

Faculty of Artificial Intelligence and Informatics

Software Engineering
Bachelor's Degree Program
Program Information Package



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1.1. Establishment of the Faculty

A) History of the Faculty and Academic Processes

The Near East University Faculty of Artificial Intelligence and Informatics was established in 2025 and began its educational activities in the same year. Turkish citizens are admitted to the faculty's programs through the Student Selection and Placement Examination (ÖSYM) in line with the decision of the Council of Higher Education (YÖK). The Faculty of Artificial Intelligence and Informatics was founded with the vision of becoming a leading institution in the contemporary world, integrating research and education through a student-centered approach and possessing international academic standards. The faculty offers undergraduate, master's, and doctoral programs in both Turkish and English.

B) Educational Policy and Academic Goals

The Faculty of Artificial Intelligence and Informatics, in line with its progressive educational philosophy, adopts a contemporary understanding of education and implements a student-centered teaching model that promotes interdisciplinary collaboration. The educational programs are structured in accordance with international standards. Graduates of the faculty make qualified contributions to the professional and academic fields as competent, innovative, and ethically responsible individuals in artificial intelligence, software engineering, and information technologies. The academic staff contribute to science and aim to lead technological advancement through their scientific research, R&D (Research and Development) activities, and community projects.

C) Physical and Academic Infrastructure

Located at the heart of the Near East University campus, the Faculty of Artificial Intelligence and Informatics possesses a modern infrastructure designed to support advanced education and training activities. The multi-story faculty building houses fully equipped classrooms, computer laboratories, seminar halls, academic and administrative offices, and shared facilities. Theoretical courses are delivered in 18 classrooms, all equipped with projection systems, smart boards, and internet connectivity. The faculty includes five fully equipped computer laboratories and specialized labs focused on artificial intelligence, machine learning, data science,

cybersecurity, and software development, providing undergraduate and graduate students with opportunities for project-based and practical work.

The faculty collaborates with units such as the Near East University International Artificial Intelligence and IoT Research Center to strengthen its research activities. Dedicated offices are provided for academic staff, along with separate administrative units and a student affairs office. In addition, relaxation areas, meeting rooms, and club rooms are allocated to enhance students' social and academic engagement. These facilities enable students to gain hands-on experience alongside theoretical knowledge and to actively participate in university life.

D) Accreditation and Quality Policy

The Faculty of Artificial Intelligence and Informatics embraces national and international quality standards in its education and research processes and aims to enhance the quality of education through a philosophy of continuous improvement. The faculty actively participates in national and international accreditation processes, regularly reviewing and improving its academic programs. These programs are structured with consideration for professional ethics, security standards, and current industry requirements, with the goal of equipping students with a strong and well-rounded professional foundation.

1.2. Mission, Vision, and Core Values of the Faculty

A) Mission

The Faculty of Artificial Intelligence and Informatics aims to achieve excellence and leadership at both regional and global levels in the fields of artificial intelligence and informatics education, research, and community engagement. Moving beyond traditional approaches focused solely on mathematics, physics, and the natural sciences, the faculty strives to cultivate a new generation of dynamic, innovative, and visionary professionals equipped with comprehensive scientific and practical knowledge. Graduates are educated to be individuals who, guided by ethical values,

can respond to the evolving demands of the global workforce and are ready to lead cutting-edge intelligent projects in the fields of informatics and data science.

B) Vision

Drawing strength from its natural connection with technology, the Faculty of Artificial Intelligence and Informatics envisions creating a unique environment that fosters interdisciplinary collaboration, advanced research, and innovation. The faculty aims not only to contribute to scientific projects but also to educate professionals who will lead and shape these projects with a forward-looking perspective. In this context, it aspires to become a nationally and internationally recognized institution, pioneering both research and practical applications.

C) Core Values

- 1) Embracing a culture of quality
- 2) Supporting continuous improvement
- 3) Ensuring sustainable development
- 4) Commitment to scientific and universal standards
- 5) Adherence to ethical values
- 6) Student-centered approach
- 7) Encouraging innovative thinking

1.3. Faculty Goals and Objectives

A) Objectives of Faculty

- To educate qualified engineers and researchers in the fields of artificial intelligence and informatics, contributing to scientific and technological development.
- To produce innovative solutions in education, research, and community service in accordance with ethical values and universal academic principles.

- To conduct interdisciplinary studies and strengthen scientific collaborations at national and international levels.
- To increase interaction with the public, private sector, and society, contributing to digital transformation and the information society.
- To develop students' analytical thinking, problem-solving, and lifelong learning skills.

B) Goals of Faculty

- To ensure that students acquire knowledge and skills in artificial intelligence and informatics according to international standards.
- To continuously improve educational programs to meet the technological needs of the era.
- To increase research activities and produce scientific projects at national and international levels.
- To strengthen knowledge and technology transfer through collaboration with public and private sectors.
- To increase societal contribution and promote AI literacy.
- To enhance graduates' analytical thinking, problem-solving, and innovative application competencies.

C) Goals and Objectives Covering the Field of Education

Goal 1: To conduct pioneering research in artificial intelligence and informatics at national and international levels.

- **Objective 1.1:** To increase the number of scientific publications through interdisciplinary projects.
- **Objective 1.2:** To obtain support from national and international research funds.
- **Objective 1.3:** To establish and strengthen advanced research laboratories within the faculty.

Goal 2: To produce innovative AI solutions for regional and global challenges.

- **Objective 2.1:** To develop joint R&D projects with industry and public institutions.
- **Objective 2.2:** To carry out applied research in priority areas such as smart cities, health technologies, and cybersecurity.
- **Objective 2.3:** To strengthen technology transfer mechanisms to convert developed projects into societal benefits.

D) Goals and Objectives Covering the Field of Research

Goal 1: To generate high-quality knowledge in artificial intelligence and informatics at a global level.

- **Objective 1.1:** To provide laboratory and project environments that enhance students' scientific research skills.
- **Objective 1.2:** To provide opportunities that strengthen the interdisciplinary researcher identity of academic staff.
- **Objective 1.3:** To support academic staff participation in national and international scientific events and conferences.
- **Objective 1.4:** To create academic support and funding mechanisms that encourage sustainable and innovative AI projects.

Goal 2: To develop innovative AI solutions addressing regional and global challenges.

- **Objective 2.1:** To develop joint R&D projects with industry, public institutions, and research centers.
- **Objective 2.2:** To conduct applied research in priority areas such as smart cities, health technologies, data science, and cybersecurity.
- **Objective 2.3:** To strengthen technology transfer mechanisms to convert scientific outputs into societal benefits.

E) Goals and Objectives Covering Contributions to Society and Educational Services

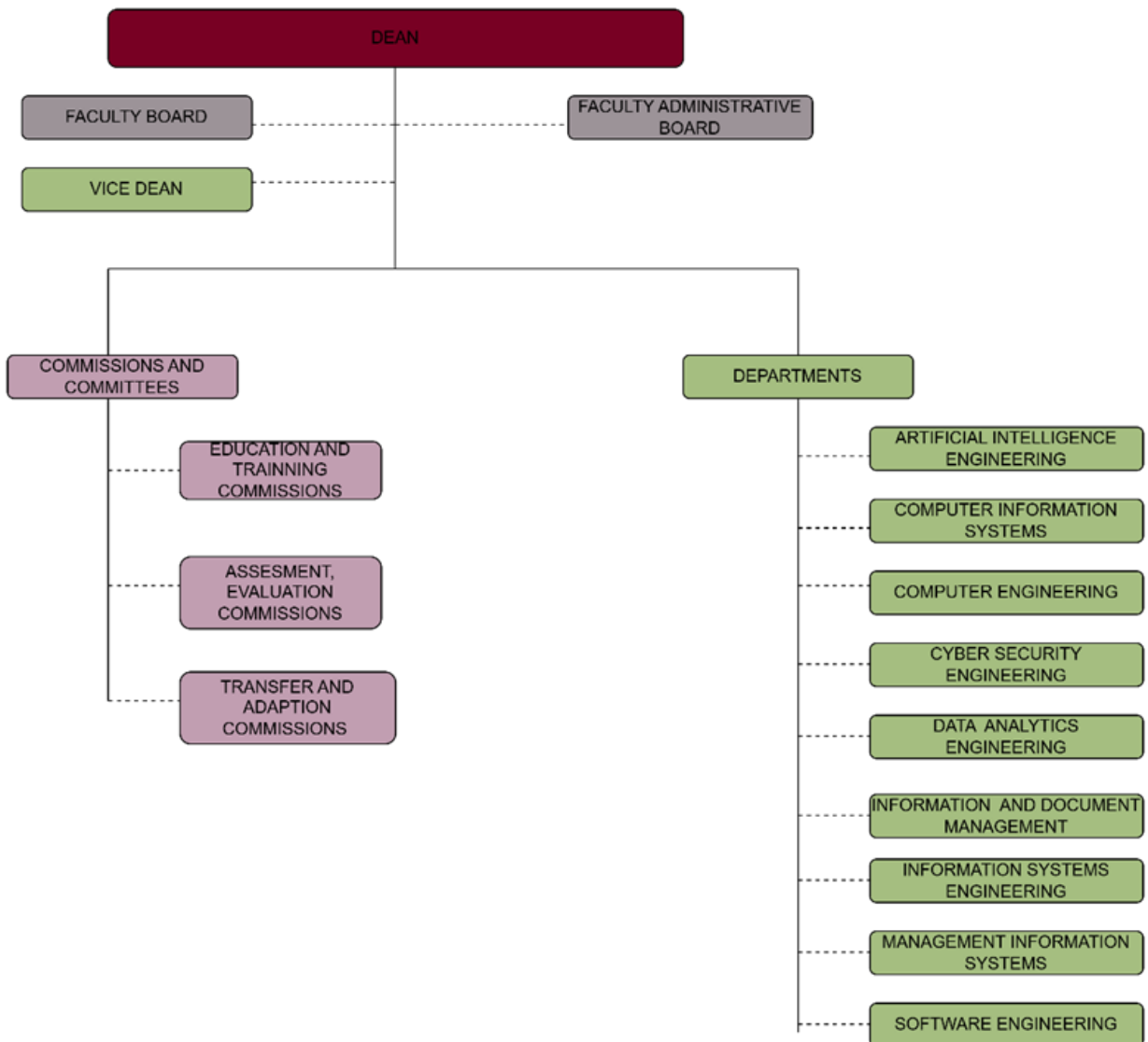
Goal 1: To educate qualified individuals who contribute to the digital transformation of society and promote AI literacy.

- **Objective 1.1:** To support students' participation in community responsibility projects and technology-focused voluntary activities.
- **Objective 1.2:** To organize seminars, workshops, and training programs that increase digital awareness in society.
- **Objective 1.3:** To develop socially impactful projects in AI and informatics that address community needs.
- **Objective 1.4:** To establish joint education and certification programs with public and private sectors, contributing to technological development in society.

Goal 2: To provide sustainable educational services that support lifelong learning and professional development.

- **Objective 2.1:** To develop continuous education and certification programs that support the professional growth of academic staff and students.
- **Objective 2.2:** To accelerate society's adaptation to technology by conducting joint projects with local and international stakeholders.
- **Objective 2.3:** To create educational platforms with online and face-to-face content accessible to different age groups and professions.

1.4. Organizational Chart of the Faculty



1.5. Faculty Administration

Academic Title and Full Name	Academic Unit of Appointment
Prof.Dr. Fadi Al-Turjman	Software Engineering
Prof.Dr. Nadire Çavuş	Computer Informatics Systems
Prof.Dr. Fezile Özdamlı	Management Information Systems
Prof. Dr. Gülsüm Aşıksoy	Artificial Intelligence Engineering
Prof.Dr. Rahib Abiyev	Computer Engineering
Assoc.Dr. Idoko John Bush	Cybersecurity Engineering
Assoc.Dr. Seren Başaran	Data Analytics Engineering
Assist.Prof.Dr. Amr Abdelbari	Information Systems Engineering

1.6. Academic Staff of the Faculty

A) Academic Structure and Departments

The Near East University Faculty of Artificial Intelligence and Informatics conducts innovative education and research activities in artificial intelligence, information technologies, and data science through its interdisciplinary structure.

The faculty consists of nine academic departments: Information and Records Management, Information Systems Engineering, Cybersecurity Engineering, Software Engineering, Computer Informatics Systems, Data Analysis Engineering, Artificial Intelligence Engineering, Management Information Systems, and Computer Engineering. Each department offers both theoretical and practical courses in its field, thereby contributing effectively to undergraduate and postgraduate programs.

Computer Engineering and Software Engineering provide fundamental engineering skills in software development, algorithms, and system design. Artificial Intelligence Engineering and Data Analysis Engineering offer advanced training and research opportunities in AI techniques, machine learning, and big data analytics. Cybersecurity Engineering focuses on network security, cryptography, and cyber defense. Information

Systems Engineering and Management Information Systems emphasize the integration of information technologies into business and organizational structures. Computer Informatics Systems equips students with interdisciplinary IT infrastructure and solution development skills, while Information and Records Management contributes to society and academia through expertise in information resource management and digital archiving.

Through this comprehensive academic structure, the faculty delivers technology-oriented, innovative, and research-based education, offering students a broad range of specializations and actively contributing to both regional and global scientific development.

B) Distribution and Strength of Academic Personnel

No	Faculty/School/Institute	Department / Academic Unit	Academic Staff (with Title)
1	Faculty of Artificial Intelligence and Informatics	Software Engineering	Prof.Dr. Fadi Al-Turjman
2	Faculty of Artificial Intelligence and Informatics	Computer Informatics Systems	Prof.Dr. Nadire Çavuş
3	Faculty of Artificial Intelligence and Informatics	Management Information Systems	Prof.Dr. Fezile Özdamlı
4	Faculty of Artificial Intelligence and Informatics	Artificial Intelligence Engineering	Prof. Dr. Gülsüm Aşıksoy
5	Faculty of Artificial Intelligence and Informatics	Computer Engineering	Prof.Dr. Rahib Abiyev

6	Faculty of Artificial Intelligence and Informatics	Computer Engineering	Assoc. Prof. Dr. Ahmet İlhan
7	Faculty of Artificial Intelligence and Informatics	Computer Engineering	Assoc.Prof. Dr. Boran Şekeroğlu
8	Faculty of Artificial Intelligence and Informatics	Cybersecurity Engineering	Assoc.Prof.Dr. Idoko John Bush
9	Faculty of Artificial Intelligence and Informatics	Computer Informatics Systems	Assoc.Prof. Dr. Sahar Ebadinezhad
10	Faculty of Artificial Intelligence and Informatics	Data Analysis Engineering	Assoc. Prof.Dr.Seren Başaran
11	Faculty of Artificial Intelligence and Informatics	Information Systems Engineering	Assist.Prof.Dr.Amr Abdelbari
12	Faculty of Artificial Intelligence and Informatics	Computer Engineering	Assist.Prof.Dr. Elbrus Bashir Imanov
13	Faculty of Artificial Intelligence and Informatics	Artificial Intelligence Engineering	Assist.Prof.Dr. Kaan Uyar
14	Faculty of Artificial Intelligence and Informatics	Computer Informatics Systems	Assist.Prof.Dr. Nasim Ahmadzadeh
15	Faculty of Artificial Intelligence and Informatics	Computer Engineering	Assist.Prof.Dr. Ümit İlhan
16	Faculty of Artificial Intelligence and Informatics	Software Engineering	Assist. Prof. Dr. Oluwaseun Priscilla Olawale

17	Faculty of Artificial Intelligence and Informatics	Cybersecurity Engineering	Dr. Galip Savaş İlgi
18	Faculty of Artificial Intelligence and Informatics	Data Analysis Engineering	Dr. Hamit Altıparmak
19	Faculty of Artificial Intelligence and Informatics	Artificial Intelligence Engineering	Dr. Mohamad Ziad Altabel
20	Faculty of Artificial Intelligence and Informatics	Computer Informatics Systems	Dr. Oluwafemi Ayotunde Oke
21	Faculty of Artificial Intelligence and Informatics	Information and Records Management	Dr. Sıla Gürler
22	Faculty of Artificial Intelligence and Informatics	Software Engineering	Dr.Ramiz Salama
23	Faculty of Artificial Intelligence and Informatics	Information Systems Engineering	MSc. Çağrı Özkan
24	Faculty of Artificial Intelligence and Informatics	Artificial Intelligence Engineering	MSc.Sinem Alturjman

C) Academic Development and Quality Policy

Within the Near East University Faculty of Artificial Intelligence and Informatics, there are nine academic departments: Information and Records Management, Information Systems Engineering, Cybersecurity Engineering, Software Engineering, Computer Informatics Systems, Data Analysis Engineering, Artificial Intelligence Engineering, Management Information Systems, and Computer Engineering.

The faculty stands out with its expert and experienced academic staff. As of the 2024–2025 academic year, the faculty employs a total of 24 academic personnel, comprising 5 professors, 5 associate professors, 6 assistant professors (doctoral faculty members), 6 PhD holders, and 2 lecturers.

The academic staff provide education at both undergraduate and graduate levels and contribute to scientific studies in artificial intelligence and information technologies through their research. They also participate in various training and development programs to support their professional growth and play active roles in national and international projects, thereby advancing their individual academic careers and increasing the faculty's recognition at the international level.

1.7. Programs within the Faculty

The Faculty of Artificial Intelligence and Informatics offers a wide range of academic programs at undergraduate, master's, and doctoral levels, providing students who wish to gain in-depth knowledge in artificial intelligence and informatics with extensive opportunities. Each program enables students to specialize in their chosen field and contribute to the ecosystem of information technologies and artificial intelligence.

The programs offered by the faculty are as follows:

Undergraduate Programs

- Artificial Intelligence Engineering
- Computer Engineering
- Computer Information Systems
- Cybersecurity Engineering
- Data Analysis Engineering
- Information and Records Management
- Information Systems Engineering
- Management Information Systems
- Software Engineering

Master's Programs

- Artificial Intelligence Engineering

- Computer Engineering
- Computer Information Systems
- Information Systems Engineering
- Software Engineering

Doctoral Programs

- Computer Engineering
- Computer Information Systems

2. GENERAL INFORMATION OF THE PROGRAM

2.1. Brief History and Development of the Program

The Near East University Department of Software Engineering was established in 2013 and commenced its educational activities following the decision of the Council of Higher Education(YÖK) and Education Supervision and Accreditation Board (YÖDAK). The undergraduate programs are offered in both English and Turkish, while the master's (MSc) program is delivered in English.

During the first year, the program provides students with a foundation in engineering and computer science. In the following years, it focuses on software development principles, system design, and practical application skills. Supported by intensive laboratory work and computer-based applications, the program aims to equip students with competence in software development processes, design, analysis, testing, and maintenance.

Graduates are trained to integrate various information systems and to adapt to scientific and technological advancements as qualified software engineers. The primary goal of the master's program is to offer advanced education, encourage creative research, publish these studies in internationally recognized journals, and contribute to the IT field in both the private and public sectors.

2.2. Type of Education of the Program

The Department of Software Engineering provides formal (on-campus) education. Courses are conducted face-to-face, online, and in hybrid formats, combining both theoretical and practical approaches.

2.3. Educational Level of the Program

The Software Engineering undergraduate program consists of 240 ECTS credits and covers a four-year course of study. It meets the “Level 6” qualifications defined by the Turkish Higher Education Qualifications Framework (TYYÇ).

To graduate, students must achieve a Cumulative Grade Point Average (CGPA) of at least 2.00 out of 4.00 and successfully complete all courses in the program with a minimum grade of DD/S. In addition, students are required to complete a compulsory internship of the specified duration and quality.

The program includes 52 courses in total, with at least five courses offered in each semester, including university-wide required and elective courses. Alongside the compulsory courses mandated by the Turkish Higher Education Council (YÖK), additional common courses determined by the University Senate are also included.

Technical elective courses are offered each semester, and these electives constitute approximately 25% of the total courses. The Software Engineering undergraduate program has at least 13 elective courses.

2.4. Language of Instruction of the Program

The Department of Software Engineering offers education in two programs, one in Turkish and the other in English.

2.5. Duration of the Program

The Software Engineering program lasts 4 years (8 semesters). This can be extended to 5 years with a preparatory school.

2.6. Organizational Chart of the Program

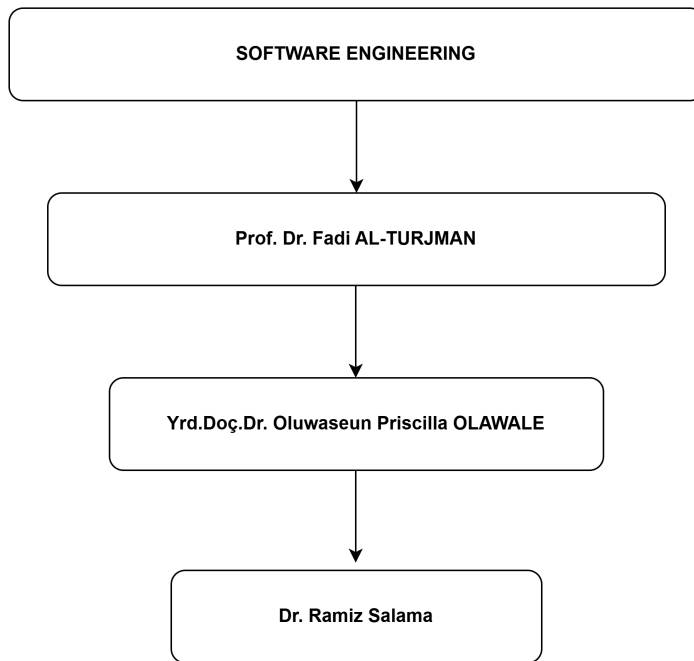
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Faculty of Artificial Intelligence and Informatics



2.7. Program Coordinator

Program Coordinator:

Prof. Dr. Fadi AL-TURJMAN

Head of Department

fadi.alturjman@neu.edu.tr

2.8. Program Management and Academic Staff

The Department of Software Engineering within the Near East University Faculty of Artificial Intelligence and Informatics aims to educate engineers who are competent in software development processes and possess innovative and analytical thinking skills. The department, with its expert academic staff specializing in software design,

algorithms, system analysis, software testing, and maintenance, contributes to both theoretical and practical education. As of 2025, the department employs 3 full-time academic staff members, consisting of 1 professors, 1 assistant professors (Doctoral Faculty Members), 1 PhD holders. The academic staff actively participate in undergraduate and postgraduate education, providing thesis supervision and conducting scientific research that makes significant contributions to the field. Faculty members also play an active role in national and international projects, in-service training programs, and academic collaborations that support their professional development, thereby continuously advancing the faculty's scientific and academic growth.

3. MISSION AND VISION OF THE PROGRAM

3.1. Mission

To educate individuals who produce universal knowledge in the fields of artificial intelligence and information technologies, who are qualified human resources, and who contribute to social development through scientific research. The program aims to raise creative and critical thinkers who adhere to ethical values. In this direction, our faculty seeks to equip students in line with the requirements of the era and to transform academic knowledge and technology into societal benefit.

3.2. Vision

To become an innovative, leading, and internationally recognized faculty in the field of artificial intelligence and informatics. Furthermore, the faculty envisions playing a pioneering role in scientific and technological progress through individuals and projects that will shape the technologies of the future, while aiming for sustainable development in research, education, and community service.

4. CORE VALUES OF THE PROGRAM

Core Values

- Commitment to ethical principles and professional standards
- Continuous learning and self-improvement
- Innovation and adaptability to technology
- Critical and analytical thinking skills
- Teamwork and interdisciplinary collaboration
- High-quality and sustainable software development approach
- Scientific research and data-driven decision making
- Social responsibility and environmental awareness

5. FIELDS OF ACTIVITY OF THE PROGRAM

1.Education and Training Activities

The Near East University Faculty of Artificial Intelligence and Informatics Software Engineering Program aims to provide students with knowledge, skills, and competencies in software development, system design, algorithms, and problem solving in line with international standards. The curriculum is structured to offer fundamental engineering and computer science courses in the early years and to focus on software development principles, software testing, system analysis, and maintenance in the later years. Theoretical courses are supported by intensive laboratory and computer applications, while student-centered and technology-based teaching methods are employed. Academic advising and guidance services support students' academic and personal development, and assessment and evaluation processes are carried out using performance- and process-oriented methods.

2.Research and Development Activities

The Department of Software Engineering carries out national and international scientific research and projects in the fields of artificial intelligence and software technologies. During the 2024–2025 academic year, across the faculty a significant number of scientific publications were produced, including 39 Web of Science (WOS)

articles, 87 Scopus-indexed articles, 11 international books, and 105 international book chapters. Within the scope of NEU Scientific Research Projects (BAP), one project has been supported and is ongoing. In addition, six projects in the field of Software Engineering, supported by other sources, are being carried out under the titles “Learn with DUX”, “Evaluate with DUX”, “Fluency with DUX”, “Call Bot with DUX”, “Real Time Transcription with DUX for Radiologist”, and “The Humanoid Robot”. Furthermore, during the 2024–2025 period, the Department of Software Engineering alone organized 24 scientific events, including 8 symposiums, 12 conferences, 2 panels, and 2 seminars. Faculty members and students also actively participated in 27 external events organized by the university and other institutions, including 6 symposiums, 4 congresses, and 5 conferences. These activities significantly enhance the research skills and academic development of both students and faculty members.

3. Professional Development and Continuing Education Activities

The program organizes various activities to continuously improve the professional knowledge and skills of both faculty members and students. Training sessions on mobile application development were provided for NEU staff, and consultancy and training sessions on mobile application and smart solution development were offered to the wider community. Two international Software and Artificial Intelligence hackathon events were also held, and collaboration agreements were signed with international universities and research institutes. These activities ensure the continuous professional growth of the academic staff and students and enable them to closely follow innovations in the field of software engineering.

4. Social Contribution and Community Service Activities

The Department of Software Engineering carries out various projects to contribute to society’s digital transformation and to foster social responsibility awareness. Webinars on “AI and Software” were organized for Teknofest candidates, and training and consultancy activities on mobile application development were provided for NEU staff and the broader community. The program also strengthens its commitment to community service through studies that contribute to national and international digital transformation strategies and artificial intelligence policies. These initiatives help students develop a strong sense of social responsibility and actively contribute to sustainable development in the field of software engineering.

6. OBJECTIVES AND GOALS OF THE PROGRAM

6.1. Statement of Purpose

This program aims to continually improve the quality of education, to equip students with the knowledge, skills, and competencies required by the contemporary era, and to contribute to scientific research as well as to society through education and community-oriented services.

6.2. Statement of Goals

A) Objectives and Goals Covering the Field of Education

Goal 1: Continuously improve the quality of education and training.

- **Objective 1.1:** Strengthen the educational infrastructure and support it with up-to-date technology.
- **Objective 1.2:** Increase both the quantity and quality of academic and administrative staff.
- **Objective 1.3:** Update and develop the curriculum in line with current requirements.

Goal 2: Provide students with the knowledge, skills, and competencies demanded by the modern era.

- **Objective 2.1:** Develop students' critical, analytical, and creative thinking abilities.
- **Objective 2.2:** Equip students with the competence to use information technologies effectively and ethically.
- **Objective 2.3:** Strengthen interdisciplinary collaboration and team spirit.

B) Objectives and Goals Covering the Field of Research

Goal 1: Increase scientific research activities and achieve international visibility.

- **Objective 1.1:** Use research infrastructure effectively and continuously improve it.
- **Objective 1.2:** Encourage academic staff and students to participate in scientific research.
- **Objective 1.3:** Conduct interdisciplinary projects funded by national and international sources.

Goal 2: Support the transformation of research outputs into societal and industrial benefits.

- **Objective 2.1:** Develop industry collaborations and technology transfer projects.
- **Objective 2.2:** Share research results in international journals and scientific events.

C) Objectives and Goals Covering Contributions to Society and Educational Services

Goal 1: Strengthen education and social responsibility activities aimed at society.

- **Objective 1.1:** Organize seminars, courses, and workshops for the community within the scope of lifelong learning.
- **Objective 1.2:** Transfer the faculty's knowledge base to public institutions, the private sector, and non-governmental organizations.
- **Objective 1.3:** Develop and disseminate projects that provide solutions to social problems.

Goal 2: Contribute to social development at both local and global levels.

- **Objective 2.1:** Produce projects in line with ethical values and sustainable development principles.
- **Objective 2.2:** Develop collaborations focused on community service with national and international stakeholders.

7. PROGRAM COMPETENCIES

7.1. Program Learning Outcomes

Department of Software Engineering – Program Learning Outcomes

Knowledge – Theoretical and Factual

PQ1. Applies knowledge of mathematics, logic, and fundamental computer sciences to software engineering problems.

PQ2. Possesses fundamental knowledge of computer hardware, operating systems, and network structures.

Skills – Cognitive and Practical Learning Outcomes

PQ3. Develops effective solutions and applications using algorithms and data structures.

PQ4. Utilizes object-oriented and functional programming approaches.

PQ5. Plans and implements software development life cycle (SDLC) processes.

PQ6. Performs database design and management, including relational and non-relational data management.

PQ7. Applies software security, encryption, and cybersecurity measures.

PQ8. Develops software solutions in cloud and distributed systems.

PQ9. Effectively uses code quality and version control systems (such as Git).

Competences – Learning Outcomes for Independent Work and Taking Responsibility

PQ10. Applies teamwork and project management skills in software projects.

Competences – Learning Competence and Learning Outcomes

PQ11. Possesses the ability for continuous learning and adaptation to new technologies.

Competences – Communication and Social Competence Learning Outcomes

PQ12. Considers sustainability, environmental, and social impacts in software projects.

Competences – Field-Specific Competence Learning Outcomes

P13. Applies professional and ethical responsibilities within the context of software engineering.

7.2. Relationship Between Program Competencies and TQF-HE Competencies

The Turkish Qualifications Framework for Higher Education (TQF-HE) is a framework established to ensure quality assurance in higher education programs in Türkiye and to define qualifications at the national level. This framework is designed in alignment with the European Qualifications Framework (EQF) and covers undergraduate, graduate, and doctoral levels.

A) Structure of the TQF-HE

The Turkish Qualifications Framework for Higher Education (TQF-HE) consists of four levels that define and classify learning outcomes in higher education programs:

- Level 5 – Associate Degree
- Level 6 – Bachelor’s Degree
- Level 7 – Master’s Degree
- Level 8 – Doctorate

Each level is defined by level descriptors expressing specific learning outcomes in terms of knowledge, skills, and competences. Information regarding level descriptors is presented below:

The Software Engineering Program is at the undergraduate level (Level 6), and the program competencies are structured according to the dimensions of Knowledge, Skills, and Competences.

Knowledge: Within the scope of the TQF-HE, “knowledge” is defined as theoretical and/or factual understanding that includes the comprehension of facts, principles, theories, and practices related to a field of study or work. In this context, graduates of the Software Engineering program possess theoretical and factual knowledge in accordance with national and international standards in the following areas: algorithms, data structures, programming languages, software engineering processes, computer architecture, operating systems, networks, databases, requirements engineering, software life cycle, quality, testing, verification and validation, configuration management, professional ethics, information security, personal data protection, and relevant standards.

Skills: Within the scope of the TQF-HE, “skills” refer to logical, intuitive, and creative thinking abilities and manual skills acquired in a field of study or work; they also include the ability to use knowledge and solve problems through methods, ethics, and tools. In this context, graduates of the Software Engineering program have the ability to gather, analyze, and express requirements using modeling languages; design appropriate architectures; apply design patterns; and develop multilayered/distributed systems. They also gain the ability to write secure and sustainable code using high-level languages and related frameworks; design unit, integration, and system tests; perform automation; and improve solutions according to performance, scalability, usability, and maintainability criteria.

Competences: In the TQF-HE, “competence” refers to the ability to use knowledge and skills independently or by taking responsibility in a work or learning environment, to identify and fulfill learning needs, and to act with consideration of social and ethical responsibilities. In this context, graduates of the Software Engineering program take responsibility in individual and team projects; perform project planning and risk management; effectively use version control, task tracking, and agile methodologies;

follow, evaluate, and apply new technologies with lifelong learning awareness; use scientific research methods and integrate evidence-based results into the development process; conduct technical communication both orally and in writing; prepare technical documentation and presentations; communicate effectively with stakeholders and ensure consensus on requirements; develop secure software solutions that respect ethical principles and privacy; and produce engineering solutions that consider social, environmental, and sustainability impacts.

Through this structure, the knowledge, skills, and competencies of graduates of the Software Engineering Bachelor's Program are defined in alignment with both the European Qualifications Framework for Lifelong Learning (EQF-LLL) and the Turkish National Qualifications Framework (TYYÇ).

B) Preparing a Matrix of Program Learning Outcomes and NQF Alignment

SOFTWARE ENGINEERING PROGRAM LEARNING OUTCOMES

Knowledge – Theoretical and Factual Learning Outcomes	PY1. Applies knowledge of mathematics, logic, and fundamental computer science to software engineering problems.
	PY2. Possesses basic knowledge of computer hardware, operating systems, and network structures.
Skills – Cognitive and Practical Learning Outcomes	PY3. Develops effective solutions and applications using algorithms and data structures.
	PY4. Utilizes object-oriented and functional programming approaches.
	PY5. Plans and implements software development life cycle (SDLC) processes.

	PY6. Designs and manages databases, performing relational and non-relational data management.
	PY7. Implements software security, encryption, and cybersecurity measures.
	PY8. Develops software solutions for cloud and distributed systems.
	PY9. Effectively uses code quality and version control systems (e.g., Git).
Competencies – Autonomy and Responsibility Learning Outcomes	PY10. Applies teamwork and project management skills in software projects.
Competencies – Learning Competence Learning Outcomes	PY11. Possesses the ability for continuous learning and adaptation to new technologies.
Competencies – Communication and Social Competence Learning Outcomes	PY12. Considers sustainability, as well as environmental and social impacts, in software projects.
Competencies – Field-Specific Learning Outcomes	PY13. Applies professional and ethical responsibilities within the context of software engineering.

7.3. The Relationship Between Courses and Program Qualifications

A) Preparing the Matrix of the Relationship Between Courses and Program Qualifications

		Basic Education Courses Suitable for the Field		PROGRAM QUALIFICATIONS (OUTCOMES)												
		General Core Courses														
		General Culture Elective Courses														
		Vocational Education Courses														
	COURSE CODE	COURSE NAME	ECTS	PY1	PY2	PY3	PY4	PY5	PY6	PY7	PY8	PY9	PY10	PY11	PY12	PY13
1. YEAR / 1. SEMESTER	CHM101	GENERAL CHEMISTRY	5													
	AII102	PROGRAMMING AND PROBLEM SOLVING	5	4	1	4	3	2	1	1	1	3	2	4	1	2
	ENG101	ENGLISH I	3													
	MTH101	CALCULUS I	5													
	MTH113	LINEAR ALGEBRA	5													
	PHY101	PHYSICS I	5													
	CAM100	CAMPUS ORIENTATION	2													
1. YEAR/ 2. SEMESTER	AII108	OBJECT ORIENTED PROGRAMMING	6	3	1	4	5	2	1	1	1	4	3	4	1	3
	ENG 102	ENGLISH II	3													

	MTH102	CALCULUS II	6														
	AII104	DISCRETE STRUCTURES	5	5	1	4	2	1	1	1	1	2	1	3	1	1	
	PHY102	PHYSICS II	6														
	CAR100	CAREER PLANNING	2														
	GEC351	21ST CENTURY SKILLS	2														
2. YEAR 1. SEMESTER	AII201	DATA STRUCTURES and ALGORITHMS	6	4	1	5	3	2	1	1	1	4	2	4	1	2	
	AII001	LOGIC DESIGN	6	4	2	3	2	1	1	1	1	1	1	2	1	1	
	SWE234	HUMAN COMPUTER INTERACTION	3	2	1	1	2	2	1	1	1	1	2	3	2	2	
	MTH251	PROBABILITY AND STATISTICS	6														
	AII003	PRINCIPLES OF SOFTWARE ENGINEERING	6	2	1	3	2	5	2	2	2	3	4	3	3	4	
	CHC100	CYPRUS HISTORY and CULTURE	2														
2. YEAR 2. SEMESTER	AII203	COMPUTER ORGANISATION AND ARCHITECTURE	5	3	2	4	2	4	5	4	4	3	2	3	2	3	
	AII202	DATABASE SYSTEMS	5	5	5	3	2	2	1	2	2	2	3	3	2	2	
	SWE202	SOFTWARE CONSTRUCTION	4	3	1	3	2	4	2	2	2	3	4	3	2	3	
	YIT101/TUR101	TURKISH LANGUAGE FOR INTERNATIONAL STUDENTS	2														

	ENG201	ORAL COMMUNICATION SKILLS	4													
	TE	TECHNICAL ELECTIVE	5													
	SWE299	SUMMER TRAINING I	6	2	2	2	2	3	1	1	1	3	5	4	2	3
	AII427	INTRODUCTION of MANAGEMENT	5	1	1	1	1	4	1	1	1	1	4	2	1	2
3.YEAR / 1. SEMESTER	AII302	OPERATING SYSTEMS	6	2	5	3	2	3	2	3	3	2	2	3	1	2
	SWE395	ADVANCED OBJECT ORIENTED PROGRAMMING	4	2	1	4	5	2	1	1	1	4	3	3	1	3
	AII311	MANAGEMENT INFORMATION SYSTEMS FOR ENGINEERS	7	1	1	2	1	4	1	1	1	2	4	2	1	2
	SWE301	SOFTWARE DESIGN AND ARTHITECTURE	5	3	1	3	4	4	2	2	2	3	4	3	2	4
	AII439	OCCUPATIONAL HEALTH and SAFETY	4	1	1	1	1	1	1	1	1	1	1	1	2	2
	AIT101/A IT103	ATATURK PRINCIPLES and REFORMS for TURKISH STUDENTS I	2													
	YIT102/T UR102	TURKISH LANGUAGE for INTERNATIONAL STUDENTS	2													
3. YEAR/ 2. SEMESTER	AII005	INTERNET PROGRAMMING	5	2	1	3	3	2	2	1	2	4	3	3	1	2
	AII303	DATA COMMUNICATIONS and COMPUTER NETWORKS	5	1	4	3	1	2	1	2	4	2	2	2	1	2

	SWE302	SOFTWARE QUALITY ASSURANCE and TESTING	4	2	1	3	2	4	1	2	1	3	3	3	2	3
	SWE304	SOFTWARE REQUIREMENTS ANALYSIS	4	2	1	2	2	5	2	2	1	2	4	3	2	4
	SWE396	ADVANCED OBJECT ORIENTED PROGRAMMING II	4	2	1	4	5	2	1	1	1	4	3	3	1	3
	AIT102/A IT104	ATATURK PRINCIPLES and REFORMS for TURKISH STUDENTS II	2													
	SWE399	SUMMER TRAINING II	6	2	2	2	2	3	1	1	1	3	5	4	2	3
4. YEAR/1. SEMESTER	AII430	PRINCIPLES of INFORMATION SECURITY	6	1	1	1	1	2	1	5	1	2	1	2	1	3
	SWE491	GRADUATION PROJECT I	4	3	1	3	2	4	1	1	1	3	5	4	2	4
	TE	TECHNICAL ELECTIVE	5													
	TE	TECHNICAL ELECTIVE	5													
	TE	TECHNICAL ELECTIVE	5													
	TE	TECHNICAL ELECTIVE	5													
4. YEAR/2. SEMESTER	AII429	ENGINEERING ETHICS	6	1	1	1	1	5	1	1	1	2	4	3	3	5
	AII426	ECONOMICS FOR ENGINEERS	6	3	2	3	2	1	2	2	1	2	3	4	3	3
	SWE492	GRADUATION PROPECT II	7	3	1	3	2	4	1	1	1	3	5	4	2	4
	SWE401	SOFTWARE PROJECT MANAGEMENT	6	1	1	1	1	5	1	1	1	2	5	3	2	4
	TE	TECHNICAL ELECTIVE	5													

Total Course: 52 Total ECTS: 240NOTE: In the matrix, 1 represents 'very low', 2 'low', 3 'medium', 4 'high', and 5 'very high' contributions.

8.COURSE LIST

8.1. Distribution Tables of Core and Elective Courses by Semester for the Program

A) Semester-wise Distribution of Courses

	1st Semester						
CODE	COURSE NAME	DERS ADI	C/E	T	P	C	E
CHM101	GENERAL CHEMISTRY	GENEL KİMYA	C	3	2	4	5
AII102	PROGRAMMING AND PROBLEM SOLVING	PROGRAMLAMA VE PROBLEM ÇÖZME	C	3	2	4	5
ENG101	ENGLISH I	İNGİLİZCE I	C	3	0	3	3
MTH101	CALCULUS I	MATEMATİK I	C	4	0	4	5
MTH113	LINEAR ALGEBRA	DOĞRUSAL CEBİR	C	3	0	3	5
PHY101	PHYSICS I	FİZİK I	C	3	2	4	5
CAM100	CAMPUS ORIENTATION	KAMPÜSE UYUM	C	2	0	0	2
Total				21	6	22	30

	2nd Semester						
CODE	COURSE NAME	DERS ADI	C/E	T	P	C	E
AII108	OBJECT ORIENTED PROGRAMMING	NESNE YÖNÜMLÜ PROGRAMLAMA	C	2	2	3	6
ENG102	ENGLISH II	İNGİLİZCE II	C	3	0	2	3
MTH102	CALCULUS II	MATEMATİK II	C	4	0	4	6
AII104	DISCRETE STRUCTURES	AYRIK YAPILAR	C	3	0	3	5
PHY102	PHYSICS II	FİZİK II	C	3	2	4	6
CAR100	CAREER PLANNING	KARİYER PLANLAMA	C	2	0	0	2
GEC351	21st CENTURY SKILLS	21.yy BECERİLERİ	E	2	0	0	2
Total				19	4	16	30

	3rd Semester						
CODE	COURSE NAME	DERS ADI	C/E	T	P	C	E
AII201	DATA STRUCTURES AND ALGORITHMS	VERİ YAPILARI VE ALGORİTMALAR	C	3	2	4	6
AII001	LOGIC DESIGN	SAYISAL MANTIK	C	3	2	4	6
SWE234	HUMAN COMPUTER INTERACTION	İNSAN BİLGİSAYAR ETKİLEŞİMİ	C	3	0	3	4
MTH251	PROBABILITY AND STATISTICS	OLASILIK VE İSTATİSTİK	C	3	0	3	6
AII003	PRINCIPLES OF SOFTWARE ENGINEERING	YAZILIM MÜHENDİSLİĞİNİN PRENSİPLERİ	C	3	0	3	6
CHC100	CYPRUS HISTORY AND CULTURE	KIBRIS KÜLTÜRÜ VE TARİHİ	E	2	0	0	2
Total				17	4	17	30

	4th Semester						
CODE	COURSE NAME	DERS ADI	C/E	T	P	C	A
AII203	COMPUTER ORGANISATION AND ARCHITECTURE	BİLGİSAYAR ORGANİZASYONU VE MİMARISI	C	3	2	4	5
AII202	DATABASE SYSTEMS	VERİTABANI YÖNETİM SİSTEMLERİ	C	3	2	4	5
SWE202	SOFTWARE CONSTRUCTION	YAZILIM YAPIMI	C	2	2	3	4
ENG201	ORAL COMMUNICATION SKILLS	SÖZLÜ İLETİŞİM BECERİLERİ	C	3	0	3	3
YIT101/T UR101	TURKISH LANGUAGE FOR INTERNATIONAL/TURKISH II STUDENTS	YABANCILAR İÇİN TÜRKÇE I/TÜRK DİLİ I	C	2	0	2	2
AII427	INTRODUCTION TO MANAGEMENT	YÖNETİME GİRİŞ	E	3	0	3	5
SWE299	SUMMER TRAINING I	STAJ I	C	0	0	0	6
Total				16	6	19	30

	5th Semester						
CODE	COURSE NAME	DERS ADI	C/E	T	P	C	E
AII302	OPERATING SYSTEMS	İŞLETİM SİSTEMLERİ	C	3	0	3	6
SWE395	ADVANCED OBJECT ORIENTED PROGRAMMING	GELİŞMİŞ NESNE YÖNELİMLİ PROGRAMLAMA I	C	3	0	3	4
AII311	MANAGEMENT INFORMATION SYSTEMS FOR ENGINEERS	MÜHENDİSLER İÇİN YÖNETİM BİLİŞİM SİSTEMLERİ	C	4	0	4	7
SWE301	SOFTWARE DESIGN AND ARCHITECTURE	YAZILIM TASARIMI VE MİMARISI	C	3	2	4	5
AII439	OCCUPATIONAL HEALTH AND SAFETY	İŞ SAĞLIĞI VE GÜVENLİĞİ	C	2	0	2	4
AIT103/AIT101	ATATURK'S PRINCIPLES AND REFORMS FOR TURKISH STUDENTS I	ATATÜRK İLKELERİ VE İNKILAP TARİHİ	C	2	0	2	2
YIT102/TUR102	TURKISH LANGUAGE FOR INTERNATIONAL II/TURKISH II STUDENTS	YABANCILAR İÇİN TÜRKÇE II/TÜRK DİLİ II	C	2	0	2	2
Total				19	2	20	30

	6th Semester						
CODE	COURSE NAME	DERS ADI	C/E	T	P	C	E
AII005	INTERNET PROGRAMMING	İNTERNET PROGRAMLAM A	C	3	0	3	5
AII303	DATA COMMUNICATIONS AND COMPUTER NETWORKS	VERİ İLETİŞİMİ VE BİLGİSAYAR AĞLARI	C	3	2	4	5
SWE302	SOFTWARE QUALITY ASSURANCE AND TESTING	YAZILIM KALİTE GÜVENCESİ VE TESTİ	C	2	2	3	4
SWE304	SOFTWARE REQUIREMENTS ANALYSIS	YAZILIM GEREKSİNİM ANALİZİ	E	2	2	3	4
SWE396	ADVANCED OBJECT ORIENTED PROGRAMMING II	GELİŞMİŞ NESNE YÖNELİMLİ PROGRAMLAM A II	C	3	0	3	4
AIT104/AIT102	ATATURK'S PRINCIPLES AND REFORMS FOR TURKISH STUDENTS II	ATATÜRK İLKELERİ VE İNKILAP TARİHİ II	C	2	0	2	2
SWE399	SUMMER TRAINING II	STAJ II	C	0	0	0	6
Total				15	6	18	30

	7th Semester						
CODE	COURSE NAME	DERS ADI	C/E	T	P	C	E
AII430	PRINCIPLES OF INFORMATION SECURITY	BİLGİ GÜVENLİĞİ İLKELERİ	E	3	0	3	6
SWE491	GRADUATION PROJECT I	BİTİRME PROJESİ I	C	2	0	2	4
TE	TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	E	3	0	3	5
TE	TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	E	3	0	3	5
TE	TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	E	3	0	3	5
TE	TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	E	3	0	3	5
Total				17	0	17	30

	8th Semester						
CODE	COURSE NAME	DERS ADI	C/E	T	P	C	E
AII429	ENGINEERING ETHICS	MÜHENDİSLİK ETİĞİ	E	3	0	3	6
AII426	ECONOMICS FOR ENGINEERS	MÜHENDİSLER İÇİN EKONOMİ	E	3	0	3	6
SWE492	GRADUATION PROJECT II	BİTİRME PROJESİ II	C	4	0	4	7
SWE401	SOFTWARE PROJECT MANAGEMENT	YAZILIM PROJE YÖNETİMİ	E	2	0	3	6
TE	TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	E	3	0	3	5
Total				15	0	16	30

B) Types and Number of Elective Courses

COURSE CODE	COURSE NAME	THEORY	PRACTICE	CREDIT	ECTS
AII431	E-COMMERCE	2	2	3	5
AII412	DATABASE APPLICATION	2	2	3	5
AII002	SYSTEM SIMULATION	2	2	3	5
AII404	NEURAL NETWORKS	2	2	3	5
AII419	IMAGE PROCESSING	2	2	3	5
AII402	COMPUTER GRAPHICS	2	2	3	5
AII405	COMPUTER HARDWARE	2	2	3	5
AII406	SYSTEM PROGRAMMING	2	2	3	5
AII413	INTRODUCTION TO ARTIFICIAL INTELLIGENCE	2	2	3	5
AII417	MOBILE PROGRAMMING	2	2	3	5
AII408	ADVANCED OBJECT ORIENTED PROGRAMMING	2	2	3	5
AII409	OBJECT ORIENTED PROGRAMMING II	2	2	3	5
AII407	PROGRAMMING LANGUAGES II	2	2	3	5
AII415	DECISION MAKING	2	2	3	5
AII006	WEB DESIGN and PROGRAMMING	2	2	3	5
AII007	MULTIMEDIA SYSTEMS	2	2	3	5
AII430	PRINCIPLES of INFORMATION SECURITY	3	0	3	6
AII427	INTRODUCTION to MANAGEMENT	3	0	3	5

AII426	ECONOMICS FOR ENGINEERS	3	0	3	5
AII429	ENGINEERING ETHICS	3	0	3	6
AII461	FUNDAMENTALS OF GENERATIVE ARTIFICIAL INTELLIGENCE	3	0	3	5
SWE482	SOFTWARE ENGINEERING TRENDS	3	0	3	5
SWE401	SOFTWARE PROJECT MANAGEMENT	2	0	3	6
SWE304	SOFTWARE REQUIREMENTS ANALYSIS	2	2	3	4
SWE488	SOFTWARE IMPLEMENTATION	2	2	3	5

C) ECTS (European Credit Transfer and Accumulation System) Information and Local Credits

The Software Engineering Bachelor's Program comprises a four-year (eight-semester) undergraduate education with a total of 240 ECTS credits. The ECTS load for each semester is planned as 30 ECTS, in alignment with the student's expected workload. The program's total local credit is within the range of 120–160 credits, meeting the standards set by the Council of Higher Education (YÖK) for undergraduate programs. The ECTS value of each course is presented in detail in the relevant semester-based course distribution tables.

D) Course Code, Title, and Status

SEMESTER I (FALL)

Programming and Problem Solving

(Course type: required; Course code: AII102; Cr: 4; ECTS: 5)

Course objective: The aim of this course is to provide an introduction to fundamental concepts of programming.

Course content: This course provides a use of built-in data structures in solving problems using the Python general-purpose programming language. In this course, students study how to write user-defined functions using iteration as well as recursion.

This course also stresses the importance of programming tools such as programming editors and debuggers. The students are expected to work within a GNU/Linux environment. The course provides a basic introduction into object-oriented programming.

General Chemistry

(Course type: required; Course code: CHM101; Cr: 4; ECTS:5)

Course objective: The aim of this course is to provide the basic concepts of chemistry and main elements of its content.

Course content: A basic course emphasizing the metric system. Introduction to atomic theory, stoichiometry. The structural and physical properties of matter. Periodic relationship among elements and periodic table. Gaseous state. Thermo-chemistry. Energy and enthalpy. Electronic structure of atoms. Chemical bonding.

English I

(Course type: required; Course code: ENG101; Cr: 3; ECTS: 3)

Course objective: This course aims at enabling students to understand their lessons and to express themselves in English

Course content: This course offers intermediate levels including a wide range of grammatical structures and vocabulary of English in order to build onto the foundation established at the Preparatory School. This course aims to bring the students to a level that will enable them to fulfil the requirements of main courses of their departments. Students will be encouraged to read a variety of texts as well as chapters from textbooks so that they can pursue their undergraduate studies at the university without major difficulty. ENG 101 is designed to improve the students' presentation ability. Students are expected to do an oral presentation. At the end of the course they submitted their written projects.

Calculus I

(Course type: required; Course code: MTH101; Cr: 4; ECTS: 5)

Course objective: The primary aims of the course are to help students develop new problem solving and critical reasoning skills and to prepare them for further study in mathematics, the physical sciences, or engineering.

Course content: Functions, limits and continuity. Derivatives. Mean value theorem. Sketching graphs. Definite integrals, infinite integrals (antiderivatives). Logarithmic, exponential, trigonometric and inverse trigonometric functions and their derivatives. L'Hospital's rule. Techniques of integration. Applications of the definite integral, improper integrals.

Physics I

(Course type: required; Course code: PHY101 Cr: 4; ECTS: 5)

Course objective: The goal of physics is to understand how things work from first principles.

Course content: Measurement, vectors, kinematics, force, mass. Newton's laws, applications of Newton's laws. Work and kinetic energy. Conservation of linear momentum. Impulse, collisions, rotation, moments of inertia. Torque, angular momentum, conservation of angular momentum, static equilibrium.

Linear Algebra

(Course type: required; Course code: MTH113 Cr: 3; ECTS: 5)

Course objective: This course aims to teach Systems of linear equations and Matrices.

Course content: Systems of linear equations and Matrices: elementary row operations, echelon forms, Gaussian elimination method, matrices and matrix operations, invertible matrices, diagonal, triangular and symmetric matrices. Determinants: determinants by cofactor expansion, evaluating determinants by row reduction, adjoint and inverse matrices, Cramer's rule. Euclidean vector spaces: Euclidean n -space, linear transformation from $\mathbb{R}^n$ to $\mathbb{R}^m$. General vector spaces: Real vector spaces, subspaces, linear independence, basis and dimensions, row space, column space, and null space, rank and nullity. Inner product spaces: inner products, orthogonality in inner product spaces, orthonormal bases, Cauchy-Schwarz inequality, Gram-Schmidt orthogonalization, change of bases, orthogonal matrices. Eigenvalues and eigenvectors: Eigenvalues and eigenvectors, diagonalization, orthogonal diagonalization.

Campus Orientation

(Course type: required; Course code: CAM100 Cr: 0; ECTS:2)

CAM100 is a foundational course designed to help new students transition into university life at Near East University. Through interactive activities, presentations, and educational videos, students will explore the university's history, academic and social opportunities, and the support services available on campus. Key topics include developing effective academic habits, understanding university regulations, fostering social and cultural integration, and embracing the role of academic research. This course is essential for building a strong foundation for academic success and personal growth within the university environment.

SEMESTER II (SPRING)

Object Oriented Programming

(Course type: required; Course code: AII108; Prerequisite: AII102; Cr: 3; ECTS: 6)

Course objective: This course provides an in-depth discussion of object-oriented programming and how object-oriented programming can be used in solving real-life problems.

Course content: This course requires a more advanced use of programming tools (mainly editors and debuggers) that were introduced in ECC102 (Programming and Problem Solving). This course uses Python 3 to teach the fundamental concepts of object-oriented programming. The students are expected to work within a GNU/Linux environment. The course builds upon the knowledge of ECC102 and ECC201 and is the third course in line that uses Python as a programming language. The students who wish to take this course are expected to have a good understanding of basic Python programming, data structures and algorithms.

Calculus II

(Course type: required; Course code: MTH102; Prerequisite: MTH101; Cr: 4; ECTS: 6)

Course objective: The aim of this course is to offer the basic fundamentals of needs to apply the principles of mathematical logic, and to use proof techniques such as induction, and to reason about the efficiency of an algorithm.

Course content: Plane and polar co-ordinates, area in polar co-ordinates, arc length of curves. Limit, continuity and differentiability of function of several variables, extreme values, method of Lagrange multipliers. Double integral, triple integral with applications. Line integrals, Green's theorem. Sequences, infinite series, power series, Taylor's series. Complex numbers.

Discrete Structures

(Course type: required; Course code: AII104; Cr: 3; ECTS: 5)

Course objective: The aim of this course is to offer the basic fundamentals of needs to apply the principles of mathematical logic, and to use proof techniques such as induction, and to reason about the efficiency of an algorithm.

Course content: Sets and Logic, Proofs, Functions, Sequences and Relations, Algorithms, Introduction to Number Theory, Counting Methods and the Pigeonhole Principle, Recurrence Relations, Graph Theory, Trees, Network Models, Boolean Algebras and Combinatorial Circuits, Automata, Grammars and Languages, Computational Geometry.

English II

(Course type: required; Course code: ENG102; Prerequisite: ENG101; Cr: 3; ECTS:3)

Course objective: This course aims to bring the students to a level that will enable them to fulfil the requirements of the main courses of the departments.

Course content: This course offers the students a wide range of grammatical structures and key language and vocabulary of English in the technical, industrial, and scientific sectors at intermediate level for everyday communication at work. The ability to evaluate, analyze and synthesize information in written discourse will be highlighted. Documentation in writing will be introduced at the beginning of the course, in order to solidly establish the skill by the end. Students will learn the discourse patterns and structures to be used in different essay types that they need for real life, hands-on tasks like explaining processes, organizing schedules, reporting or progress, or analyzing risk.

Physics II

(Course type: required; Course code: PHY102; Prerequisite: PHY101; Cr: 4; ECTS:6)

Course objective: This course aims to bring the students to a level that will enable them to understand how things work from an electrical point of view.

Course content: Electrical charges. Coulomb's law. Electrical fields. Gauss's law. Electrical potential. Capacitance and dielectrics. Current and resistance. Direct current circuits. Magnetic fields. Sources of the magnetic field. Faraday's law of induction. Inductance and inductors.

CAR100 Career Planning

CAR100 is a foundational course aimed at equipping students with essential career planning skills to navigate the dynamic professional world. Students will explore career development models, learn effective job search techniques, and master the art of CV and cover letter writing. The course emphasizes self-awareness, effective communication, professional networking, and interview preparation. By aligning personal interests, values, and strengths with career goals, students will be empowered to adapt to evolving economic, social, and cultural landscapes and develop a lifelong learning mindset for career success.

SEMESTER III (FALL)

Data Structures and Algorithms

(Course type: required; Course code: All201; Prerequisite: All108; Cr: 4; ECTS: 6)

Course objective: This course aims to offer understanding the algorithm and data structures used for some problem is much more important than knowing the exact code for it in some programming language.

Course content: This course comprises an introductory exploration into the design and implementation of Abstract Data Types (ADTs) along with the study of algorithm design and complexity analysis. Even though the discussions during lectures about ADTs are language independent, this course uses Python, a very high-level general programming language, to implement these ideas using object-oriented programming. This class starts with a brief introduction to object-oriented programming.

Logic Design

(Course type: required; Course code: All001; Prerequisite: All104; Cr: 4; ECTS: 6)

Course objective: This course aims to offer understanding of basic EE abstractions on analysis and design of electrical and electronic circuits and systems. Also, the capability to use abstractions to analyze and design simple electronic circuits.

Course content: Digital Systems and Information, Combinational Logic Circuits, Combinational Logic Design, Arithmetic Functions and HDLs, Sequential Circuits, Selected Design Topics, Registers and Register Transfers, Memory Basics, Computer Design Basics, Instruction Set Architecture, RISC and CISC Processors, Input-Output and Communication, Memory Systems.

Probability and Statistics

(Course type: required; Course code: MTH251; Prerequisite: MTH113; Cr: 3; ECTS: 6)

Course objective: The aim of the course is to provide information to create, simulate, and analyze elementary probability models and to explain the limitations of the statistical inferences made therefrom.

Course content: Statistics, Data and Statistical Thinking, Methods for Describing Sets of Data, Probability, Random Variables and Probability Distributions, Inferences Based on Samples, Design of Experiments and Analysis of Variance, Categorical Data Analysis, Simple Linear Regression, Multiple Regression and Model Building, Methods for Quality Improvement: Statistical Process Control, Time Series, Nonparametric Statistics.

CHC100

Cyprus History and Culture

CHC100 is a comprehensive course designed for first-year students to explore the rich historical, cultural, and social heritage of Cyprus. This course covers the island's geography, biodiversity, and historical periods, from prehistoric times to modern developments. It delves into the Ottoman and British colonial influences, the evolution of education, art, and literature, and the socio-political dynamics that shaped the island's identity. Students will gain a deep understanding of the Mediterranean's cultural interplay and Cyprus's role as a bridge between East and West, fostering an appreciation for its unique heritage and environment.

Software Engineering

(Course type: required; Course code: AII003; Prerequisite: AII104; Cr: 3; ECTS: 6)

Course objective: The objective of the course is to provide the student with necessary background of software engineering, principles and programming.

Course content: Principles of software engineering: Requirements, design and testing. Review of principles of object orientation. Object oriented analysis using UML. Frameworks and APIs. Introduction to the client-server architecture. Analysis, design and programming of simple servers and clients. Introduction to user interface technology.

Technical Report Writing and Presentation

(Course type: required; Course code: ENG201; Prerequisite: ENG102; Cr: 3; ECTS: 4)

Course objective: This course aims to offer critical technical writing and presentation skills for students for their future and professional lives.

Course content: To reinforce and consolidate the language and 4 skills that students have learned from earlier courses, as well as developing their level of knowledge, communicative capacity, and ability to analyse and reflect on language. Courses on upper -intermediate AND ADVANCED levels include interesting and up-to-date topics, encouraging students to recognize the importance of acquiring a foreign language in a modern context; prepare them to for their future professional life.

Advanced Object Oriented Programming

(Course type: required; Course code: SWE395; Cr: 3; ECTS: 4)

Course objective: In this course, students will have theoretical and practical knowledge about Java Programming and will have the opportunity to transfer this knowledge to the applications they develop.

Course content: Able to understand related concepts/theories, Will be able to apply related concepts/theories to real life/other given situations/cases, Will be able to

develop/create a new approach, Will be able to develop/create a new product within the given parameters. Count and explain related concepts.

SEMESTER IV (SPRING)

Computer Architecture and Organisation

(Course type: required; Course code: AII203; Prerequisite: AII001; Cr: 4; ECTS: 5)

Course objective: The main objective of this subject is to understand the overall basic computer hardware structure, including the peripheral devices.

Course content: Introduction to computers. Micro-programming control. Memory organization. Input/output system. Non-standard computer architectures, pipeline, RISC and vector computers.

Database Systems

(Course type: required; Course code: AII202; Prerequisite: AII201; Cr: 4; ECTS: 5)

Course objective: This course aims to cover fundamentals of database architecture, database management systems, and database systems. Principles and methodologies of database design, and techniques for database application development.

Course content: Introduction to Databases, Relational Data Model and SQL, Conceptual Modeling and Database Design, Models, Database Programming Techniques, Database Normalization Theory, File Structures-Indexing and Hashing, Query Processing-Optimization and Database Tuning, Transaction Processing-Concurrency Control and Recovery, Security and Distribution, Advanced Database Models-Systems and Applications

Software Construction

(Course type: required; Course code: SWE202; Prerequisite: AII003; Cr: 3; ECTS: 4)

Course objective: This course aims to engage students with concepts related to the construction of software systems at scale, building on their understanding of the basic building blocks of data structures, algorithms, program structures, and computer structures.

Course content: General principles and techniques for disciplined low-level software design. BNF and basic theory of grammar and parsing. Use of parser generators. Basics of language and protocol design. Formal languages. State-transition and table-based software design. Formal methods for software construction. Techniques for handling concurrency and inter-process communication. Techniques for designing numerical software. Tools for model-driven construction. Introduction to Middleware. Hot-spot analysis and performance tuning.

Human Computer Interaction

(Course type: required; Course code: SWE234; Cr: 3; ECTS: 3)

Course objective: The main objective is to perform analysis, establish requirements, design and evaluate interactive computer-based systems and products. The purpose of this course is to give the student basic knowledge about human-computer interaction. It will discuss how to understand human cognition and human perspective by working with computers.

Course content: Psychological principles of human-computer interaction. Evaluation of user interfaces. Usability engineering. Task analysis, user-centred design, and prototyping. Conceptual models and metaphors. Software design rationale. Design of windows, menus, and commands. Voice and natural language I/O. Response time and feedback. Colour, icons, and sound. Internationalization and localization. User interface architectures and APIs. Case studies and projects.

YİT101

Turkish as a Foreign Language I (for non-natives)

The course is designed for students who are interested in learning about other cultures and languages, and who have no previous knowledge of Turkish language. This course mainly introduces the student to the Turkish language, through the development of the basic skills: listening, speaking, reading and writing. Also included is an examination of Turkish culture through an exploration of its historical roots and its most significant social, literary and artistic trends. The ultimate goal of the course is that students will gain awareness and appreciation of and insight into Turkish culture.

SWE299

Summer Practice I (Course type: required) (0 Credits)

Course objective: This course provides real working life experience for students. Students will be able to apply their theoretical knowledge into practice.

Course content: A minimum of 20 working days for this practice is required in a manufacturing or service organization. This one can involve 20 working days minimum.

Prerequisite: --

SEMESTER V (FALL)

Operating Systems

(Course type: required; Course code: AII302; Prerequisite: AII201; Cr: 3; ECTS: 6)

Course objective: This course intends to generally understand the structure of modern computers, purpose, structure and functions of operating systems, and illustration of key OS aspects by example.

Course content: Principles of operating systems. Memory management. Multiprocessing. Virtual memory concepts. Memory protection. Scheduling. Process management. Time-slicing and priorities, deadlocks and process synchronization. Peripheral control. Filing system management. Resource control and monitoring. Linux and Windows Operating Systems.

Management Information Systems

(Course type: required; Course code: All311; Prerequisite: All427; Cr: 4; ECTS: 7)

Course objective: This course aims to offer the roles played by information technology in today's business and define various technology architectures on which information systems are built. Define and analyze typical functional information systems and identify how they meet the needs of the firm to deliver efficiency and competitive advantage.

Course content: This course covers management principles and managerial functions; organization and its interaction with the environment; marketing management; production management; personnel (human resources) management; managerial control; and budgeting and control within the framework of accounting and financial reports.

Software Design and Architecture

(Course type: required; Course code: SWE301; Prerequisite: SWE202; Cr: 4; ECTS:6)

Course objective: The main aim of this course is to familiarize with concepts and methods of software design and architecture, learn how to perform architectural design and OO design and basic project management tasks using examples, and experience design and architecture in a larger project.

Course content: An in-depth look at software design. Continuation of the study of design patterns, frameworks, and architectures. Survey of current middleware architectures. Design of distributed systems using middleware. Component based design. Measurement theory and appropriate use of metrics in design. Designing for qualities such as performance, safety, security, reusability, reliability, etc. Measuring internal qualities and complexity of software. Evaluation and evolution of designs. Basics of software evolution, reengineering, and reverse engineering.

YIT102

Turkish for Foreigners II (course type: only for Foreign Students) (2 Credits)

Course objective: The aim of this course is to introduce Turkish Language for Foreign Students of NEU.

Course Content: Vocabulary of the Turkish (Recognition of words as words, relations between words), sentence information (sentence organizations, general structure and sentence types), reading-writing (reading rules and writing techniques, spelling rules, comprehension of speech and writing language, spelling rules.), reading comprehension (reading comprehension techniques, texts), applications on the texts suitable for their own professions. speech (learning the techniques of speech, specific emphasis, learning of the forms such as intonation on appropriate texts)

Prerequisite: YIT101

All439 - Occupational Health and Safety (course type: compulsory) (2 Credits – 4 ECTS)

Course objective: To provide students with essential knowledge and awareness of workplace health and safety principles, regulations, and practices to promote a safe working environment.

Course Description: This course introduces the fundamental concepts of occupational health and safety, including hazard identification, risk assessment, accident prevention, safety regulations, and emergency procedures. It aims to develop students' understanding of the responsibilities of employers and employees in ensuring workplace safety and compliance with legal standards.

SEMESTER VI (SPRING)

Internet Programming

(Course type: required; Course code: All005; Prerequisite: All004; Cr: 3; ECTS: 5)

Course objective: The main aim of this course is to be familiar with the main uses of the Internet as the primary modern technology for online communication, understand the generic principles of computer programming as applied to implementing basic web-based applications.

Course content: Internet concepts. HTML programming principles. Graphical User Interface design principles. Using ASP to develop internet applications. Uploading and testing internet applications.

Advanced Object Oriented Programming II

(Course type: required; Course code: SWE396; Cr: 3; ECTS: 4)

Course objective: Will be able to explain/define the determined concept/concepts Will be able to develop the selected/determined skills.

Course content: In this course, students will gain theoretical and practical knowledge about C# Programming and will have the opportunity to transfer this knowledge to the applications they develop.

Data Communications and Networking

(Course type: required; Course code: AII303; Prerequisite: AII001; Cr: 4; ECTS: 5)

Course objective: This course aims to provide the knowledge and skills required to design, model and effectively operate secure and dependable digital IP-based networks. It will provide an opportunity to gain a sound understanding of the internet protocol suite that forms the core for current data networks. The fusion of the internet world and multimedia is also addressed, as well as wireless communications.

Course content: Introduction to Computer Networks and Data Communications, Fundamentals of Data and Signals, Conducted and Wireless Media, Making Connections, Making Connections Efficient, Errors, Error Detection and Error Control, Local Area Networks, Introduction to Metropolitan Area Networks and Wide Area Networks, The Internet, Voice and Data Delivery Networks, Network Security, Network Design and Management.

Software Quality Assurance and Testing

Course type: required; Course code: SWE302; Prerequisite: SWE301; Cr: 4; ECTS: 4)

Course objective: The aim of this course is to inform the students about Understanding the fundamental concepts and theory of Software testing and Software Quality Management Implement process that ensures the Software is developed with good quality standards.

Course content: Quality: how to assure it and verify it, and the need for a culture of quality. Avoidance of errors and other quality problems. Inspections and reviews. Testing, verification and validation techniques. Process assurance vs. Product assurance. Quality process standards. Product and process assurance. Problem analysis and reporting. Statistical approaches to quality control.

Software Requirements Analysis

Course type: required; Course code: SWE304 Prerequisite: SWE301; Cr: 3; ECTS: 4)

Course objective: The aim of this course is to understand the fundamental concepts of software requirements for implementation processes of a software development.

Course content: Domain engineering. Techniques for discovering and eliciting requirements. Languages and models for representing requirements. Analysis and

validation techniques, including need, goal, and use case analysis. Requirements in the context of system engineering. Specifying and measuring external qualities: performance, reliability, availability, safety, security, etc. Specifying and analyzing requirements for various types of systems: embedded systems, consumer systems, web-based systems, business systems, systems for scientists and other engineers. Resolving feature interactions. Requirements documentation standards. Traceability. Human factors. Requirements in the context of agile processes. Requirements management: Handling requirements changes.

Summer Practice (course type: required; course code: SWE399)

Course objective: This course provides real working life experience for students. Students will be able to apply their theoretical knowledge into practice.

Course content: A minimum of 40 working days for this practice is required in a manufacturing or service organization.

AIT102 - Ataturk's Principles and Reforms II (course type: compulsory - only for Turkish Students) (2 Credits – 2 ECTS)

Course objective: The aim of this course is to give a detailed introduction to the Turkish Republic's History for Turkish students.

Course Content: General situation before the 1st World War, Kurtulus War and manner of Ottoman Empire, Occupations, Ataturk and liberation of Samsun on 19 May 1919, Ataturk's life and personal characteristics, and various features and reforms.

SEMESTER VII (FALL)

Principles of Information Security Course type: required; Course code: AII430; Prerequisite: AII303; Cr: 3; ECTS:6)

Course objective: The aim of this course is to provide an understanding of the key themes and principles of information security and be able to apply these principles in designing solutions to managing security risks effectively. Also, understand how to apply the principles of information security in a variety of contexts.

Course content: Introduction to Information Security, The Need for Security, Legal, Ethical, and Professional Issues in Information Security, Risk Management, Planning for Security, Security Technology, Cryptography, Physical Security, Implementing Information Security, Security and Personnel, Information Security Maintenance.

Graduation Project I

Course type: required; Course code: SWE491; Cr: 2; ECTS: 3)

Course objective: This course aims that each student must choose an individual topic or theme on which he/she would like to do a scientific research project.

Course content: In this course every student will do a project in the industrial engineering area to apply their technical knowledge and develop their professional abilities.

All427 - Management for Engineers (course type: elective) (3 Credits – 5 ECTS)

Course objective: This course comprises an introductory exploration of Management.

Course Content: Principles of management. Functions of managers. Organisation and environment. Marketing management. Production management. Personnel management. Managerial control. Accounting and financial reports. Budgeting and overall control.

SEMESTER VIII (SPRING)

Graduation Project II (Course type: required; Course code: SWE492; Prerequisite: SWE491; Cr: 4; ECTS: 4)

Course objective: This course aims to critically evaluate and assess the student's projects via oral presentations and written technical reports.

Course content: This course is the second part of the Graduation Project. In this course every student will do a project in the industrial engineering area to apply their technical knowledge and develop their professional abilities.

Software Project Management

(Course type: required; Course code: SWE401; Cr: 3; ECTS: 6)

Course objective: The aim of this course is to deliver successful software projects that support organization's strategic goals and match organizational needs to the most effective software development model, as well as develop the skills for tracking and controlling software deliverables.

Course content: Project planning, cost estimation, and scheduling. Project management tools. Factors influencing productivity and success. Productivity metrics. Analysis of options and risks. Planning for change. Management of expectations. Release and configuration management. Software process standards and process implementation. Software contracts and intellectual property. Approaches to maintenance and long-term software development. Case studies of real industrial projects.

TECHNICAL ELECTIVES:

All002 System Simulation (Course Type: Technical Elective) (3 Credits)

Course Objective: The aim of this course is to teach students how to use simulation as a tool for problem solving.

Course Content: Viewing simulation as a problem-solving tool. Simulation models and the classification of simulation techniques. Discrete and continuous system structures. Stages of a simulation experiment. Simulation experiments with random events and sequencing systems. Simulation languages and their characteristics. Examples of simulation programming.

All404 Neural Networks (course type: elective) (3 Credits)

Course Objective: Teaching the basics of neural networks. To illustrate the basic applications of neural networks using Matlab. To give the principles of neural networks approaches.

Course Content: The Neural network paradigm and fundamentals. Training by error minimization. Back propagation algorithms. Feedback and recurrent networks. Hopfield network, Genetic algorithms. Probability and neural networks. Optimizations and constraints.

All406 System Programming (course type: elective) (3 Credits)

Course Objective: To study the function of the common operating system kernel routines that are provided by an operating system and accessible from a systems programming language. Design, write, and test moderately complicated low-level programs using a systems programming language. Proficiently use a preprocessor to implement code that is portable between different computing platforms. Use operating system kernel calls from within a programming language to allocate/free virtual memory, initiate and synchronize multiple threads/processes, interact with the file system, set and respond to timers/interrupts.

Course Content: Introduction to system programming, operating systems and fundamental concepts of programming language processors, one and two pass assemblers, symbol tables, compilers and compiler design, parsing, syntax and semantic phases, optimization, relocatable and linkable loaders, operating systems design principles

All413 Introduction to Artificial Intelligence (course type: elective) (3 Credits)

Course Objective: The aim of this course is to introduce students to the fundamental concepts, methods, and application areas of artificial intelligence. Within the scope of

the course, students will understand basic AI approaches such as search strategies in artificial intelligence, fuzzy logic, neural networks, expert systems, and probabilistic reasoning. Students will also become familiar with different artificial intelligence programming languages and analyze how these approaches are applied to real-world problems.

Course Description: This course serves as an introduction to artificial intelligence and focuses on search strategies in AI, fuzzy logic and fuzzy sets, artificial neural networks and learning processes, the NeroSell program, expert systems, and programming languages for artificial intelligence. In addition, the course covers hybrid systems, probabilistic uncertainty reasoning, belief networks, and distributed artificial intelligence.

All408 Advanced Object Oriented Programming (course type: elective) (3 Credits)

Course Objective: Teaching object-oriented programming using C# (C sharp). To develop students' skills and dispositions regarding problem analysis and development of different projects using object oriented programming. To show the advantages of object oriented programming and visual programming in project development. To teach inheritance, multiple inheritance, polymorphism, operator overloading and implement them in examples using C sharp. Development of different programs using aggregation, delegates, Events. To teach the design of windows applications using object-oriented and visual programming.

Course Content: Modeling the real world using object-oriented software. Overview of the .NET Framework. Components and Languages in the .NET. Structure of a C# Program. Input/Output. Console class, Namespace, Generating Extensible Markup Language (XML) document. Data Types. Control Statements. Methods, Parameters. Overloaded Methods. C# and Object Orientation, Classes and Objects, Encapsulation, Constructors, Creating and Destroying Objects, Destructors, Inheritance, Interfaces, Aggregation, Namespaces, Modules, Operator Overloading, Delegates, Events. Windows Forms Class Hierarchy, Properties, Events, Controls, Dialogs, Menus, Multiple Document Interface, Data Access and Data Binding, DataGridView, ADO.NET, .NET Data Providers, Interacting with XML Data, .NET controls.

All409 Object-oriented Programming Language II (course type: elective) (3 Credits)

Course Objective: Design, compile and run Java applications and applets. Understand the role of the Java Virtual Machine in achieving platform independence. Use the Object Oriented paradigm in design of Java programs. Understand the division of classes into Java packages. Use exceptions to handle run time errors. Use threads in

order to create more efficient Java programs. Design Java applications with database access.

Course Content: Introduction to Java. Java and object-oriented programming. Introduce advanced Java concepts – inheritance, polymorphism, abstract classes, exception handling, use of collections and database connectivity. Gain more practical experience by designing and writing Java applications. Components of Java projects. Designing Graphic User Interface GUI. Java Internet applications. Java applets.

All417 Mobile Programming (course type: elective) (3 Credits)

Course objective: The aim of the course is to give the basics of mobile programming.

Course Content: Getting Mobile, Starting Your Mobile Site, Adapting to User Devices, Developing Standards- Compliant Sites, Sending Text Messages, Adding Spice to Messages: MMS, Making Money via Mobile Devices, Interactive Voice, Mobile AJAX, Mobile Web.

All407 PROGRAMMING LANGUAGES II (course type: elective) (3 Credits)

Course Objective: The aim of this course is to introduce students to the Delphi programming environment and its fundamental components. Within the scope of the course, students will gain knowledge and skills related to the organization of forms and units, the use of the Object Inspector, the role of code in Delphi, the use of the components palette, and the management of component properties. In addition, students will be able to develop basic database-driven and Windows-based applications.

Course Description: This course serves as an introduction to Delphi programming and covers the organization of forms and units, the structure and use of the Object Inspector, coding in Delphi, and component management. The course also includes the file structure of Delphi projects, text files, database formats, and the development of simple database applications. Furthermore, the integration of Windows-based applications into Delphi projects, data access methods, and the development of Access-based applications using DB Navigator are addressed.

All431 E-commerce (course type: elective) (3 Credits)

Course objective: The aim of the course is to prepare students for design e-commerce sites.

Course Content: Starting an E-Commerce Site, Laying Out the Foundations, Starting a Project, Creating the Product Catalog, Product Attributes, Search Engine Optimization,

Searching the Catalog, Receiving Payments Using PayPal, Catalog Administration, Creating Shopping Cart, Implementing AJAX Features, Accepting Customer Orders, Product Recommendations, Managing Customer Details, Storing Customer Orders, Implementing the Order Pipeline, Processing Credit Card Transactions, Product Reviews, Using Web Services.

All412 Database Application (course type: elective) (3 Credits)

Course Objective: The aim of this course is to provide students with fundamental knowledge and skills related to database concepts, database management systems, and the development of database applications.

Course Content: This course covers fundamental database concepts, the relational database model, the SQL language, table creation and management, data insertion, update and deletion operations, querying techniques, and the development of simple database applications.

Prerequisite: YZB202

Economics for Engineers

Course type: required; Course code: All426; Cr: 3; ECTS: 6)

Course objective: The aim of this course is to introduce key conceptual issues in economics. It analyses contemporary global business and finance topics for engineering.

Course content: Principles and economic analysis of engineering decision making. Cost concept. Economic environment. Price and demand relations. Competition. Make-versus-purchase studies. Principles and applications of money-time relations. Depreciation. Money and banking. Price changes and inflation. Business and company finance.

All006 - Web Design and Programming (course type: compulsory) (3 Credits – 4 ECTS)

Course objective: The aim of this course is to cover basic and advanced features of Web design.

Course Content: HTML Values and Units, Text Structuring Essentials, Character Formatting Essentials, Lists, Links, Tables, Frames, Forms, Colors and Images, Multimedia, Special Characters, Internationalization and Localization, Scripts, Dynamic HTML, Web Development Software, Publishing a Site, An Introduction to XML, Creating Mobile Documents, Tidying and Validating Documents, CSS Basics, Style

Definitions, CSS Values and Units, CSS Inheritance and Cascade, Font Properties, Text Formatting, CSS Lists, Padding, Margins, and Borders, Colors and Backgrounds, CSS Layouts, Pseudo-Elements and Generated Content, Dynamic HTML with CSS, Media Styles and Defining Documents for Printing, User Interface Styles, Testing and Validating CSS.

Prerequisite: AII102

AII007 - Multimedia Systems (course type: compulsory) (3 Credits – 4 ECTS)

Course objective: The aim of this course is to introduce students to Multimedia Systems.

Course Content: Introduction to Computer Science and Media Computation, Introduction to Programming in Jython, Modifying Pictures Using Loops, Modifying Pixels in a Range, Advanced Picture Techniques, Modifying Sounds Using Loops, Modifying Samples in a Range, Making Sounds by Combining Pieces, Building Bigger Programs, Creating and Modifying Text, Advanced Text Techniques: Web and Information, Making Text for the Web, Creating and Modifying Movies, Speed, Functional Programming, Object-Oriented Programming.

Prerequisite: AII102, MTH113

SWE482 SOFTWARE ENGINEERING TRENDS (Course type: elective) (3 Credits)

Course Objective: The aim of this course is to enable students to identify major emerging trends in software engineering technologies. Throughout the course, students will analyze the impact of new tools and methods on software development processes, discuss ethical, sustainability, and security issues in modern software systems, and evaluate the applications of emerging technologies in industry.

Course Description: This course explores emerging trends in software engineering, including cloud computing, artificial intelligence, blockchain, the Internet of Things (IoT), and automation of critical systems. Students will critically analyze current technologies shaping the software industry and evaluate their impact on real-world software applications.

SWE488 SOFTWARE IMPLEMENTATION (Course type: elective) (3 Credits)

Course Objective: The aim of this course is to provide students with both theoretical and practical knowledge related to software implementation. The course focuses on the software development lifecycle from an applied perspective, enabling students to gain competencies in coding practices, software quality assurance, testing

methodologies, and software security. Students will also analyze the impact of modern software tools and techniques on real-world applications.

Course Description: This course offers a practical and application-oriented approach to software implementation. It covers the software development lifecycle with an emphasis on coding standards, quality assurance, testing methodologies, and software security. Through case studies and hands-on examples, students will experience the design, development, and evaluation of software systems in real-world contexts.

All419 Image processing (Course type: elective) (3 Credits)

Course objective: The aim of this course is to introduce students to the fundamental techniques, concepts, and methods of image processing and image analysis. Students will learn the entire pipeline, from how an image is acquired to the processes of enhancing it, analyzing it, and extracting meaningful information such as objects and features.

Course Content: Imaging sensors and their principles, how images are digitally represented, stored, and compressed. Techniques for noise reduction and improving image clarity through contrast manipulation, histogram equalization, and edge highlighting. Mathematical techniques for image processing, including two-dimensional Fourier transforms, wavelets, and convolution. Methods for partitioning an image into meaningful regions (e.g., object and background) using techniques like thresholding. Morphological Operations. Feature Extraction. Object Recognition and Tracking.

All415 Decision Making (Course type: elective) (3 Credits)

Course objective: The fundamental aim of this course is to provide students with a comprehensive understanding of the theory and practice of the decision-making process. It aims to equip them with the necessary knowledge and skills to make the most effective and sound decisions in both individual and group settings by making them competent in analyzing situations involving risk and uncertainty, utilizing critical thinking, and applying quantitative models such as decision trees.

Course Content: Introduction to decision making. Decision making process. Decision making under uncertainty. Utility theory. Risk theory, under uncertainty. Risk aversion. Decision making under conflict. Queuing theory. Decision Trees. Decision Trees. Under uncertainty. Multiple regression models. Exponential smoothing. Group decision making. Linear regression model and correlation. Time series. Forecast accuracy. Non linear models for forecasting.

All461 – Generative AI (course type: elective) (3 Credits – 5 ECTS)

Course objective: This course introduces the fundamental concepts and modern applications of generative artificial intelligence. Students will gain an understanding of how generative models work, explore their mathematical foundations, and learn to apply them in diverse fields such as image, text, and audio generation. The course aims to develop both theoretical knowledge and practical skills for designing and evaluating generative AI systems.

Course content: Overview of generative AI and its historical development. Probabilistic modeling and key mathematical foundations. Generative Adversarial Networks (GANs) and their variants. Variational Autoencoders (VAEs). Diffusion models and recent advancements. Applications in natural language processing, computer vision, and creative industries. Ethical considerations, societal impact, and responsible use of generative AI. Hands-on laboratory sessions with modern frameworks and tools.

Restricted Technical Electives**Engineering Ethics (Course type: required; Course code: All429; Cr: 3; ECTS: 5)**

Course objective: This course aims to deal with different aspects of the International Political Economy, which is concerned with the interconnectedness of various areas such as economics, politics, history, sociology, etc.

Course content: In the first part of this course, we will introduce the fundamental paradigms of IPE by looking at the three different theoretical perspectives: mercantilism, liberalism, and structuralism. In the second part of the course, we will analyze structural connections of IPE, leading to sections that explore international trade, international finance, international institutions and global problems.

E) Presentation in Visual or Table Format

1st Semester								2nd Semester							
COURSE NAME	DERS ADI	C/E	T	P	C	E		COURSE NAME	DERS ADI	C/E	T	P	C	E	
CHM101 GENERAL CHEMISTRY	GENEL KİMYA	3	3	2	4	5		ARI08 OBJECT ORIENTED PROGRAMMING	NEŞNE YÖNÜMLÜ PROGRAMLAMA	3	2	2	3	6	
ARI02 PROGRAMMING AND PROBLEM SOLVING	PROGRAMLAMA VE PROBLEM ÇÖZME	3	3	2	4	5		ENG102 ENGLISH II	İNGİLİZCE II	3	3	0	2	3	
ENG101 ENGLISH I	İNGİLİZCE I	3	3	0	3	3		MTH102 CALCULUS II	MATEMATİK II	3	4	0	4	6	
MTH101 CALCULUS I	MATEMATİK I	3	4	0	4	5		ARI04 DISCRETE STRUCTURES	AYRIK YAPILAR	3	3	0	3	5	
MTH13 LINEAR ALGEBRA	DOĞRUSAL CEBİR	3	3	0	3	3		PHY102 PHYSICS II	FİZİK II	3	3	2	4	6	
PHY101 PHYSICS I	FİZİK I	3	3	2	4	5		CAR100 CAREER PLANNING	KARİYER PLANLAMA	3	3	0	0	2	
CAM100 CAMPUS ORIENTATION	KAMPÜS UYUM	3	2	0	0	2		GRC151 21st CENTURY SKILLS	21. YÜZYIL BECERİLERİ	3	2	0	0	2	
Total			21	6	22	30		Total			19	4	16	30	
3rd Semester								4th Semester							
COURSE NAME	DERS ADI	C/E	T	P	C	E		COURSE NAME	DERS ADI	C/E	T	P	C	E	
ARI01 DATA STRUCTURES AND ALGORITHMS	VERİ YAPILARI VE ALGORİTMALAR	3	3	2	4	6		ARI03 COMPUTER ORGANIZATION AND ARCHITECTURE	BİLGİSAYAR ORGANİZASYONU VE MİMARİSİ	3	3	2	4	5	
ARI01 LOGIC DESIGN	SAYISAL MANTIK	3	3	2	4	6		ARI02 DATABASE SYSTEMS	VERİTABANI YÖNETİM SİSTEMLERİ	3	3	2	4	5	
SW214 HUMAN COMPUTER INTERACTION	İNSAN BİLGİSAYAR ETKİLEŞİMİ	3	3	0	3	4		SW202 SOFTWARE CONSTRUCTION	YAZILIM YAPIM	3	2	2	3	4	
MTH211 PROBABILITY AND STATISTICS	OLASILIK VE İSTATİSTİK	3	3	0	3	6		ENG201 ORAL COMMUNICATION SKILLS	SÖZLÜ İLETİŞİM BECERİLERİ	3	3	0	3	3	
ARI03 PRINCIPLES OF SOFTWARE ENGINEERING	YAZILIM MÜHENDİSLİĞİNGİNİ	3	3	0	3	6		YTI101/TUR101 TURKISH LANGUAGE FOR INTERNATIONAL STUDENTS	YABANCILAR İÇİN TÜRKÇE ÖĞRETİMİ	3	2	0	2	2	
CRC100 CYPRIUS HISTORY AND CULTURE	KIBRIS KÜLTÜRÜ VE TARİHİ	3	2	0	0	2		ARI27 INTRODUCTION TO MANAGEMENT	YÖNETİM GİRİŞİ	3	3	0	3	5	
Total			17	4	17	30		SW239 SUMMER TRAINING I	STAJ I	3	3	0	0	6	
Total								Total			16	6	19	30	
5th Semester								6th Semester							
COURSE NAME	DERS ADI	C/E	T	P	C	E		COURSE NAME	DERS ADI	C/E	T	P	C	E	
ARI02 OPERATING SYSTEMS	İŞLETİM SİSTEMLERİ	3	3	0	3	6		ARI05 INTERNET PROGRAMMING	İNTERNET PROGRAMLAMA	3	3	0	3	5	
SW305 ADVANCED OBJECT ORIENTED PROGRAMMING	GELİŞMİŞ NESNE YÖNÜMLÜ PROGRAMLAMA I	3	3	0	3	4		ARI03 DATA COMMUNICATIONS AND COMPUTER NETWORKS	VERİ İLETİŞİMİ VE BİLGİSAYAR AĞLARI	3	3	2	4	5	
ARI111 MANAGEMENT INFORMATION SYSTEMS FOR ENGINEERS	MÜHENDİSLİK İÇİN YÖNETİM BİLİŞİM SİSTEMLERİ	3	4	0	4	7		SW302 SOFTWARE QUALITY ASSURANCE AND TESTING	YAZILIM KALİTE GÜVENCESİ VE TESTİ	3	2	2	3	4	
SW301 SOFTWARE DESIGN AND ARCHITECTURE	YAZILIM TASARIMI VE MİMARİSİ	3	3	2	4	5		SW304 SOFTWARE REQUIREMENTS ANALYSIS	YAZILIM GEREKSİNİM ANALİZİ	3	2	2	3	4	
ARI39 OCCUPATIONAL HEALTH AND SAFETY	İŞ SAĞLIĞI VE GÜVENLİĞİ	3	2	0	2	4		SW336 ADVANCED OBJECT ORIENTED PROGRAMMING II	GELİŞMİŞ NESNE YÖNÜMLÜ PROGRAMLAMA II	3	3	0	3	4	
ATI104/ATI102 ATATÜRK PRINCIPLES AND REFORMS FOR TURKISH STUDENTS I	ATATÜRK İLKELERİ VE İNKILAP TARİHİ I	3	3	0	2	2		ATI104/ATI102 ATATÜRK PRINCIPLES AND REFORMS FOR TURKISH STUDENTS II	ATATÜRK İLKELERİ VE İNKILAP TARİHİ II	3	3	0	2	2	
YTI102/TUR102 TURKISH LANGUAGE FOR INTERNATIONAL STUDENTS	YABANCILAR İÇİN TÜRKÇE ÖĞRETİMİ	3	2	0	2	2		SW339 SUMMER TRAINING II	STAJ II	3	3	0	0	6	
Total			19	2	20	30		Total			15	6	18	30	
7th Semester								8th Semester							
COURSE NAME	DERS ADI	C/E	T	P	C	E		COURSE NAME	DERS ADI	C/E	T	P	C	E	
ARI430 PRINCIPLES OF INFORMATION SECURITY	BİLGİ GÜVENLİĞİ PRASASLARI	3	3	0	3	6		ARI430 ENGINEERING ETHICS	MÜHENDİSLİK ETİĞİ	3	3	0	3	6	
SW4401 GRADUATION PROJECT I	BİTİRİM PROJESİ I	3	3	0	2	4		ARI426 ECONOMICS FOR ENGINEERS	MÜHENDİSLİK İÇİN EKONOMİ	3	3	0	3	6	
TE TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	3	3	0	3	3		SW4402 GRADUATION PROJECT II	BİTİRİM PROJESİ II	3	4	0	4	7	
TE TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	3	3	0	3	3		SW4401 SOFTWARE PROJECT MANAGEMENT	YAZILIM PROJESİ YÖNETİMİ	3	2	0	3	6	
TE TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	3	3	0	3	3		TE TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	3	3	0	3	3	
TE TECHNICAL ELECTIVE	TEKNİK SEÇMELİ	3	3	0	3	3		Total			15	0	16	30	
Total			17	0	17	30		Total							

SEÇMELİ DERSLER												
KOD	DERSİN ADI	DERSİN İNGİLİZCE ADI	T	P	K	A						
YZB431	E-TİCARET	E-COMMERCE	2	2	2	5						
YZB412	VERİTABANI UYGULAMALARI	DATABASE APPLICATION	2	2	2	5						
YZB092	SİSTEM SİMÜLASYONU	SYSTEM SIMULATION	2	2	2	5						
YZB404	YAPAY SİNİR AĞLARI	NEURAL NETWORKS	2	2	2	5						
YZB419	GÖRÜNTÜ İŞLEME	IMAGE PROCESSING	2	2	2	5						
YZB402	BİLGİSAYAR GRAFİKLERİ	COMPUTER GRAPHICS	2	2	2	5						
YZB403	BİLGİSAYAR DONANIMI	COMPUTER HARDWARE	2	2	2	5						
YZB406	SİSTEM PROGRAMLAMA	SYSTEM PROGRAMMING	2	2	2	5						
YZB413	YAPAY ZEKA YA GİRİŞ	INTRODUCTION TO ARTIFICIAL INTELLIGENCE	2	2	2	5						
YZB417	MOBİL PROGRAMLAMA	MOBILE PROGRAMMING	2	2	2	5						
YZB408	GELİŞMİŞ NESNE YÖNÜMLÜ PROGRAMLAMA	ADVANCED OBJECT ORIENTED PROGRAMMING	2	2	2	5						
YZB409	NEŞNE YÖNÜMLÜ PROGRAMLAMA II	OBJECT ORIENTED PROGRAMMING II	2	2	2	5						
YZB407	PROGRAMLAMA DİLLERİ II	PROGRAMMING LANGUAGES II	2	2	2	5						
YZB415	KARAR VERME	DECISION MAKING	2	2	2	5						
YZB006	WEB TASARIMI VE PROGRAMLAMA	WEB DESIGN AND PROGRAMMING	2	2	2	5						
YZB007	ÇOKLUORTAM SİSTEMLERİ	MULTIMEDIA SYSTEMS	2	2	2	5						
KISITLI SEÇMELİ BÖLÜM DERSLERİ												
YZM401	YAZILIM PROJESİ YÖNETİMİ	SOFTWARE PROJECT MANAGEMENT	2	2	0	5						
YZM094	YAZILIM GEREKSİNİM ANALİZİ	SOFTWARE REQUIREMENTS ANALYSIS	2	2	0	4						
YZM442	YAZILIM MÜHENDİSLİĞİ TRENDLERİ	SOFTWARE ENGINEERING TRENDS	3	3	0	5						
YZM448	YAZILIM UYGULAMALARI	SOFTWARE IMPLEMENTATION	2	2	0	5						
KISITLI SEÇMELİ DERSLER												
YZB430	BİLGİ GÜVENLİĞİ İLKELERİ	PRINCIPLES of INFORMATION SECURITY	3	3	0	6						
YZB427	YÖNETİM GİRİŞİ	INTRODUCTION to MANAGEMENT	3	3	0	6						
YZB426	EKONOMİYE GİRİŞİ	INTRODUCTION to ECONOMICS	3	3	0	6						
YZB429	MÜHENDİSLİK ETİĞİ	ENGINEERING ETHICS	3	3	0	6						
YZM442	YAZILIM MÜHENDİSLİĞİ TRENDLERİ	SOFTWARE ENGINEERING TRENDS	3	3	0	5						
TEKNİK OLMAYAN SEÇMELİ DERSLER												
SIC351	21st CENTURY SKILLS	21. YÜZYIL BECERİLERİ	2	2	0	2						
KTK100	CYPRUS HISTORY AND CULTURE	KIBRIS KÜLTÜRÜ VE TARİHİ	2	2	0	2						

8.2. Common Compulsory Courses Offered University-wide

ENG101

Course Description:

Designed for English-medium departments, ENG101 develops students' ability to understand and respond to everyday dialogues and contexts in English-speaking environments. Meaning and communication are prioritized; grammar supports communication. Content is supported with visual, audio, and written materials and tailored to each topic. ENG101 targets A1 (CEFR).

Course Content:1.Introducing oneself 2. Giving personal information 3. Giving personal information 4. Talking about objects 5. Talking about family 6. Describing and discussing buildings and furniture 7. Talking about timetables/schedules 8. Talking about daily routines 9. Talking about daily routines 10. Ability 11. Asking for and giving directions 12. Talking about food and quantities

ENG102

Course Description:

Designed for English-medium departments, ENG102 further develops the ability to understand and respond to everyday dialogues and contexts. Meaning and communication are prioritized; grammar is instrumental. Content is supported with visual, audio, and written materials and tailored per topic. ENG102 targets A1 (CEFR).

Course Content:1.Explaining a recipe 2. Ordering food and making polite requests 3. Comparing objects/people/places 4. Comparing objects/people/places 5. Talking about what is happening now 6. Talking about what is happening now 7. Making suggestions and planning/arranging 8. Talking about the past 9. Talking about the past 9. Giving advice 10. Talking about the future 11. Talking about the future 12. Hotel check-in

TUR101

Course Description:

Teaching the Turkish language in accordance with its rules.

Course Content:1.Definition and importance of language 2. Written language and its features 3. Modes of expression 4. Points of view and approaches 5. Punctuation I 6. Punctuation II 7. Expression disorders 8. Midterm 9–13. Written composition genres 14. Final exam

AIT103/AIT101

Course Description:

Examines the early social, economic, political, institutional, and cultural dynamics of the Ottoman Empire to provide the historical background of the Republic of Turkey. It analyzes political dynamics and modernization efforts, explaining the key concepts of the History of the Revolution, the conditions of the early 20th century, the final period of the Empire, WWI, and the preparatory phase of the National Struggle.

Course Content: Brief political history of the Ottoman Empire (1300–1914); decline and modernization; the classical period state and society; organization of the National Resistance (Amasya Circular, Erzurum and Sivas Congresses); occupations; Mustafa Kemal and the National Resistance; the Ottoman Empire in WWI; Armistice of Mondros; Treaty of Sèvres; the War of Independence against Armenian and Greek forces; Armistice of Mudanya; Treaty of Lausanne.

AIT104/AIT102

Course Description:

Aims to develop students' ability to classify, define, explain, and analyze current social and individual issues in Turkey through rationality, science, and modernity, from the perspective of Kemalist thought and the Turkish Revolution.

Course Content:

Discussion of “revolution,” “evolution,” and major revolutions in history; transformation of the political system (from Sultanate to Republic); changes in education and cultural life; attempts at multi-party rule and consolidation of single-party governance; Kemalism and the Six Principles (Republicanism, Nationalism, Populism, Statism, Secularism, Reformism); debate on whether the Sheikh Said Rebellion was a reaction to secular policies or Kurdish nationalism; Turkey during WWII; Turkey's position in the League of Nations and regional organizations; Turkish foreign policy and key issues; statism, republicanism, reformism.

CAR100

Course Description:

Aims to introduce career methods that help students adapt to rapidly changing economic, social, cultural, ethical, and legal conditions of the business world and to develop the ability to apply these methods in their own lives.

Course Content:

Introduction: the concept and stages of career; employer expectations from new graduates; organizational career management and models; individual career planning

and goal setting; job-search techniques; individual career planning applications: cover letter and CV; basic communication skills; individual career planning applications: interview preparation; interview techniques; orientation and transition to work life; lifelong learning.

CAM100

Course Description:

Organized to help students better get to know university life, this course consists of activities aimed at gaining the Near Eastern identity and adapting more easily to university life.

Course Content:

History and general information of Near East University; information about faculties; advising and academic processes; digital/distance education and use of UZEBİM; accessing and managing information; information about university-wide common and elective courses; creating a study plan and developing academic study habits; academic ethics and scientific approach; social life and the Office of the Dean of Students; health services and hospital facilities; Cyprus culture and adaptation; scientific research and activities; assessment and evaluation; communication skills and interpersonal relations management.

CHC100

Course Description:

As above, it provides comparative analysis of Cyprus's changing dynamics and helps understand the Mediterranean basin.

Course Content:

General information on the history and culture of Cyprus; zoology and botany; social and cultural life in antiquity and the Middle Ages; the island's social and cultural heritage in the Ottoman period; art history; religion and culture; the British administration; history of education in Cyprus; political events between 1950–1974; the existential struggle of Turkish Cypriots; the establishment of the TRNC and its social structure.

GEC351 – 21st Century Skills

Course Description:

Aims to develop core thinking skills such as critical, creative, and philosophical thinking; problem-solving; lifelong learning; and effective learning strategies. It also builds social skills including effective communication, teamwork, intercultural interaction, and diversity management. With digital literacy, media awareness, information management, and basic statistics, students are supported to become competent and responsible digital citizens. Self-management skills—self-awareness,

emotional intelligence, resilience, and time management—foster individual development; sustainability, ethical leadership, and global citizenship build social responsibility. Finally, applied life skills such as entrepreneurship, financial literacy, stress management, and creative presentation equip students with competencies for real life.

Course Content:

Fundamental thinking and learning skills; concepts of critical and creative thinking; core problem-solving concepts and processes; principles of lifelong learning; logical reasoning; effective learning strategies; components of core thinking skills; methods of philosophical thought; communication and collaboration skills; fundamentals of effective communication and cooperation; basics of intercultural communication; elements shaping communication across cultures; importance of effective communication in collaboration; appropriate techniques for group work; strategies for intercultural interaction; communication problems and solutions in teamwork; innovative communication strategies supporting diversity management; strategies to enhance communication and collaboration in teams; digital literacy and media competencies; information management; basic statistical terms; purposes of digital media tools; interpretation of statistical data; digital tools and platforms; reliability and quality of digital content and sources; creation of original media content; cybersecurity; ethical and philosophical reflections with self-management and cognitive flexibility; time-management strategies; factors of individual and environmental adaptation; components of emotional intelligence; prioritization techniques; resilience in various situations; coping strategies for stress and change; ethics; personality profiles and the impact of emotional intelligence on success; an individual adaptation strategy for stressful situations; empathy-based communication; time management across academic, social, and personal goals; social responsibility and global citizenship; sustainability and environmental awareness; principles of ethical leadership; links between global issues (e.g., climate change, inequality) and social responsibility; relationship between social responsibility projects and sustainability; raising universal awareness; applied life skills; basic entrepreneurship concepts; financial literacy terms; stages of project management.

8.3. Course Syllabus

The related document can be accessed via the link below:

https://drive.google.com/file/d/1OEPeFTM9-iDRknjITodS-VGyp3q0Azgf/view?usp=drive_link

9. Assessment and Evaluation Principles of the Program

Course performance at Near East University (NEU) is generally based on face-to-face examinations (midterm and final). In addition, to encourage active participation and assess diverse skills, some courses may employ alternative assessment methods such as project assignments, presentations, homework, quizzes, and group work. The assessment method and criteria for each course may vary depending on the course characteristics and the instructor's preferences. These criteria are announced at the beginning of the semester and are clearly stated in the course syllabus. Students' final course grades are calculated as the weighted average of examinations, assignments, and any other assessment tools implemented throughout the semester. Accordingly, students are expected to participate actively in all assessment components, not only in exams.

9.1. Exam Rules

- Midterm and final exams are conducted face-to-face.
- Instructors may additionally use projects, presentations, homework, quizzes, and group work as part of the assessment scheme.
- Assessment criteria and weightings are communicated to students at the start of the semester in the course syllabus.
- The final grade reflects the weighted average of all assessment components applied in the course.

9.2. Letter Grade Conversion Table

GRADE	LETTER GRADE	MULTIPLIER	AKTS GRADE
90-100	AA	4.0	A
85-89	BA	3.5	B*
80-84	BB	3.0	B*
75-79	CB	2.5	C*

70-74	CC	2.0	C*
60-69	DC	1.5	D
50-59	DD	1.0	E
49-00	FF	0.0	F

Passing thresholds by program level.

To be considered successful in a course: minimum DD for level 5 (associate) and level 6 (undergraduate) programs; minimum CC for level 7 (master's) programs; minimum BB for level 8 (doctoral) programs. For courses not included in the GPA, students must receive S (Satisfactory).

Additional transcript notations (non-GPA where applicable).

- **I (Incomplete):** Granted when course requirements are not completed by the grade due date for a valid reason accepted by the instructor. All outstanding work must be completed within one week after the grade due date. In exceptional cases, this may be extended to two weeks before the next semester begins by decision of the relevant academic unit administrator and the board. Otherwise, I convert to FF or U.
- **S (Satisfactory Completion):** Assigned for successful completion in non-credit / non-GPA contexts.
- **U (Unsatisfactory):** Assigned for failure in non-credit courses.
- **P (Successful Progress):** For multi-semester requirements not included in GPA when expected progress is achieved.
- **NP (Not Successful Progress):** For multi-semester requirements not included in GPA when expected progress is not achieved.
- **EX (Exempt):** Course exemption granted.
- **NI (Not Included):** Grade recorded but not included in GPA (and not counted within the registered program's taken courses).
- **W (Withdrawal):** With advisor recommendation and instructor approval, permitted after add/drop and within 10 weeks of semester start. Not allowed in the first two semesters. A student who previously received W in a course that is

not included in GPA cannot withdraw from the same course again. Maximum withdrawals: 2 (associate), 4 (undergraduate). Withdrawn courses must be retaken when next offered.

- **NA (Never Attended):** Assigned to students who fail attendance requirements and lose the right to end-of-term assessments. **Not included in GPA.**

Note: Student transcripts display letter grades corresponding to both national and ECTS credits.

10. STUDENT ADMISSION AND ENROLLMENT REQUIREMENTS

Near East University's Software Engineering Program is offered in two tracks: Turkish-medium and English-medium. Admissions and registration for both tracks are conducted in accordance with the University's general regulations and the provisions of the Council of Higher Education (YÖK) and the Higher Education Supervision and Accreditation Council (YÖDAK). In the Turkish Track, the language of instruction is entirely Turkish. In the English Track, the language of instruction is entirely English. Applicants to the English Track have their English proficiency assessed through the compulsory preparatory program, which may last up to two years. For both tracks, candidates must make their preferences based on the Higher Education Institutions Examination (YKS) results and be placed by the Student Selection and Placement Center (ÖSYM). Registration procedures are carried out by the Directorate of Student Affairs, located on the 1st floor of the Faculty of Pharmacy building, open Monday–Friday, 08:00–17:00. Students may obtain information about faculties, complete registration, and request official documents such as exam entry slips, student certificates, and transcripts from this unit. Submission of all required documents and payment of the relevant fees are mandatory; registration is completed only when these conditions are fully met. At the beginning of each academic term, re-registration must be completed. Students who do not renew their registration lose the right to attend classes and take examinations for that term. International students may be admitted without an exam or through a special examination under procedures determined by the University. This process is carried out in accordance with the relevant legislation and Senate decisions. Individuals with special (non-degree) student status may take only

certain courses; they are not considered enrolled in the program and are not eligible for a diploma.

Students who successfully complete the program and fulfill all requirements are awarded a bachelor's degree. Grade records are securely stored digitally; when needed, certified copies of these records may be provided to the student or to competent authorities. For students who withdraw their registration, fees previously paid are non-refundable. Leaves of absence granted for health, military service, financial reasons, or educational purposes are not counted toward the official period of study; such cases are evaluated and decided by the relevant boards. Upon registration, each student is assigned an academic advisor. Students are expected to maintain regular contact with their advisor and obtain approval for course selection, internship, and graduation matters. All processes—such as compulsory internship, disciplinary procedures, scholarship opportunities, and health services—are conducted within the framework of Near East University's current regulations, directives, and Senate decisions.

11. HORIZONTAL AND VERTICAL TRANSFER OPPORTUNITIES

11.1. Horizontal Transfer Opportunities

This section sets out the procedures and principles for applications to Near East University (NEU) Software Engineering (Turkish and English Tracks) via horizontal transfer. All procedures are carried out in accordance with the provisions of the NEU Regulation on Horizontal Transfer and Credit Transfer. Applicants for horizontal transfer must not have received any disciplinary sanction, must hold a cumulative GPA of at least 2.00/4.00 (or 60/100), and must have successfully completed a sufficient number of courses whose contents are compatible with the curriculum of the target program. For transfers based on central placement scores, the applicant must meet the base score (taban puan) of the target program for the year of application. Applications must be submitted within the dates announced by the University, and all required documents must be delivered in full to the relevant academic unit; evaluations are made within available quotas and according to applicants' academic standing. For accepted students, course exemptions and class placement/adaptation are determined

by decision of the relevant Faculty Administrative Board, in line with the Department Chair's opinion. During evaluation, particular attention is paid to the compatibility of course contents, especially in computer science fundamentals, software development, and software engineering courses; course equivalency is established on the basis of content alignment between courses previously taken and those in the target program. Applications arising from special circumstances (e.g., war, natural disaster, health issues) are evaluated separately in accordance with the relevant legislation, and additional documentation may be requested. For citizens of the Republic of Türkiye, further details on NEU transfer rules are available in the Council of Higher Education (YÖK) Horizontal Transfer Rules and in the Near East University Regulation on Horizontal Transfer and Credit Transfer (29.05.2023).

11.2. Vertical Transfer Opportunities

This section summarizes the main principles for vertical transfer applications to NEU Software Engineering (Turkish and English Tracks). Graduates of vocational schools are required to take the Vertical Transfer Examination (DGS) administered by ÖSYM; preferences are made based on the DGS score, and placements are carried out by ÖSYM. For accepted students, course exemptions and class placement are determined by the relevant Faculty Administrative Board in line with the Department Chair's opinion.

12. Recognition and Evaluation of Prior Learning

Students enrolled in the Near East University Classroom Teaching Program may request exemption for courses they previously completed successfully at other higher education institutions no later than the end of the second week of the semester in which they register for the course. Applications must be submitted in writing to the relevant academic unit and must include an official (certified) transcript together with official (certified) course descriptions. If the exemption request concerns courses taken abroad, the equivalency of those courses must have been approved by the Council of Higher Education (YÖK). No course exemption is processed between students concurrently registered in both an associate and a bachelor's program. Exemption requests are evaluated by the departmental committee, taking into account the course

content, credits, and the student's academic performance. Courses deemed appropriate are recorded on the student's transcript with a letter grade and are included in the CGPA; no exemption is granted for courses in which the student was not successful. For common compulsory courses such as Atatürk's Principles and History of the Turkish Revolution, Turkish Language, and Foreign Language, exemption may be granted without requiring credit matching. The exemption exam for these courses may be taken only once. If the total ECTS of the exempted courses exceeds 70% of the total ECTS for the semester in which the student is registered, the student is placed in the next class level. However, students who are placed in an upper class as a result of this process may not take upper-class courses in the first academic year following such placement. Objections to exemption and placement decisions may be lodged within two weeks from the date the results are notified to the student. In cases of horizontal or vertical transfer, course exemption requests are evaluated by the relevant Faculty (or School) Administrative Board in line with the opinion of the departmental committee. For exemption from the foreign language preparatory class, the student must meet a specified language proficiency level demonstrated by exam results accepted by the University.

13. International Programs and Exchange Opportunities

Near East University (NEU) offers its students international exchange and internship opportunities, particularly within the Europe-focused Erasmus+ Programme, which provides study and traineeship options abroad for students and academic staff in European Union member states. Students wishing to participate in Erasmus+ must have completed at least the first year, meet specified academic achievement criteria, and document the foreign-language proficiency required by the relevant programme. In addition, NEU conducts exchange activities through various international student unions in different fields, including IFMSA (Medicine), IADS (Dentistry), IPSF (Pharmacy), and IVSA (Veterinary Medicine), under which research and clinical traineeship exchanges are available. During the summer, in collaboration with these unions, NEU organizes hands-on training activities, joint research projects, and cultural events with students from different countries. Thanks to NEU's active collaborations with 114 universities in 44 countries, students can both study and undertake internships abroad while also studying on the Turkish Republic of Northern Cyprus

(TRNC) campus in a culturally diverse environment. NEU maintains reciprocal cooperation with many higher education institutions across Europe, Asia, the Americas, and Africa. Students may study for a half term or a full term, complete internships, or take part in international research projects at these universities. To provide students with global experience, NEU supports exchange not only through Erasmus+ but also via the Mevlana and Farabi programmes; in particular, the Mevlana Programme offers reciprocal exchange with universities in Türkiye, while the Farabi Programme supports student exchange with domestic institutions. Through these programmes, students have the opportunity to enhance their academic knowledge while experiencing different cultures and broadening their cultural horizons. Throughout the entire process—from application onward—the NEU International Office provides comprehensive support, including advising services, documentation and application procedures, accommodation, and visa matters; students are informed and guided at every stage by specialist staff.

14. Program Accreditation and Quality Assurance

14.1. Quality Policy

Near East University's Software Engineering Program adopts a quality policy aligned with its mission and vision to enhance educational excellence. The program aims to equip students with up-to-date theoretical knowledge and applied competencies in software development, engineering, and informatics; to graduate qualified, innovative software engineers committed to ethical values and societal needs; and to contribute to academic and technological progress by supporting research and knowledge production in software engineering. Sustained professional growth of graduates and the strengthening of a lifelong-learning culture are among the program's core priorities.

14.2. Program Accreditation Process

The Software Engineering Program participates in national quality assurance and accreditation processes. In this context, studies are carried out in line with the criteria set by the relevant accreditation body, including the definition and periodic review of

program educational objectives, implementation of student-centered teaching and learning processes, support for faculty qualifications and professional development, and the systematic operation of monitoring and evaluation mechanisms.

14.3. Quality of Education

In response to rapid technological advances and evolving industry needs, the Software Engineering curriculum is reviewed at regular intervals; course contents are updated and new topics are incorporated into the program, while courses that have lost currency are phased out. This process follows an established timetable and quality assurance mechanisms and is conducted systematically with the participation of the departmental academic board and relevant internal and external stakeholders (students, alumni, and industry representatives).

14.4. Research and Development Activities

Consistent with its quality policy, the program emphasizes contemporary, research-informed, and innovative R&D activities that enhance teaching quality. These efforts encompass effective instructional methods, the use of educational technologies, robust assessment and evaluation practices, and inclusive, student-centered approaches. Research and development activities are structured to strengthen students' critical thinking, problem-solving, and lifelong-learning skills. Accordingly, projects that integrate theory and practice and encourage collaboration at national and international levels are supported.

14.5. Continuous Improvement Process

Within the scope of quality assurance, the program embraces continuous improvement to develop its teaching and learning processes. Based on feedback from students, alumni, and stakeholders, course contents, instructional methods, and practical components are reviewed regularly. The resulting data inform the updating of educational activities and the planning of initiatives that support the professional development of software engineering students.

15. Graduation Requirements and Degree Awarded

15.1. Graduation Requirements

To graduate from the Near East University Software Engineering Bachelor's Program, students must successfully complete all courses in the curriculum with at least 240 ECTS credits and a minimum letter grade of DD/S, and achieve a Cumulative Grade Point Average (CGPA) of at least 2.00 on a 4.00 scale. In addition, students must complete the compulsory internship(s) specified in the program at the required duration and standard. Upon fulfillment of all academic and administrative requirements, the student becomes eligible for the Software Engineering Bachelor's Diploma.

15.2. Degree Awarded

Students who successfully complete the Near East University Software Engineering Bachelor's Program are awarded a bachelor's degree in Software Engineering. Graduates receive the title "Software Engineer."

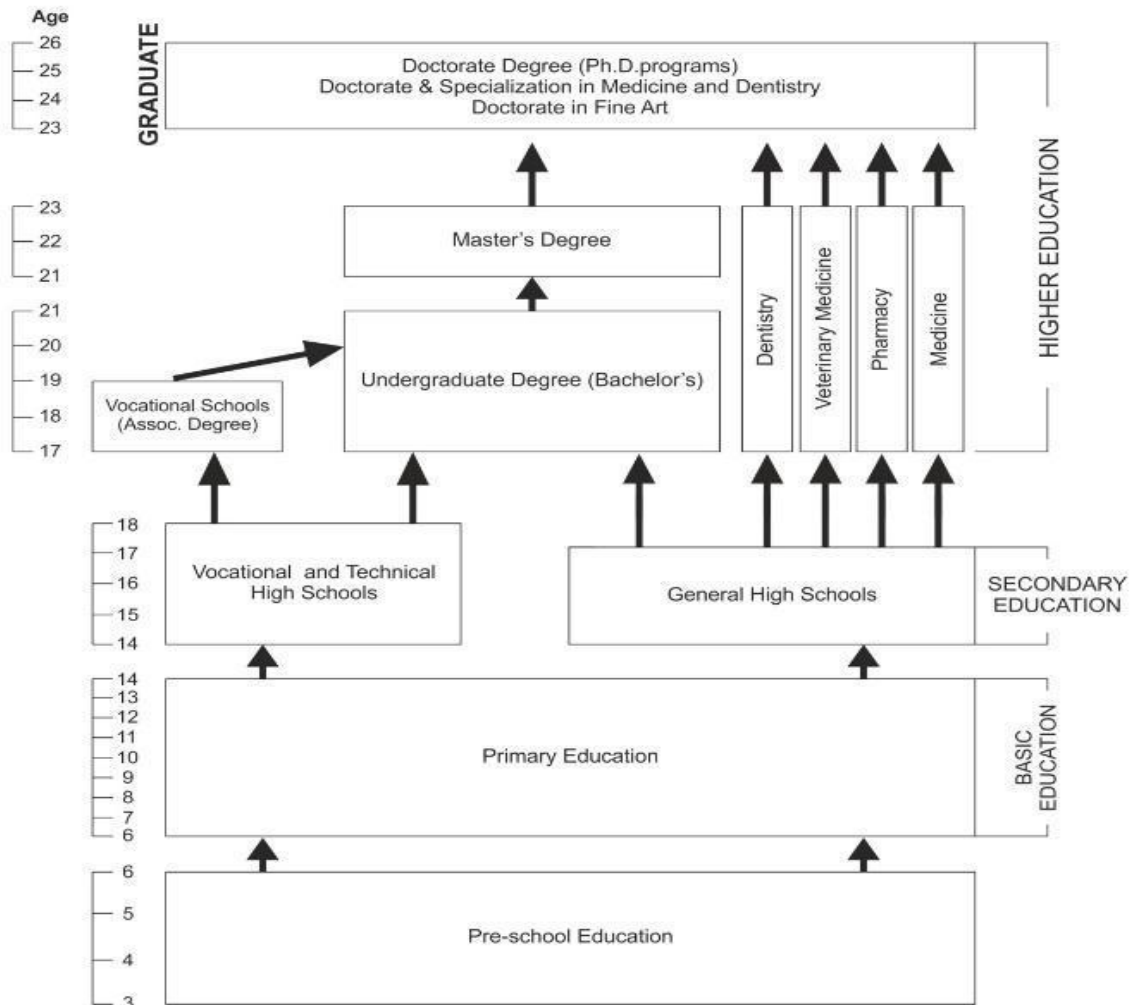
16. DIPLOMA SUPPLEMENT



DIPLOMA SUPPLEMENT

Diploma No: Diploma Date:
Near East Boulevard, Nicosia - North Cyprus+90 392 680 2000

GENERAL STRUCTURE OF THE NORTH CYPRUS EDUCATION SYSTEM



This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION	
1.1. Family name(s): 1.2. Given name(s) :	1.3. Place and date of birth: 1.4. Student identification number:
2. INFORMATION IDENTIFYING THE QUALIFICATION	
2.1. Name of the qualification and (if applicable) the title conferred 2.2. Main field(s) of study for qualification 2.3. Name and status of awarding institution	2.4. Name and type of institution administering studies 2.5. Language(s) of instruction/examinations
3. INFORMATION ON THE LEVEL OF THE QUALIFICATION	
3.1. Level of qualification First Cycle	3.2. Official length of program Normally 5 Years (excluding 1 year English Preparatory School, if necessary), 2 semesters per year, 14 weeks per semester. 8 SEMESTERS, 240 ECTS (European Credit Transfer System) . Each course is credited with a number of ECTS (≥ 2) according to the student's workload (contact hours, laboratory work, examination, self-study, presentation etc.) and accumulation of credits (ECTS) is accomplished after successful completion of the course.
3.3. Access requirement(s) High school diploma Placement through a centralized national university placement examination NEU Private Examination	
4. INFORMATION ON THE CONTENTS AND RESULTS GAINED	
4.1. Program requirements The Bachelor of Science degree is awarded to students who have successfully completed all courses in the curriculum, including 40 working days of summer practice and have obtained cumulative grade point average (CGPA) value at least 2.00 on a 4.00 scale and have no failing grades. The objectives are to provide the fundamentals of contemporary Software Engineering education and to supply an overall and comprehensive outlook on the Software Engineering profession. It is also aimed to provide the graduates with the abilities to adapt to the technological improvements in	4.2 Learning Outcome of the program Upon completion of BSc. In Software Engineering, students will demonstrate the ability to: 1- Apply mathematics, logic, and fundamental computer science knowledge to analyze and solve software engineering problems. 2- Demonstrate a solid understanding of computer hardware, operating systems, and network structures. 3- Develop effective software solutions and applications by utilizing algorithms and data structures.

the field, with the verbal and written communication skills and also with the knowledge on ethical issues of the profession.	4- Use object-oriented and functional programming paradigms in software development processes. 5- Plan and implement software development life cycle (SDLC) processes to ensure software quality and project success. 6- Design and manage databases, including relational and non-relational data management systems. 7- Apply principles of software security, encryption, and cybersecurity to protect data and ensure system integrity. 8- Develop scalable software systems for cloud-based and distributed environments. 9- Use code quality tools and version control systems (such as Git) effectively in collaborative projects. 10- Apply teamwork, leadership, and project management skills to coordinate and deliver successful software projects. 11- Demonstrate continuous learning ability and adaptability to emerging technologies. 12- Evaluate software projects in terms of sustainability, environmental responsibility, and social impact. 13- Adhere to professional and ethical responsibilities within the context of software engineering practice.
4.3. Program details and the individual grades/marks/ECTS obtained Please see the next page	4.4 Mode of Study Full-Time

4.4. Grading scheme, grade translation and grade distribution guidance:

For each course taken, the student is assigned one of the following grades by the course teacher.

For a BSc in Software Engineering degree, students must obtain at least DD or S from each course and have a CGPA of not less than 2.00 out of 4.00 and have completed all the courses and summer practices in the program. The total credit points for a course are obtained by multiplying the coefficient of the final grade by the credit hours. In order to obtain the GPA for any given semester, the total credit points are divided by the total credit hours. Students who obtain a CGPA of 3.00-3.49 at the end of a semester are considered as "Honor Students" and those who obtain a CGPA of 3.50-4.00 at the end of a semester are considered as "High Honor Students" and this is recorded in their academic report. The letter grades, the quality point equivalents are:

Percentage	Course Coefficient	Grade	Percentage	Course Coefficient	Grade
90-100	4	AA	70-74	2	CC
85-89	3.5	BA	65-69	1.5	DC
80-84	3	BB	60-64	1	DD
75-79	2.5	CB	59 and below	0	FF

I- Incomplete S- Satisfactory Completion, U-Unsatisfactory, NA-Not Attended, E-Exempted, W- Withdrawn

ECTS grade distribution and grade descriptors:

NEU Grade	ECTS Grade	Percentage of successful students normally achieving the grade	Definition
AA	A	Best 5 %	Excellent - outstanding performance with only minor errors
BA	B	Next 5 %	Very Good - above the average standard but with some errors
BB	B	Next 10 %	Very Good - above the average standard but with some errors
CB	C	Next 15 %	Good - generally sound work with a number of errors.
CC	C	Next 25 %	Good - generally sound work with a number of errors.
DC	D	Next 25 %	Satisfactory - fair but with significant shortcomings.
DD	E	Next 15 %	Sufficient - performance meets the minimum criteria.
FD	FX		Fail - some more work required before the credit can be awarded.
FF	F		Fail - considerable work is required.

4.5 Overall Classification of the Qualification: CGPA:../4.00 Final Grade of the Degree:..

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1. Access to further study

May apply to second cycle programs.

5.2. Professional status conferred

This degree enables the holder to exercise the profession.

6. ADDITIONAL INFORMATION

6.1. Additional information To be eligible for a BSc. (Bachelor of Science) degree at Near East University Faculty of Artificial Intelligence and Informatics,, all summer practices should be successfully completed. These practices are: SWE299 Summer Training I (ECTS = 6) SWE399 Summer Training II(ECTS = 6)	6.2. Further Information Sources Department web site: https://aif.neu.edu.tr/ University web site: https://neu.edu.tr/ The Council of Higher Education of Turkey http://www.yok.gov.tr Higher Education Planning, Evaluation Accreditation and Coordination of North Cyprus Council Web site https://yodak.gov.ct.tr/
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4.3. Program details and the individual grade/marks obtained:

(1 st Semester)						(2 nd Semester)					
Course Code	Course Name	CR	ECTS	Status	Grade	Course Code	Course Name	CR	ECTS	Status	Grade
CHM 101	General Chemistry	4	5	Compulsory		All108	Object Oriented Programming	3	6	Compulsory	
All102	Programming And Problem Solving	4	5	Compulsory		ENG102	English II	2	3	Compulsory	
ENG 101	English I	3	3	Compulsory		MTH102	Calculus II	4	6	Compulsory	
MTH 101	Calculus I	4	5	Compulsory		All104	Discrete Structures	3	5	Compulsory	
MTH 113	Linear Algebra	3	5	Compulsory		PHY102	Physics II	4	6	Compulsory	
PHY 101	General Physics I	4	5	Compulsory		CAR100	Career Planning	0	2	Compulsory	
CAM100	Campus Orientation	0	2	Compulsory		All108	Object Oriented Programming	0	2	Compulsory	
						GEC351	21st Century Skills	3	6	Elective	
		22	30					16	30		
(3 rd Semester)						(4 th Semester)					
Course Code	Course Name	CR	ECTS	Status	Grade	Course Code	Course Name	CR	ECTS	Status	Grade
All201	Data Structures And Algorithms	4	6	Compulsory		All203	Computer Organisation And Architecture	4	5	Compulsory	
All001	Logic Design	4	6	Compulsory		All202	Database Systems	4	5	Compulsory	
SWE234	Human Computer Interaction	3	4	Compulsory		SWE202	Software Construction	3	4	Compulsory	
MTH251	Probability And Statistics	3	6	Compulsory		ENG201	Oral Communication Skills	3	3	Compulsory	
All003	Principles Of Software Engineering	3	6	Compulsory		YIT101/TUR101	Turkish Language For International/Turkish Li Students	2	2	Compulsory	
CHC100	Cyprus History And Culture	0	2	Elective		All427	Introduction To Management	3	5	Elective	
						SWE299	Summer Training I	0	6	Compulsory	
		17	30					19	30		
(5 th Semester)						(6 th Semester)					
Course Code	Course Name	CR	ECTS	Status	Grade	Course Code	Course Name	CR	ECTS	Status	Grade

AIİ302	Operating Systems	3	6	Compulsory		AIİ005	Internet Programming	3	5	Compulsory	
SWE395	Advanced Object Oriented Programming	3	4	Compulsory		AIİ303	Data Communications And Computer Networks	4	5	Compulsory	
AIİ311	Management Information Systems For Engineers	4	7	Compulsory		SWE302	Software Quality Assurance And Testing	3	4	Compulsory	
SWE301	Software Design And Architecture	4	5	Compulsory		SWE304	Software Requirements Analysis	3	4	Elective	
AIİ439	Occupational Health And Safety	2	4	Compulsory		SWE396	Advanced Object Oriented Programming II	3	4	Compulsory	
AIT103/AIT101	Ataturk's Principles And Reforms For Turkish Students I	2	2	Compulsory		AIT104/AIT102	Ataturk's Principles And Reforms For Turkish Students II	2	2	Compulsory	
YIT102/TUR102	Turkish Language For International II/Turkish II Students	2	2	Compulsory		SWE399	Summer Training II	0	6	Compulsory	
		20	30					18	30		
(7 th Semester)						(8 th Semester)					

Course Code	Course Name	CR	ECTS	Status	Grade	Course Code	Course Name	CR	ECTS	Status	Grade
AIİ430	Principles Of Information Security	3	6	Compulsory		AIİ429	Engineering Ethics	3	6	Elective	
SWE491	Graduation Project I	2	4	Compulsory		AIİ426	Economics For Engineers	3	6	Elective	
TE	Technical Elective	3	5	Elective		SWE492	Graduation Project II	4	7	Compulsory	
TE	Technical Elective	3	5	Elective		SWE401	Software Project Management	3	6	Elective	
TE	Technical Elective	3	5	Elective		TE	Technical Elective	3	5	Elective	
TE	Technical Elective	3	5	Elective				3	6		
		17	30					16	30		

7. CERTIFICATION OF THE SUPPLEMENT

7.1. Date :

7.2. Name and Signature :

7.3. Capacity : Registrar

7.4. Official stamp or seal :

8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

The basic structure of the North Cyprus Education System consists of four main stages: pre-school education, primary education, secondary education and higher education.

Pre-school education consists of non-compulsory programs whereas primary education is a compulsory 8 year program for all children beginning from the age of 6. The secondary education system includes “General High Schools” and “Vocational and Technical High Schools”.

The Higher Education System in North Cyprus is regulated by the Higher Education Planning, Evaluation, Accreditation and Coordination Council (Yüksek öğretim Planlama, Denetleme, Akreditasyon ve Koordinasyon Kurulu – YÖDAK). Established in 1988, the Council regulates the activities of higher education institutions with respect to research, governing, planning and organization. The higher education institutions are established within the framework of the Higher Education Law. All programs of higher education should be accredited by YÖDAK.

Higher education in North Cyprus comprises all post-secondary higher education programs, consisting of short, first, second, and third cycle degrees in terms of terminology of the Bologna Process. The structure of North Cyprus higher education degrees is based on a two-tier system, except for dentistry, pharmacy, medicine and veterinary medicine programs which have a one-tier system. The duration of these one-tier programs is five years except for medicine which lasts six years. The qualifications in these one-tier programs are equivalent to the first cycle (bachelor degree) plus secondary cycle (master degree) degree. Undergraduate level of study consists of short cycle (associate degree) - (önlisans derecesi) and first cycle (bachelor degree) - (lisans derecesi) degrees which are awarded after the successful completion of full-time two-year and four-year study programs, respectively.

The graduate level of study consists of the second cycle (master degree) – (yüksek lisans derecesi) and third cycle (doctorate) – (doktora derecesi) degree programs. The second cycle is divided into two sub-types named master without thesis and master with thesis. Master programs without thesis consist of courses and semester projects. The master programs with a thesis consist of courses, a seminar, and a thesis. Third cycle (doctorate) degree programs consist of completion of courses, passing a

qualifying examination and a doctoral thesis. Specializations in dentistry, accepted as equivalent to third cycle programs are carried out within the faculties of dentistry. Specialization in medicine, accepted as equivalent to third cycle programs are carried out within the faculties of medicine, and university hospitals and training hospitals operated by the Ministry of Health.

Universities consist of graduate schools (institutes) offering second cycle (master degree) and third cycle (doctorate) degree programs, faculties offering first cycle (bachelor degree) programs, four-year higher schools offering first cycle (bachelor degree) degree programs with a vocational emphasis and two-year vocational schools offering short cycle (associate degree) degree programs of strictly vocational nature.

Second cycle degree holders may apply to third cycle programs if their performance at the first cycle degree level is exceptionally high and their national central Graduate Education Entrance Examination (ALES) score is also high and their application is approved. The doctoral degree is conferred subject to at least one publication in a cited and refereed journal.

17. Employment Opportunities for Graduates and Access to Graduate Programs

17.1. Employment Opportunities for Graduates

Graduates of Near East University's Software Engineering Program have broad career prospects in both the Turkish Republic of Northern Cyprus (TRNC) and Türkiye, across the public and private sectors. They may serve in the Information Technologies, Software, and Informatics units of banks, universities, hospitals, public institutions, and private companies. In addition, they can be employed in the human resources and/or research & development departments of manufacturing firms. Typical professional roles include system analyst, application developer/programmer, database administrator, network designer, security manager, system evaluator, systems programmer, systems designer, and standards and methods auditor. Graduates may also work as end-user support specialists in production, marketing, finance, management, and human resources functions.

17.2. Access to Graduate Programs

Upon completion of the bachelor's degree, graduates are eligible to apply to master's and doctoral programs. They may continue their academic studies in software engineering, computer engineering, information technologies, and related fields. Information on admission requirements and program prerequisites is provided to applicants, and guidance is offered regarding inter-university mobility and scholarship opportunities. Graduate education deepens professional knowledge and skills, enhances prospects for an academic career, and contributes to specialization within the field.

18. ADDITIONAL INFORMATION

The Near East University Software Engineering Program is structured according to contemporary engineering and software development approaches and adopts an interdisciplinary education model that aims to provide students with a comprehensive blend of theoretical knowledge and practical experience.

Difference from Similar Programs

This program not only aims for students to acquire theoretical knowledge but also to develop essential professional skills such as problem-solving, project management, software development, and teamwork. With its practice-oriented structure and use of up-to-date technologies, it stands among the distinguished software engineering programs in Northern Cyprus.

Opportunities Offered

Throughout the program, students participate in real-world software projects and receive mentorship from expert academicians. Career guidance, collaboration with technology companies, and employment opportunities are also provided for graduates.

Applied Training

During their undergraduate education, each student gains hands-on experience in real project environments, while enhancing their professional competencies through software project development, group work, and prototype creation.

Tools Used

Within the program, industry-standard tools such as Git, Docker, Kubernetes, AWS, Python, Java, C#, React, Node.js, and SQL/NoSQL databases are actively utilized.

Success Stories

Graduates of the program work as software developers, DevOps engineers, or data analysts in technology companies in Northern Cyprus and Turkey. Some graduates have also established their own startups and delivered successful projects in the industry.

Additional Activities

Throughout the program, students' multidimensional development is supported through technical workshops, guest speaker sessions, seminars , and online events.

Additional Resources for Development

At the end of the program, students are provided with recommended resources such as contributing to open-source projects, advanced online software courses, certification programs, and up-to-date technical documentation to sustain their professional development.