4.2 Programme learning outcomes:

Aims

1. To cultivate statisticians, researchers, and scientists who possess the competence to advance their acquired knowledge in statistics and statistical thinking skills in both disciplinary and interdisciplinary areas of specialisation such as theoretical statistics, data science, financial statistics, and statistics in health sciences and, who are thereby equipped with the ability to utilise and develop future technologies.
2. To enhance students' awareness of social responsibility and commitment to the common good by equipping them with the ability to act responsibly in ways that promote environmental awareness, sustainability, accessibility, inclusivity, and well-being, as well as fostering their critical thinking and ethical decision-making skills.
3. To develop and implement innovative educational approaches that meet current scientific and societal challenges, broaden students' career prospects and scientific proficiency, and promote interdisciplinary interaction and specialization.
4. To build stronger links between the university and industry that enable students to develop problem-solving, entrepreneurial, and lifelong learning skills, strengthen their theoretical knowledge through practice, and enhance their employability.
5. To actively integrate artificial intelligence and technological solutions into education and research, continuously enhance digitalisation initiatives, and consequently apply teaching, learning, and assessment methods that address current demands.
6. To increase the Department's international recognition and facilitate the exchange of knowledge and experience among faculty and students at national and global levels through national and international academic exchange programmes, collaborative projects, and dual degree opportunities.

Objectives

The objective of this programme is to cultivate statisticians, researchers, and scientists who

- Possess a strong foundation of theoretical and applied knowledge to conduct advanced-level studies in the field of statistics; have internalised statistical thinking; and are capable of effectively using acquired knowledge and statistical thinking skills in identifying, modelling, and solving problems in the fields such as theoretical statistics, data science, finance and health sciences,
- Act responsibly in ways that promote environmental awareness, sustainability, accessibility, inclusivity, and well-being and who have acquired skills in critical thinking, entrepreneurship, problem solving, ethical decision-making, and lifelong learning,
- Have the skills of using and developing current artificial intelligence and information technologies and the competence to advance their acquired knowledge in statistics and statistical thinking skills in disciplinary and interdisciplinary areas of specialisation such as theoretical statistics, data science, financial statistics, and statistics in health sciences,
- Are able to use statistical terminology in both Turkish and English, conduct field-related research, collaborate in team-based settings, and effectively present their work,
- Have the competence to work in managerial, research, and applied roles in national and international institutions in both the public and private sectors as individuals with the ability to define their career goals and manage their professional development and who are committed to professional ethical values.

Programme Learning Outcomes

Upon successful completion of the programme, students will be able to

PO-1) Use their theoretical and applied knowledge in the science of statistics to identify, model, and solve problems related to the field.

PO-2) Demonstrate competence in identifying statistical problems, selecting appropriate data collection methods, organizing and interpreting data, and select and apply necessary analysis and modelling methods to solve these problems.

PÇ-3) Analyse and interpret a phenomenon, process, or product from a statistical perspective and develop solutions to encountered problems using appropriate modern statistical methods.

PO-4) Synthesise knowledge acquired from different disciplines through an interdisciplinary approach.

PO-5) Advance their acquired knowledge in statistics and statistical thinking skills in both disciplinary and interdisciplinary areas of specialisation such as theoretical statistics, data science, financial statistics, and statistics in health sciences.

PO-6) Use at least one programming language and computer and artificial intelligence technologies widely employed in statistics for problem-solving, data analysis, and simulations.

PO-7) Follow scientific and technological developments in statistics and related fields, assess career opportunities, identify personal and professional development goals, and adopt lifelong learning strategies to achieve these goals.

PO-8) Act with a sense of social responsibility and justice and in accordance with professional ethical principles, quality standards, and universal values by taking into account potential legal and societal consequences of their scientific research and professional activities.

PO-9) Work effectively both independently and as part of a team.

PO-10) Access reliable sources of information, conduct literature reviews, and design and carry out academic research in the field of statistics.

PO-11) Effectively communicate statistical topics, theories, proofs, research, and problem solutions to all relevant stakeholders using appropriate mathematical terminology, both orally and in writing, in Turkish and in English.

Occupational Profile of Graduates

Graduates of the Bachelor Programme in Statistics possess in-depth knowledge in areas such as probability theory, parametric and non-parametric statistical methods, multivariate analysis, experimental design, regression techniques, and data mining. They acquire advanced skills in the collection, organisation, analysis, interpretation, and modelling of data, and are capable of selecting appropriate methods for various data types while evaluating results within both scientific and societal contexts. Accordingly, they are equipped with the competencies required to contribute to data-driven decision-making processes across a wide range of fields, including health, social sciences, economics, finance, engineering, biology, education, public administration, and technology.

Graduates may pursue academic careers by continuing their studies in master's and doctoral programmes in mathematics or other related fields and may take on active roles in scientific projects conducted at universities, research institutes, and national and international institutions.

In addition to the high-quality discipline-specific education they receive:

Graduates who have completed the "Data Science Certificate Programme" may work in technology companies, the finance sector, retail and e-commerce, healthcare services,

manufacturing and logistics, public services, data analysis departments of institutions, IT units of companies, and educational and R&D institutions.
Graduates who have completed the “Financial Statistical Methods Certificate Programme” may work in the banking and finance sectors, insurance companies, corporate accounting departments, and units responsible for budgeting and planning, as well as in educational and R&D institutions.
Graduates who have completed the “Statistics in Health Sciences Certificate Programme” may work in R&D departments within the public and private sectors conducting research in health and medicine, as well as in finance and insurance sectors, corporate accounting and budgeting departments, and educational and R&D institutions.
Graduates who have completed the “Theoretical Statistics Certificate Programme” may work in data analysis, research, and modelling roles within public institutions, private sector companies, and educational and R&D institutions.

Graduation Requirements
The Bachelor’s Degree is awarded to students who have successfully completed all courses in the curriculum, and have obtained accumulative grade point average of at least 2.0 on scale 2.0-4.0.