



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 Scientific Computing?

Scientific Computing is a multidisciplinary area that encompasses applications in science/engineering, applied mathematics, numerical analysis, and computer science.

Today, many problems in science and engineering can only be treated by means of efficient use of computers.

Scientific computing is now regarded as the “third pillar” of science, along with theory and experiment, in the advancement of scientific knowledge and engineering practice.

Importance of Scientific Computing in Turkey

The importance of efficient and accurate computational techniques is regarded as a factor in economic growth and competition has been recognized by leading industry nations.

Specific areas for Turkey are finding new energy resources, development of energy saving devices, solving large scale industrial problems and development of a sustainable environment.

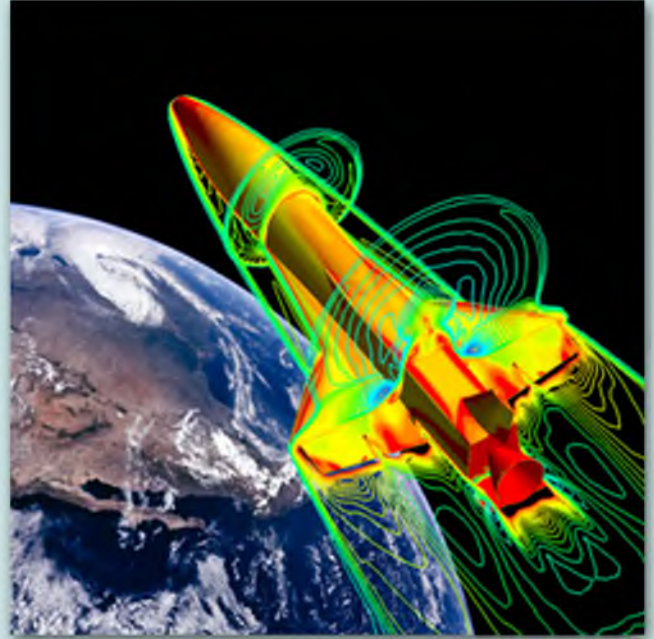
Why Scientific Computing at METU?

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.

METU has knowledgeable and valuable academic staffs who are experts in interdisciplinary teaching and research areas. The language of education is English

A total number of 46 students are graduated with M.Sc. and Ph.D. degrees in Scientific Computing Program since 2004.



Objectives of Scientific Computing Program

Mathematical modelling and developing efficient and reliable algorithms are the main ingredients of the program.

The aims of the Program are

- ▶ to educate graduates from different disciplines with the aim to develop and apply their skills to the solution of real life problems from science, engineering and industry,
- ▶ to establish the contacts between researchers from the Scientific Computing program and Turkish industry, demonstrate the benefits of modern methods for SC for industrial problems

Suitable for Students from all Disciplines

Scientific Computing is suitable for students from Faculty of Science and Faculty of Engineering who will work on interdisciplinary projects. Students are encouraged to work on real life problems with industrial partners.



Structure of the Graduate Program

M.Sc. Degree with Thesis and Non-thesis, Ph.D. Degree are offered.

Core Courses

IAM 561 Scientific Computing I
IAM 562 Scientific Computing II
IAM 566 Numerical Optimization
IAM 572 Finite Elements for Partial Differential Equations

Selected Elective Courses*

IAM 529 Applied Nonlinear Dynamics
IAM 557 Inverse Problems
IAM 557 Statistical Learning and Simulation
IAM 573 Parameter Estimation and Applications
IAM 664 Inverse Problems
IAM 667 Control and Optimization of Differential Equations

*Students are encouraged to take elective courses from related departments.

<http://iam.metu.edu.tr/courses>

Collaboration and Student Exchange

Academic collaborations with

- ▶ Erasmus Mundus Exchange program agreements with more than 13 universities in Europe.
- ▶ SIAM (Society of Industrial and Applied Mathematics)
- ▶ METU Student Chapter (<http://siam.metu.edu.tr/>)
- ▶ EUROPT European Operations Research Society, Optimization Working Group

Conferences Organized

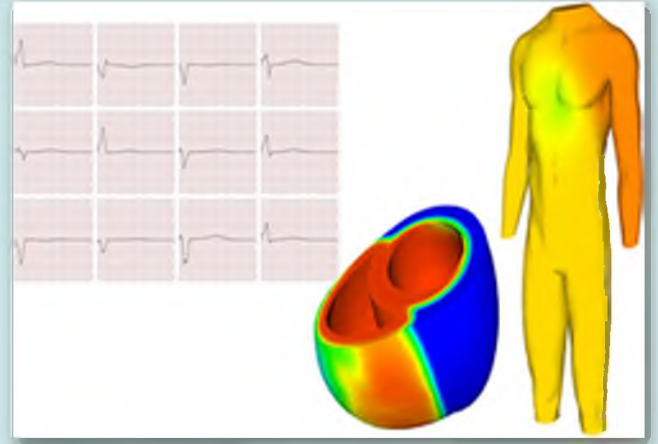
- ▶ Workshop on Advances in Continuous Optimization, 2003
- ▶ EURO Summer Institute Optimization and Data Mining, 2004
- ▶ Networks in Computational Biology, 2006
- ▶ Workshop on Hybrid Systems: Modeling, Simulation and Optimization, 2008
- ▶ ICACM - International Conference on Applied and Computational Mathematics, 2012

Student Support

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

- ▶ Universities
- ▶ Techno parks
- ▶ Defense industry
- ▶ Various branches of engineering



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>