

## Why Study at Sakarya University?

Sakarya is one of the most central and beautiful states in Turkey. It is full of natural beauties, green landmarks and historical places.



Sakarya is also an economical city for students.

Istanbul is about one and half hour away from the campus by car or bus. The capital city, Ankara, is nearly 300 km's away. The campus is fully equipped with modern buildings and overlooks the very famous Sapanca Lake.



Sakarya University has more than 50,000 students enrolled in higher-education, undergraduate and graduate

studies in such areas as Engineering, Natural Sciences, Medicine, Law and Management. Each year hundreds of international students also pursue their studies individually or through some programs

such as ERASMUS Student Exchange. Sakarya University is constantly

seeking for improvements in educational processes and is the first university in Turkey to start quality development and evaluation and to receive the National Quality Reward.



### Location:

City is located between 29°57' and 30°53' east 40°17' and 41°13' north. It is 1 degree, 25 minutes east of Istanbul.

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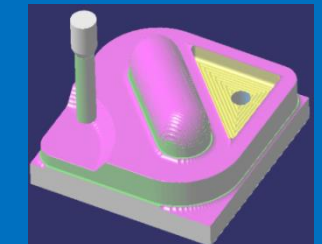
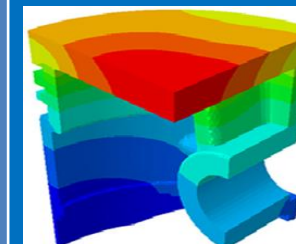
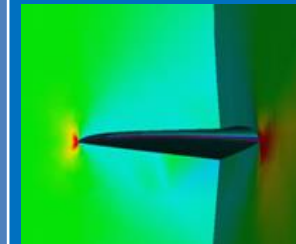
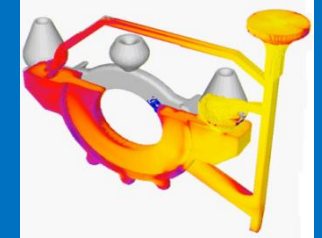
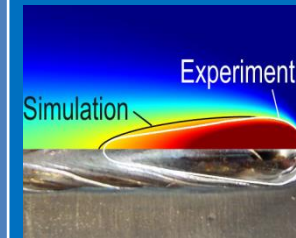
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# Computational Mechanics & Manufacturing

## Graduate Studies



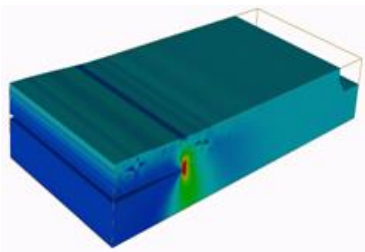
**SAKARYA**  
UNIVERSITY

## Computational Mechanics and Manufacturing Graduate Program

This is a graduate program focusing on computational aspects of engineering mechanics and manufacturing processes used for many advanced products. It offers both Master's and Ph.D. studies for those who would like to become experts in the field of simulation-based applied engineering mechanics & manufacturing, as well as for future scientists who will contribute to the further scientific developments in this area.

## Computational Mechanics and Manufacturing Focus Areas

Design and manufacturing of today's high-tech engineering products involve detailed computational



analyses of fluid and solid mechanics models and simulations on physics and optimization/scheduling of their manufacturing processes. Materials knowledge is also a key part of these efforts for accurate predictions. Therefore, this graduate program aims at developing well-educated experts and scientists by offering a wide range of graduate courses in the following main areas:

- ✓ Computational Engineering Mechanics
- ✓ Simulations of Manufacturing Processes
- ✓ Optimization and Scheduling of Manufacturing Processes
- ✓ Materials Science and Properties
- ✓ Computational Statistics and Probability

## Graduation Requirements & Courses\*

Having completed two core courses and six elective courses with a total of 60 ECTS course credits, both Master's and Ph.D. programs require completion of a graduation thesis/dissertation.

### Core Courses

- Advanced Engineering Mathematics
- Numerical Methods in Engineering

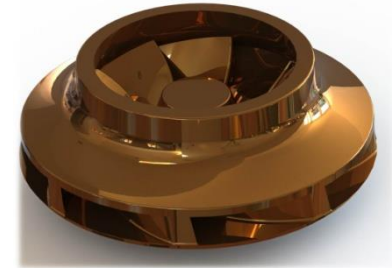
### Elective Courses

- Advanced Composite Materials
- Advanced Manufacturing Processes
- Computational Fracture Mechanics
- Computational Metal Forming Technology
- Engineering Materials Selection
- Computational Metal Forming Technology
- Failure of Engineering Materials
- Finite Element Method-I
- Finite Element Method-II
- Foundations of Solid Mechanics
- Friction and Wear in Engineering Materials
- Introduction to Quantum Mechanics
- Mechanical Behavior of Engineering Materials
- Optimization and Operations Management
- Probability and Computational Statistics
- Statistical Computing
- Vehicle Design

\*Course offerings may be subjected to change.

## Why Master's or Ph.D. Degree in Computational Mechanics & Manufacturing?

Students who graduate with a Master's degree from the program are expected to have leading engineering positions in



industries focusing on design and manufacturing of high-tech products and contribute to the ever increasing technological needs of humanity. Individuals earning a PhD degree from the program will be candidates for strong academicians and scientists to educate tomorrow's engineers and perform cutting-edge research and developments in computational mechanics and manufacturing.

## Faculty Members

Hatem Akbulut, Prof. (PhD Istanbul Tech., Turkey)

Ali O. Ayhan, Prof. (PhD Lehigh, USA)

Mehmet Firat, Prof. (PhD Sakarya, Turkey)

Ufuk Kula, Assist.Prof.Dr. (PhD Uni of Michigan, USA)

Sefer C. Okumuş, Prof.Dr. (PhD Istanbul Tech., Turkey)

Sunal A. Parasız, Assist. Prof. (PhD New Hampshire, USA)

Hakan S. Soyhan, Prof. (PhD Istanbul Tech., Turkey)

Bariş T. Tonguç, Prof. (PhD Syracuse, USA)

Metin Yaman, Prof. (PhD Sakarya, Turkey)