

**Type & field of studies/
Program title:** **M.Sc in Mechanics and Machine Design
Advanced Computational Mechanics**

Faculty/Department: Faculty of Mechanical Engineering
Institute of Applied Mechanics

Duration 4 semesters

Erasmus subject code: 06.1

Duration: 2 Academic Years

ECTS credits: 120

Program description: Advanced Computational Mechanics (ACM) is playing an ever-increasing role in the activities of many international scientific institutions, research and development laboratories as well as technological centres. ACM provides a support for many activities related to science and technologies, including the reliability engineering. The use of computers is now essential in the process of design and structural optimisation. It begins with the proper choice of modern materials and ends up with setting all the parameters of the final complex product.

The aim of this Master Programme in Advanced Computational Mechanics is to provide the student with a solid scientific and technical basis of theoretical and applied mechanics and modern numerical methods. The programme includes compulsory lectures, tutorials, laboratories and practical exercises in computational mechanics. It is thought to equip the students with the set of tools needed in the professional life comprising scientific research, technological development and large European Projects.

Program of studies:

1 st semester	Hours	ECTS
Analytical Mechanics	60	6
Solid State Physics	30	4
Mathematical Modelling	30	4
Materials Science	45	5
Computer Methods for Eng.	45	5
Solid Mechanics	60	6
2 nd semester		
Modelling of Dynamical Sys.	30	4
Continuum Damage Mechanics	30	3

Fluid Mechanics	45	5
Thermodynamics	45	5
Stability of Structures	30	4
Structural Optimisation	30	4
Reliability of Structures	30	3

3rd semester

Modelling in Machine Design	60	6
Modern Structural Materials	30	4
Integrated Processing Systems	60	6
Object Oriented Programming	15	2
Elective Topic	30	4
Adv. Modelling of Mat. & Struct.	60	6
Individual Project	90	9

4th semester

Large Scale Europ. Projects	15	2
Diploma Seminar	30	3
Diploma Work	180	20

Web page: <http://riad.pk.edu.pl/~m-0/english/efirst.htm>

Eligibility/Admission: Students who have completed Bachelor Programme in Mechanical Engineering or related field and obtained Bachelor's Degree

Fees: 4000 Euro per year

Contact person: Professor Błażej Skoczeń (48-12) 628 33 84;
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Application procedures Completed application form should be sent to the following address:

& deadlines:

Cracow University of Technology
International Relations Office
31-155 Kraków
Ul. Warszawska 24
e-mail: pw@pk.edu.pl

Remarks: Individual programme of studies in English is available