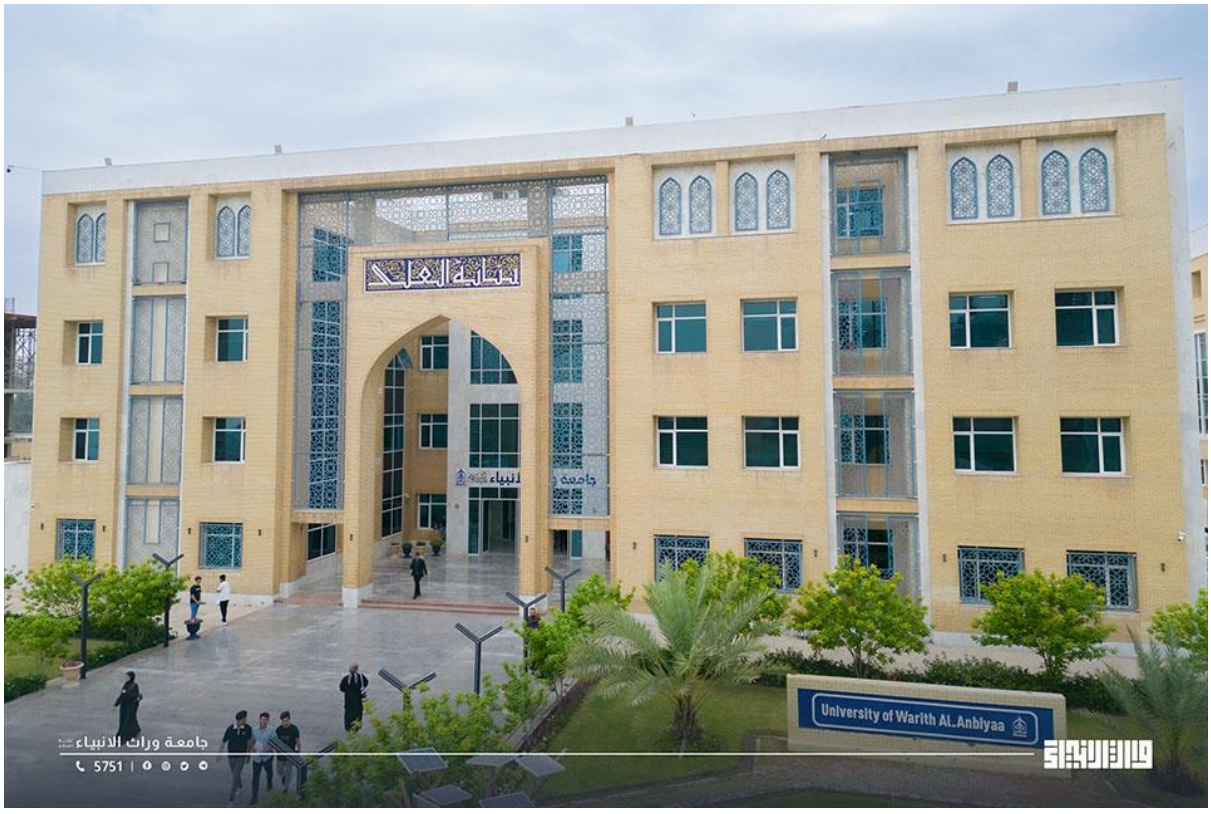
University of Warith Al-Anbiyaa
جامعة وارث الانبياء

First Cycle – Bachelor's Degree (B.Sc.) – Robotics and Artificial Intelligence Engineering Techniques

بكالوريوس - هندسة تقنيات الروبوتات والذكاء الاصطناعي



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1. Overview

This catalogue is about the courses (modules) given by the program of Robotics and Artificial Intelligence Engineering Techniques to gain the Bachelor of Science degree. The program delivers (40) Modules with (6000) total student workload hours and 240 total ECTS. The module delivery is based on the Bologna Process.

نظره عامه

يتناول هذا الدليل المواد الدراسية التي يقدمها برنامج هندسة تقنيات الروبوتات والذكاء الاصطناعي للحصول على درجة بكالوريوس العلوم. يقدم البرنامج (٤٠) مادة دراسية مع (٦٠٠٠) إجمالي ساعات حمل الطالب و٢٤٠ إجمالي وحدات أوروبية. يعتمد تقديم المواد الدراسية على عملية بولونيا.

2. Undergraduate Courses 2025-2026

Module 1

Code	Course/Module Title	ECTS	Semester
UOW1003	Computer I	3	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	60	15
Description			
This module introduces students to the fundamental concepts of computers and information technology. It covers the basic components of computer systems, including hardware, software, operating systems, input/output devices, and storage. Students learn essential computer skills such as file management, word processing, spreadsheets, presentation tools, and internet usage. The module also emphasizes understanding basic computing terminology, digital literacy, and responsible use of technology, preparing students for further study and practical application in academic and professional settings.			

Module 2

Code	Course/Module Title	ECTS	Semester
UOW1001	English 1	2	1

Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3		45	5
Description			
The module aims of English Language (Beginner) are designed to help learners at the beginner level develop their English language skills and achieve specific learning objectives. The module introduces beginner-level learners to the English language, focusing on building vocabulary and acquiring essential language structures. It develops listening and speaking skills through interactive activities and engaging in basic conversational practice, while enhancing reading comprehension abilities by introducing simple texts and emphasizing vocabulary and sentence structures. The module is also designed to provide foundational writing skills, including sentence formation, paragraph writing, and completing basic forms.			

Module 3

Code	Course/Module Title	ECTS	Semester
RTAI101	Workshops	7	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
	6	88	87
Description			
This module provides students with practical exposure to basic workshop practices and manufacturing processes used in engineering applications. It focuses on developing hands-on skills, safety awareness, and an understanding of tools, machines, and materials commonly used in workshops. Topics include fitting, carpentry, welding, smithy, sheet metal work, and basic machining operations, along with measurement and inspection techniques. Students learn proper handling of tools, workshop safety standards, and process planning through supervised practical sessions. The module emphasizes skill development, workmanship, and problem-solving through experiential learning. By the end of the course, students will have gained foundational practical skills and confidence necessary to support engineering design, fabrication, and maintenance activities in professional environments.			

Module 4

Code	Course/Module Title	ECTS	Semester
RTAI102	Engineering Drawing	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	4	88	62
Description			
This module introduces students to the fundamentals of engineering drawing as a universal language for technical communication. It develops the ability to visualize, interpret, and produce precise engineering drawings in accordance with standard conventions and practices. Topics include drawing instruments and techniques, lettering, dimensioning, scales, geometric constructions, orthographic projection,			

isometric and pictorial views and sections. Emphasis is placed on developing spatial visualization skills, accuracy, and clarity in graphical representation. Through hands-on exercises and practical assignments, students learn to translate engineering concepts into clear technical drawings used in design, manufacturing, and construction. By the end of the module, students will be able to read and prepare standard engineering drawings essential for professional engineering practice.

Module 5

Code	Course/Module Title	ECTS	Semester
RTAI103	Introduction to Robotics	4	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3		45	55
Description			
This module introduces students to the fundamental concepts and applications of robotics in modern engineering systems. It covers the basic components of robotic systems, including sensors, actuators, controllers, and end effectors, along with an overview of robot kinematics, dynamics, and control principles. Students are exposed to different types of robots such as industrial, mobile, and service robots, and their real-world applications in manufacturing, healthcare, and automation. The course also introduces basic robot programming, coordinate systems, and safety considerations. Through lectures, demonstrations, and simple hands-on activities or simulations, students develop an understanding of how robotic systems are designed, programmed, and integrated. By the end of the module, students will be able to explain core robotics concepts and identify suitable robotic solutions for engineering problems.			

Module 6

Code	Course/Module Title	ECTS	Semester
RTAI104	Mathematics	8	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4		60	140
Description			
This module provides first-stage engineering students with a strong mathematical foundation essential for analyzing and solving engineering problems. It covers fundamental topics such as calculus, including limits, continuity, differentiation, and integration, along with their applications in engineering contexts. The course also introduces linear algebra concepts such as matrices, determinants, and systems of linear equations, as well as basic differential equations. Emphasis is placed on logical reasoning, problem-solving techniques, and the application of mathematical methods to real-world engineering situations. Through lectures, tutorials, and problem-solving sessions, students develop analytical skills and mathematical rigor. By the end of the module, students will be equipped with the essential mathematical tools required for advanced engineering studies and professional practice.			

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