



Why Applied Mathematics?

Mathematics is creative, exciting and is the future. Without mathematics, modern key technologies would be unimaginable.

Institute of Applied Mathematics (IAM) was established in 2002 at METU to educate graduates from various disciplines with the objective of developing and applying their skills for solving real life problems in science, engineering, finance and industry.

About 50 scientists from different fields contribute to teach and research at the IAM and 277 students graduated since 2004, among them 45 with Ph.D. degrees.

Why Study Actuarial Sciences?

Actuary as a profession has consistently been rated one of the top jobs in many countries. Actuaries are always in demand as the world confronts risk. They participate in high-level business decision-making in every industry and are the backbone for the companies in financial and insurance sector.

Actuarial Science is a multidisciplinary program providing a balanced training in the financial and mathematical analysis of complex insurance issues. It focuses on mathematical model-building in the various specialized fields of insurance: life insurance, non-life insurance, pension funds and reinsurance.

Importance of Actuarial Sciences in Turkey

Turkey has been encountered to risky financial environment due to growing economy with abridging west and east economies which makes the country a financial hub in the Middle East.

High rate of young population results in the change of population dynamics and this requires the need of actuaries to handle with pension system.

Frequently occurring natural catastrophes, especially earthquakes, require high demand for knowledgeable actuaries to make analysis and deal with modeling and strategy development.

Turkish regulations bring requirement for insurance companies to recruit at least one actuary which results in an urgent need for actuaries.

Why Actuarial Sciences at METU?

METU was ranked in the top 80 among the world's most reputable 100 universities in the last three years according to "The Times Higher Education World Reputation Rankings".

METU was also ranked among the Top Universities in the World in 9 subjects according to Quacquarelli Symonds (QS) of UK. Mathematics, Statistics-Operations Research, Economics-Econometrics, Computer Science and Information Systems are the subjects in the top 200 university list in 2014, which are the interdisciplinary research areas of the IAM.

The academic staff of METU includes knowledgeable and valuable academicians who are experts in interdisciplinary teaching and research. The language of education is English.

A total number of 28 students have graduated with M.Sc. degree in Actuarial Sciences Program since 2009.

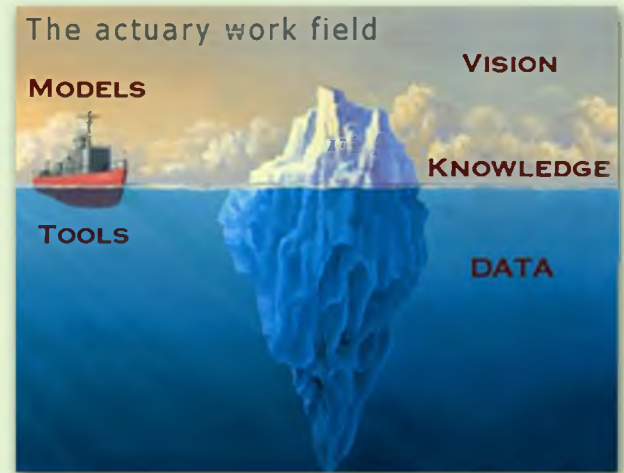
Objectives of Actuarial Sciences Program

Analysis and evaluation of financial assets require collaboration between unique abilities of actuarial science and financial engineering.

Actuarial Science develops an understanding of the fundamental probability tools for assessing risk quantitatively and provides an ability to apply these tools to the problems encountered in actuarial science.

The graduates are educated to gain ability to make identification, quantification, assessment and management of risk uncertainty for real life problems through specified curriculum and provided internship opportunities.

The knowledge in Actuarial Sciences is applied in practice within the combined interdisciplinary experience of the IAM.



Suitable for Students from all Disciplines

The program is suitable for all students who have Bachelor's degree from Faculty of Sciences, Faculty of Economics and Administrative Sciences, Faculty of Engineering.

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An actuarial degree makes you competent in Mathematics, Statistics, Economics, Finance and as well as in other subjects.



Structure of the Graduate Program

M.Sc. Degree with Thesis and Non-thesis options are offered.

Core Courses

- IAM 521 Financial Management
- IAM 522 Stochastic Calculus for Finance
- IAM 530 Elements of Probability and Statistics
- IAM 556 Simulation
- IAM 541 Probability Theory
- IAM 545 Fundamentals of Insurance
- IAM 546 Actuarial Risk Theory
- IAM 582 Life Insurance Mathematics
- IAM 583 Pension Fund Modeling
- IAM 584 Advanced Actuarial Mathematics

Summer Internship is required

Selected Elective Courses*

- IAM 526 Time Series applied to finance
- IAM 520 Financial Derivatives
- IAM 544 Financial Risk Assessment
- IAM 522 Credibility Theory
- IAM 547 Risk Management and Insurance
- IAM 554 Interest Rate Models

*Students are encouraged to take elective courses from Economics, Business Administration, Statistics departments.
<http://iam.metu.edu.tr/courses>

Collaboration and Student Exchange

Academic collaborations with

- ▶ National and international institutions: Hacettepe University, Ankara University, Ulm University, Technical University Kaiserslautern, Albert-Ludwigs University Freiburg, Illinois State University.
- ▶ Erasmus Mundus Exchange agreements.
- ▶ Public and Private sectors: Undersecretariat of Treasury, Social Security Institute, Ministry of Development, Ministry of Food, Agriculture and Livestock, Turkish Insurance Association, Turkish Actuaries Association and insurance companies.
- ▶ Memberships to SIAM and EURO, close connections to European Actuaries Association and SOA.
- ▶ Projects with industry: "Construction of Turkish Morbidity Tables".

Conferences Organized

- ▶ ICACM - International Conference on Applied and Computational Mathematics, 2012.
- ▶ Catastrophe Insurance in Turkey, 2013.

Student Support

- ▶ Assistantship and part-time student assistantship opportunity (requires Turkish citizenship)
- ▶ Turkish Scientific Research Council (TÜBİTAK) Scholarship
- ▶ Assistantship in TÜBİTAK Research Projects

- ▶ Techno-Thesis: Joint Thesis Project with METU Techno Park
- ▶ 50% Higher Education Council (YÖK) Scholarship with the deduction tuition fee for foreign students being successful in the program.

Job Opportunities

Job opportunities both in public and private sectors are;

- ▶ Insurance and Reinsurance companies
- ▶ Undersecretariat of Treasury
- ▶ Social Security Institution
- ▶ Consultancy companies
- ▶ Insurance brokers
- ▶ Banks

Actuarial Exams

The program at IAM actively takes part in the preparation of Actuarial Examination in Turkey and the content of the courses compatible with the national and international actuary examinations. The lectures aim to prepare students to the actuarial exams in Turkey which are split into three levels.

After completing the first level exams, a candidate becomes an "actuarial trainee", after the second level an "assistant actuary", and after the third level and 3 years of related work experience the candidate becomes an "actuary". The success of our students and graduates in these examinations are remarkable.



Admission Requirements and Application

The selection process requires documentation of the followings:

- ▶ METU-EPE (English Proficiency Exam) ≥ 65 or TOEFL-IBT ≥ 79
- ▶ ALES ≥ 75 or GRE-Quantitative Score ≥ 713
- ▶ At least 2 reference letters
- ▶ Letter of intention

Application Deadline: June 20, 2014
Application Deadline to EPE: June 10, 2014
Applicants will be interviewed when necessary.
For application deadline and more information:
<http://iam.metu.edu.tr/universitys-application-page>