UNIVERSITY OF LJUBLJANA
Faculty of Mechanical Engineering

www.Ladisk.si

Advanced dynamics – 2025/2026

Course syllabus

Lecturer:
prof. dr. Gregor Čepon (gregor.cepon@fs.uni-lj.si, tel. 01 4771 229, room DS-P6)

Assistant:
assist. prof. dr. Martin Česnik (martin.cesnik@fs.uni-lj.si, tel. 01 4771 227, room DS-P4)

Lectures	Tutorials
Wed.: 14:00-16:00, classroom I/4A	Mon.: 8:00-10:00, classroom I/4A

Course webpage is accessible on this link.

1. Obtaining a degree

Option A: Regular activity during semester

Student can obtain a positive degree with regular activity during semester according to next tables:

Tutorials grade:

Weight	Activity	Min. treshold
0%	Attendance on classroom tutorials	min. 80%
5%	Attendance on lab. tutorials	min. 100%
45%	1. colloquium	min. 40%
50%	2. colloquium	min. 40%
100%	Total sum	min. 50%

Lectures grade:

Weight	Activity	Min. treshold
100%	Written theoretical exam	min. 50%

Grade inscription is possible only in June exam period after successful oral defence of the grade.

1. Colloquium:
Contents: analytic statics, analytic dynamics, periodic and impulse response of SDOF systems
Expected date: 7.-10.4.2026

2. Colloquium:
Contents: 1. Colloquium, dynamics of MDOF systems, dynamics of continuous systems
Expected date: 20.5.-22.5.2026

Laboratory tutorials:

- Vibration testing (2.3.2026)
- Analytic mechanics (23.3.2026)
- MDOF dynamic system (13.4.2026)
- Belt oscillations (11.5.2026)
- Flexural dynamics of a beam (25.5.2026)

Option B: Classical exam

In the classic exam, there is an exam in exercises (90 minutes) and an exam in theory (60 minutes). In order to take the exam, the student must meet the conditions related to participation in classroom and laboratory tutorials

Weight	Activity	Min. treshold
0%	Attendance on classroom tutorials	80% attendance
0%	Attendance on lab. tutorials	100% attendance
50%	Exam in theory	50%
50%	Exam in exercises	50%
100%	Final result	min. 50%

2. References

Meirovitch L.	Methods of ANALYTICAL DYNAMICS, McGraw-Hill, Inc., str. 45-100, 1970
Thomson W.T., Dahlen M.D.	Theory of Vibration with Applications, Prentice Hall, 1998
Rao, S.S.	Mechanical vibrations : Addison-Wesley Publishing Company