

| | |
|---|-------------------------------------|
| Title Mechanics | Code 10102514210102102014 |
| Field Management and Production Engineering | Year / Semester 1 / 2 |
| Specialty - | Course core |
| Hours Lectures: 2 Classes: 2 Laboratory: - Projects / seminars: - | Number of credits 5 |
| | Language polish |

Lecturer:

- Tadeusz J. Hoffmann, Ph. D. Sc.
Phone: +48(61)6652619
e-mail: tadeusz.hoffmann@put.poznan.pl

Faculty:

Faculty of Mechanical Engineering and Management
ul. Piotrowo 3
60-965 Poznań
tel. (061) 665-2361, fax. (061) 665-2363
e-mail: office_dmef@put.poznan.pl

Status of the course in the study program:

- Core course at the Faculty of Mechanical Engineering and Management,
field of study - Management and Production Engineering.

Assumptions and objectives of the course:

- The students should obtain the knowledge on the classical particle
and rigid-body mechanics.

Contents of the course (course description):

- Kinematics of particles, velocity and acceleration. Kinematics of the rigid body, the
rectilinear and rotating motion, plain and spherical motion, general motion.
Newton's Laws and dynamic equations of particles. Momentum and moment of momentum.
Work, power and kinetic energy. Conservative forces and potential energy, law of
conservation of mechanical energy. Centre of mass, momentum, angular momentum and kinetic
energy of a rigid body, moment of inertia and radius of gyration.
Couples and moments, a reduction theorem. Dynamic equations of motion of a rigid body.
Conditions for equilibrium, rigid-body statics.

Introductory courses and the required pre-knowledge:

- Fundamentals of differential, integral and vector calculus.

Courses form and teaching methods:

- Lectures and classes.

Form and terms of complete the course - requirements and assessment methods:

- Written tests and oral examination.

Basic Bibliography:

Additional Bibliography: