Recomended pass through the study plan

Name of the pass: SpaceMaster - Passage through study

Faculty/Institute/Others: Faculty of Electrical Engineering

Department:

Pass through the study plan: Erasmus Mundus Master Course - SpaceMaster II

Branch of study guranteed by the department: Welcome page

Guarantor of the study branch:

Program of study: Cybernetics and Robotics Type of study: Follow-up master full-time

Note on the pass:

Coding of roles of courses and groups of courses:

P - compulsory courses of the program, PO - compulsory courses of the branch, Z - compulsory courses, S - compulsory elective courses, PV - compulsory elective courses, F - elective specialized courses, V - elective courses, T - physical training courses

Coding of ways of completion of courses (KZ/Z/ZK) and coding of semesters (Z/L):

KZ - graded assesment, Z - assesment, ZK - examination, L - summer semester, Z - winter semester

Number of semester: 1

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BE3M35CSP	CanSat-Projekt	Z,ZK	9	2P+2S	Z	Р
BE3M35ISP	Introduction to Space Physics	Z,ZK	8	2P+2S	Z	Р
BE3M35SDY	Space Dynamics	Z,ZK	5	2P+2S	Z	Р
BE3M35SSD	Spacecraft System	Z,ZK	8	2P+2S	Z	Р

Number of semester: 2

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BE3M35ELS	Electronics in Space	Z,ZK	8	2P+2S	L	Р
BE3M35ORO	Optic- and Radar-based Observations	Z,ZK	8	2P+2S	L	Р
BE3M35SPP	Space Physics	Z,ZK	7	2P+2S	Z	Р
BE3M35SEI	Spacecraft Environment Interactions	Z,ZK	7	2P+2S	L	Р

Number of semester: 3

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BE3M35CSA	Control Systems for Aircraft and Spacecraft	Z,ZK	7	2P+2L	Z	Р
BE3M35IDP	Individuální projekt	Z	8	0P+6S	Z	Р
BE3M35SSM	Space systems, modeling and identification	Z,ZK	7	4P+2C	Z	Р

Number of semester: 4

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
BE3M35DIP	Diploma Thesis	Z	30	22S	L	Р
BE3M35ORC	Optimal and robust control design	Z,ZK	8	2P+2C	L	Р

List of courses of this pass:

Code	Name of the course	Completion	Credits
BE3M35CSA	Control Systems for Aircraft and Spacecraft	Z,ZK	7
System Approach.	Object, System, Model. Dynamic Systems Continuous and Discrete Time, Qualitative Analysis of Systems. Poincare Map, Chaos. Lir	ear Systems. Syst	em Stability,
Uncerta	nty and Robustness. Controllability and Observability. State Feedback, State Injection, Duality. Stochastic Systems, Realization of St	ochastic Processes	S.
BE3M35CSP	CanSat-Projekt	Z,ZK	9
BE3M35DIP	Diploma Thesis	Z	30
Independent final	comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or	ner branch of study	, which will
be specified l	by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the compreh	ensive final examir	nation.
BE3M35ELS	Electronics in Space	Z,ZK	8
BE3M35IDP	Individuální projekt	Z	8
Independent worl	in the form of a project. A student will choose a topic from a range of topics related to his or her branch of study, which will be speci	fied by branch dep	artment or
	branch departments. The project will be defended within the framework of a subject.		
BE3M35ISP	Introduction to Space Physics	Z,ZK	8
BE3M35ORC	Optimal and robust control design	Z,ZK	8
This advanced cou	rise on control design will cover modern methods for optimal and robust control design. Emphasis will be put on practical computatio	nal design skills. U	nifying idea
of the course is tha	t of minimization of a system norm. Depending on which norm is minimized, different properties of the resulting controller are guarant	eed. Minimizing H2	norm leads
	LQ/LQG optimal control trading off the performance and the effort, while minimizing Hinf norm shifts the focus to robustness agains		
,	an extensions to Hinf optimal control design that take the structure of the uncertainty into consideration represents a very powerfull t		U
_	aside yet being useful in space missions are the methods for time-optimal and suboptimal control. As a self-contained add-on to the c		•
of semidefinite prog	gramming and linear matrix inequalities (LMI) will be made, as these constitute a very elegant theoretial and a powerful computational to	ool for solving all th	e previously
	introduced tasks in optimal and robust control.		
BE3M35ORO		Z,ZK	8
BE3M35SDY	Space Dynamics	Z,ZK	5
BE3M35SEI	Spacecraft Environment Interactions	Z,ZK	7
BE3M35SPP	Space Physics	Z,ZK	7
BE3M35SSD	Spacecraft System	Z,ZK	8
BE3M35SSM	Space systems, modeling and identification	Z,ZK	7

For updated information see http://bilakniha.cvut.cz/en/f3.html Generated: day 2025-11-28, time 20:08.