UNIVERSITY of TECHNOLOGY
الجامعة التكنولوجية

First Cycle – Bachelor's degree (B.Sc.) – Computer Science – Artificial Intelligence Branch

بكالوريوس علوم – علوم الحاسوب – فرع الذكاء الإصطناعي

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1. Mission & Vision Statement

Vision Statement

The branch looks forward to preparing and qualifying competencies in the field of building and analyzing artificial intelligence systems, which makes it a leading role model in the field of computer science.

Mission Statement

The mission of the AI program is to cope with up-to-date developments in the field of programming and its applications. And to achieve quality assurance criteria in students, faculty, curriculum, and staff to meet the constituencies' needs in all scientific and educational areas.

2. Program Specification

Programme code:	BSc-CS	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

Computer **science** is a wonderfully wide-ranging subject. The emphasis of the program is the whole organism to which everything is related, the degree is popular - for some, it's the breadth of the subject that appeals, for others it's a path to specialization. All students have

the opportunity to transfer onto our specialist degrees in software, computer, and programming at the end of the first year.

Level 1 exposes students to the fundamentals of computers, suitable for progression to all programs within the computer programs group. Programs-specific core topics are covered at Level 2 preparing for research-led subject specialist modules at Levels 3 and 4. A computer science graduate is therefore trained to appreciate how research informs teaching, according to the University and School Mission statements.

At Levels 2, 3 and 4 students are free to choose more than half of their module credits with the proviso a range of modules are selected. This allows students to develop their wide-ranging interests in the computer field. Decisions on what to study are made with input from personal tutors.

Academic tutorials are held at Levels 1 and 2 with the same tutor, who is also the personal tutor, providing continuity and progressive guidance. Level 1 and 2 tutorials include several workshops to teach skills, e.g., library use and presentation skills, followed by assessed exercises, e.g., essays and talks, as opportunities to practice these skills in a subject-specific context.

International years and Industrial placements are also offered and individual needs are discussed with the appropriate tutor and accommodated wherever possible.

3. Program Goals

1. To provide a comprehensive education in Computer Science that stresses scientific reasoning and problem solving across the spectrum of disciplines within Computer Science.

2. To prepare students for a wide variety of post-baccalaureate paths, including graduate school, professional training programs, or entry-level jobs in any area of Computer Science.

3. To provide extensive hands-on training in electronic technology, statistical analysis, laboratory skills, and field techniques.

4. To provide thorough training in written and oral communication of scientific information.

5. To enrich students with opportunities for alternative education in the area of Computer Science through undergraduate research, internships, and study abroad.

4.   Student Learning Outcomes

This report contains information about the Computer Science Department, at the University of Technology/ software branch. Since the founding of Section 1983 was called the Computer branch on behalf of the branch name was changed to the software in 2004 - 2005, and it represents knowledge in the understanding and development programs. The graduate works in the area of learning, designing and software development. It also has expertise in the field of infrastructures and methods of data storage, transfer and implementation of calculation algorithms and methods of object-oriented programming and networking concepts, communication and information transfer. He/She also has expertise in basic structures and methods of data storage and transfer, the implementation of algorithms and calculation methods of object-oriented programming and concepts of networks and communication and information transfer.

Outcome 1

Identification of Complex Relationships

Graduates will be able to understand, design, and develop software products, and to build structures for data storage and information transfer.

Outcome 2

Oral and Written Communication

Graduates will be able to understand problems and suggest solutions. Formally communicate the results of investigations using both oral and written communication skills. Satisfying the requirements by collecting data, executing algorithms, using computation methods, and programming.

Outcome 3

Laboratory and Field Studies

Graduates will be able to perform laboratory experiments and field studies, by using scientific equipment and computer technology while observing appropriate safety protocols.

Outcome 4

Scientific Knowledge

Graduates will be able to demonstrate a balanced concept of how scientific knowledge develops, including the historical development of foundational theories and laws and the nature of science.

Outcome 5

Data Analyses

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

Outcome 6

Critical Thinking

Graduates will be able to use critical thinking and problem-solving skills to develop a research project and/or paper.

5. <mark>Academic Staff</mark>

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6. Credits, Grading and GPA

Credits

Koya University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 student workloads, including structured and unstructured workloads.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	A - Excellent	إمتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جداً	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	مقبول بقرار	(45 - 49)	More work required but credit awarded
	F – Fail	راسب	(0 - 44)	Considerable amount of work required
Note:				

> NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Calculation of the Grade Point Average (GPA)

1. The GPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program's total ECTS.

   GPA of 4-year B.Sc. degrees:

   GPA = [(1st module score x ECTS) + (2nd module score x ECTS) + ...] / 240

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRFU111	Programming Fundamentals	108	92	8.00	Basic	---
MATH112	Mathematics	108	92	8.00	Basic	---
STPR113	Statistics and Probability	93	57	6.00	Basic	---
PRAI114	Principles of Artificial Intelligence	63	37	4.00	Core	---
HURD115	Human Right and Democracy	33	17	2.00	Basic	---
WSHS106	Workshop	47	3	2.00	Basic	---

Semester 2 | 30 ECTS| 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
STPR121	Structure Programming	108	92	8.00	Basic	-----
DIST122	Discrete Structures	63	62	5.00	Basic	----
COLD123	Computer Organization and Logic Design	93	57	6.00	Basic	----

PRLA124	Prolog Language	78	47	5.00	Core	----
KNRM125	Knowledge Representation Methods	63	37	4.00	Core	----
WSHS106	Workshop	47	3	2.00	Basic	----

Semester 3 | 30 ECTS| 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
OBOP211	Object Oriented Programming	108	92	8.00	Basic	STPR121
DAST212	Data Structures	78	47	5.00	Basic	---
NUAN213	Numerical Analysis	78	47	5.00	Basic	MATH112
PYLA214	Python Language	78	47	5.00	Core	---
SEST215	Searching Strategies	78	47	5.00	Core	KNRM125
BAPC216	Baath Party Crimes	33	17	2.00	Basic	--

Semester 4 | 30 ECTS| 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
DATA221	DataBase	108	92	8.00	Basic	---
MICR222	Microprocessor	93	57	6.00	Basic	COLD123
SOSA223	Sorting and Searching Algorithms	78	47	5.00	Basic	DAST212
FULO224	Fuzzy Logic	63	37	4.00	Core	---
HESM225	Heuristic Search Methods	78	47	5.00	Core	SEST215
ENLA216	English language	33	17	2.00	Basic	--

Semester 5 | 30 ECTS| 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COAR311	Computer Architecture	93	57	6.00	Basic	MICR222
COTH312	Computation Theory	78	47	5.00	Core	DIST122
COGR313	Computer Graphics	93	57	6.00	Core	---
NALP314	Natural Language Processing	93	57	6.00	Core	KNRM125
NECO315	Neural Computing	78	47	5.00	Core	---
ETHI316	Ethics	33	17	2.00	Basic	----

Semester 6 | 30 ECTS| 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
WEPR321	Web Programming	108	92	8.00	Basic	---
CODE322	Compiler Design	93	57	6.00	Basic	COTH321
ALCO323	Algorithm and its Complexities	63	37	4.00	Core	STPR113
EXSY324	Expert Systems	93	57	6.00	Core	---
OPRE325	Operations Research	63	37	4.00	Core	NUAN213
ENAW326	English Academic Writing	33	17	2.00	Basic	ENLA216

Semester 7 | 30 ECTS| 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
OPSY411	Operating system	108	92	8.00	Basic	---
MALE412	Machine Learning	78	47	5.00	Core	STPR113
DASE413	Data Security	78	47	5.00	Basic	---
DAWA414	Data Warehouse	63	37	4.00	Core	DATA221
INRT415	Information Retrieval Techniques	63	37	4.00	Core	NALP314
PROJ406	Project	62	38	4.00	Core	---

Semester 8 | 30 ECTS| 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PLRO421	Planning & Robotics	93	57	6.00	Core	HESM225
DAMI422	Data Mining	63	37	4.00	Core	DAWA414
MAVI423	Machine Vision	78	72	6.00	Core	---
DELC424	Deep Learning Concpts	63	37	4.00	Core	NECO315
CONE425	Computer Networks	93	57	6.00	Basic	---
PROJ406	Project	62	38	4.00	Core	---

8.   Contact

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