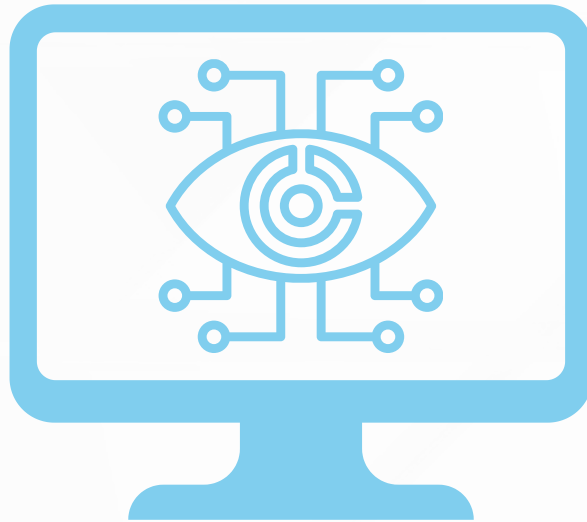




Department of Computer Science and Artificial Intelligence

About the Department

The Department of Computer Science and Artificial Intelligence at Jeddah University is one of the leading departments within the College of Computer Science and Engineering. It aims to equip students with advanced technical skills in artificial intelligence, data analysis, cybersecurity, and software engineering. The department offers a comprehensive curriculum that combines theory and practice, featuring hands-on projects and practical training to enhance students' expertise. Additionally, it emphasizes critical thinking and innovation, preparing graduates to compete globally, contribute to digital transformation, and make a positive impact on society.

Program Overview

The Bachelor of Computer Science program at Jeddah University, under the supervision of the College of Computer Science and Engineering, offers a comprehensive education that integrates theoretical foundations with practical applications, responding to the growing demand for technical expertise in the digital age. The program aims to equip students with modern knowledge in computer science, focusing on intelligent system design, data analysis, cybersecurity, and software engineering, enhancing their ability to tackle technical challenges and develop innovative solutions. It also provides students with opportunities to engage in applied projects and hands-on training, ensuring they gain real-world experience that strengthens their readiness for the job market.

Additionally, the program emphasizes analytical and creative skills, enabling students to leverage technology in problem-solving and strategic decision-making across various sectors. It strives to prepare graduates who can compete in both local and global markets, developing their technical and innovative capabilities to become part of the digital transformation and contribute to shaping a more advanced future in the field of computer science.

Program vision

Striving for excellence in computer science by providing advanced education and preparing highly skilled graduates with cutting-edge technical abilities, enabling them to lead and innovate in addressing future technological challenges.

Program Mission

The mission of the Computer Science program is to prepare graduates with a strong foundation in computer science principles, enabling them to contribute positively to scientific research and societal development, in alignment with Saudi Vision 2030.

Program Educational Objectives

- Applying acquired skills and knowledge at the international level in the field of computer science.
- Keeping up with the latest technologies and ongoing advancements in the field.
- Effectively contributing as an individual, team member, and leader in the profession.

Program Learning Outcomes (NCAAA requirements)

- Demonstrate fundamental knowledge in mathematics and sciences to analyze and solve field-related problems.
- Evaluate and classify algorithms, processes, and systems using analytical methods and modeling techniques.
- Understand programming language structures and compare algorithm advantages and disadvantages to solve AI problems.
- Design, implement, and evaluate practical solutions based on program-specific requirements.
- Develop hands-on expertise in tools, techniques, and best practices for problem-solving.
- Integrate computing solutions to address AI-related challenges.
- Communicate effectively in professional, academic, and social environments.
- Demonstrate ethical, professional, and social responsibility in decision-making.
- Show leadership by working independently or collaborating in teams to propose innovative solutions.
- Discover and apply new knowledge using effective learning strategies.

الخطة الدراسية لبرنامج بكالوريوس علوم الحاسب

(149) ساعة معتمدة موزعة على عشر مستويات دراسية

إجمالي عدد الساعات

CECS-111 مقدمة في البرمجة Introduction to Programming	SCPH-101 فيزياء عامة - 1 General Physics - 1	SCMT-102 تفاضل وتكامل - 1 Calculus	CECS-100 المهارات الرقمية Computer digital skills	ELPR-130 لغة إنجليزية - 3 English Language	المستوى الأول		
CECS-121 برمجة شيئية Object oriented programming المتطلب CECS-111	CECS-124 مقدمة قواعد بيانات Introduction to Database المتطلب CECS-111	CECS-122 رياضيات متقطعة حاسوبية Computational Discrete Math المتطلب SCMT-102	SEPS-110 مهارات الحياة الجامعية وسوق العمل University life skills and the labor market	ELPR-140 لغة إنجليزية - 5 English Language المتطلب ELPR-130	المستوى الثاني		
SCMT-211 تفاضل وتكامل - 2 Calculus - 2 المتطلب SCMT-102	SCST-210 إحصاء عام Statistics المتطلب SCMT-102	CECS-282 تراكيب بيانات Data Structures المتطلب CECS-121	CECN-282 تصميم المنطق الرقمي Digital Logic Design المتطلب CECS-122	ELPR-220 الكتابة الأكاديمية الإنجليزية English Academic Writing المتطلب ELPR-130	ISLM-100 ثقافة إسلامية - 1 Islamic Culture -1	المستوى الثالث	
CECS-221 البرمجة المرئية Visual Programming المتطلب CECS-121	SCPH-211 فيزياء عامة - 2 General Physics -2 المتطلب SCPH-101	SCMT-212 تفاضل وتكامل - 3 Calculus - 3 المتطلب SCMT-211	SCMT-221 جبر خطي Linear Algebra المتطلب SCMT-102	BUSC-100 مقدمة في الإدارة اللوجستية Introduction to Logistics Management	CLAL-100 مهارات لغوية - 1 Language skills -1	المستوى الرابع	
SCST-310 احتمالات تطبيقية وعمليات عشوائية Probability & Random Processes المتطلب SCST-210	CECS-381 تصميم وتحليل الخوارزميات Design and Analysis of Algorithms المتطلب CECS-281	CECN-283 معمارية الحاسب Computer Architecture المتطلب CECN-282	CESW-281 مبادئ هندسة البرمجيات Principles of Software Engineering المتطلب CECS-121	CLAL-200 مهارات لغوية - 2 Language skills -2 المتطلب CLAL-100	ISLM-200 ثقافة إسلامية - 2 Islamic Culture -2 المتطلب ISLM-100	المستوى الخامس	
CECY-382 أساسيات الأمن السيبراني Cybersecurity Fundamentals المتطلب CECS-282	CESW-383 تفاعل الإنسان والحاسب Human Computer Interaction المتطلب CECS-221	CECS-283 نظم التشغيل Operating Systems المتطلب CECN-283	CEAI-281 أساسيات الذكاء الاصطناعي Artificial Intelligence Fundamentals المتطلب CECS-281	ISLM-300 ثقافة إسلامية - 3 Islamic Culture -3 المتطلب ISLM-200	المستوى السادس		
CECS-416 تعلم الآلة التطبيقي Applied Machine Learning المتطلب SCST-310	CECS-413 التحليل العددي الحاسوبي Computational Numerical Analysis المتطلب SCMT-212	CECS-412 الرسم بالحاسب Computer Graphics المتطلب CECS-381	CECN-381 شبكات الحاسب Computer Networks المتطلب CECN-283	CECS-411 نظرية الحوسبة Theory of Computing المتطلب CECS-381	المستوى السابع		
CESW-382 إدارة مشاريع البرمجيات Software Project Management المتطلب CECS-121	CECS-392 الممارسة المهنية - 1 Professional Practice -1	XXXX مقرر حر - 1 Free Course -1	CECY-383 أخلاقيات وجوهرية الحاسب Computer Ethics & Governance	CECS-XXX مقرر اختياري - 1 Elective Course -1	CESW-381 تطوير الويب Web Development المتطلب CECS-121	BUBA 100 الابتكار وريادة الأعمال Innovation and Entrepreneurship	المستوى الثامن
المتطلب CECS-392 Professional Practice -1 الممارسة المهنية - 1 CECS-495						صيفي	
CECS-XXX مقرر اختياري - 3 Elective Course -3	CECS-XXX مقرر اختياري - 2 Elective Course -2	XXXX مقرر حر - 2 Free Course -2	CECS-495 مشروع تخرج - 1 Project -1 المتطلب CECS-392	CECS-417 بناء المترجمات Compiler Construction المتطلب CECS-381	المستوى التاسع		
XXXX مقرر اختياري - 4 Elective Course -4	CECS-418 نظرية البرمجة Theory of Programming المتطلب CECS-381	CECS-496 مشروع تخرج - 2 Project -2 المتطلب CECS-495	CECS-423 الحوسبة المتوازية والموزعة Parallel and Distributed المتطلب CECS-381	المستوى العاشر			

لا يمكن تسجيل المقررات إلا بعد اجتياز المتطلب السابق لها

رمز المقرر

إسم المقرر

إسم المتطلب السابق

رمز المقرر

إسم المقرر

إسم المتطلب السابق

مواد / متطلب الجامعة

مواد / متطلب الكلية

مواد / متطلب القسم

Graduate Attributes

- **Computer Science Knowledge** – Demonstrate expertise in computer science, enabling graduates to be active members of professional organizations.
- **Problem Analysis** – Exhibit the ability to comprehend and analyze fundamental computer science theories and principles.
- **Design & Development** – Prove proficiency in solving practical problems using specialized tools and techniques.
- **Critical Thinking** – Research complex computing problems and develop innovative solutions with minimal guidance, leveraging knowledge from related fields.
- **Decision-Making & Leadership** – Understand the impact of technological advancements on computing solutions and effectively manage and lead tech projects.
- **Entrepreneurship** – Innovate and create solutions for social and professional challenges, contributing to community progress.
- **Lifelong Learning** – Actively engage in activities that keep them updated with academic and professional advancements while continuously enhancing their expertise.
- **Ethics** – Consistently demonstrate high ethical standards and responsibility, leading in academic, professional, and social settings.
- **Communication** – Communicate effectively with diverse audiences from various educational backgrounds.

Student Outcomes

- Analyze complex computing problems and apply computing principles to identify suitable solutions.
- Design, implement, and evaluate computing-based solutions to meet specific requirements within the program's specialization.
- Communicate effectively in various professional contexts.
- Recognize professional responsibilities and make informed decisions based on legal and ethical principles.
- Work effectively as a team member or leader in activities related to the program's field.
- Apply computer science theories and software development fundamentals to create computing solutions.
- Acquire and apply new knowledge as needed, using appropriate learning strategies.

Career opportunities for program graduates

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|---|--|
| • Software systems/applications developer | • Computer programmer |
| • Computer systems analyst | • Software quality assurance (QA) tester |
| • Computer systems engineer | • Research scientist / engineer |
| • Network systems administrator | • Data scientist / analyst |
| • Database administrator | • Machine learning |
| • Business intelligence analyst | • Cybersecurity analyst |
| • Web developer | • Video game and robotics programmer |