

Mechanical Engineering, Master's programme

120 credits

Mechanical Engineering, masterprogram

6MMEC

Valid from:

Determined by

Board of Studies for Mechanical Engineering and Design

Date determined

2015-01-16

Introduction

For the complete syllabus, also see "Tekniska högskolans studiehandbok": http://kdb-5.liu.se/liu/lith/studiehandboken/enutbplan.lasso? &up_year=2017&up_ladokkod=6MMEC

Entry requirements

Degree in Swedish

Master of Science (120 credits) with a major in Mechanical Engineering

Degree in English

Master of Science (two years) with a major in Mechanical Engineering



Curriculum

Semester 2 (Spring 2017)

Period 1 TMAL51 Aircraft Conceptual Design 6 A1X 2 E TMHL41 Continuum Mechanics 6 A1X 2 E TMHL62 The Finite Element Method; advanced course 6 A1X 4 E TMKM40 Engineering Materials - New Materials 6 A1X 2 E TMKT48 Design Optimization 6 A1X 3 E TMMS30 Multi Body Dynamics and Robotics 6 A1X 1 E TMMV08 Computational Fluid Dynamics 6 A1X 1 E TMPS42 Production System Automation 6 A1X 1 E TMQU31 Statistical Quality Control 6 A1X 2 E TMHL61 Damage Mechanics and Life Analysis 6 A1X 1 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM09 Engineering Materials, Welding and Manufacturing Technology 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMN50 Aerodynamics, Continued Course 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMMQ004 Six Sigma Quality 6 A1X 3 E TMM006 Operations Systems 6 A1X 3 E TMMM007 Vehicle Propulsion Systems 6 A1X 3 E TMM0004 Six Sigma Quality 6 A1X 3 E TPMM006 Operations Systems 6 A1X 3 E TSFS03 Vehicle Propulsion Systems 6 A1X 3 E TSFS03 Vehicle Propulsion Systems 6 A1X 3 E	Course code	Course name	Credits	Level	Timetable module	ECV
TMHL41 Continuum Mechanics 6 A1X 2 E TMHL62 The Finite Element Method; advanced course 6 A1X 4 E TMKM40 Engineering Materials - New Materials 6 A1X 2 E TMKT48 Design Optimization 6 A1X 3 E TMMS30 Multi Body Dynamics and Robotics 6 A1X 3 E TMMV08 Computational Fluid Dynamics 6 A1X 1 E TMPS42 Production System Automation 6 A1X 1 E TMQU31 Statistical Quality Control 6 A1X 2 E TPPE54 Advanced Planning and Scheduling 6 A1X 1 E Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM09 Engineering Materials, Welding and Manufacturing Technology 6 A1X 3 E TMKT57 Product Modelling 6 A1X 3 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing 6 A1X 3 E TPMM06 Analysing and Improving Manufacturing 6 A1X 3 E	Period 1					
TMHL62 The Finite Element Method; advanced course 6 A1X 4 E TMKM40 Engineering Materials - New Materials 6 A1X 2 E TMKT48 Design Optimization 6 A1X 3 E TMMS30 Multi Body Dynamics and Robotics 6 A1X 3 E TMMV08 Computational Fluid Dynamics 6 A1X 1 E TMPS42 Production System Automation 6 A1X 1 E TMQU31 Statistical Quality Control 6 A1X 2 E TPE54 Advanced Planning and Scheduling 6 A1X 1 E Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 A1X 3 E TMKT57 Product Modelling 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 3 E TMMV07 Computational Fluid Dynamics, advanced 6 A1X 3 E TMMV07 Production Systems 6 A1X 3 E TMMV08 Aerodynamics, Continued Course 6 A1X 3 E TMMV09 Aralysing and Improving Manufacturing 6 A1X 2 E TMMV00 Analysing and Improving Manufacturing 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing 6 A1X 3 E	TMAL51	Aircraft Conceptual Design	6	A1X	2	E
TMKM40 Engineering Materials - New Materials 6 A1X 2 E TMKT48 Design Optimization 6 A1X 3 E TMMS30 Multi Body Dynamics and Robotics 6 A1X 3 E TMMV08 Computational Fluid Dynamics 6 A1X 1 E TMPS42 Production System Automation 6 A1X 1 E TMQU31 Statistical Quality Control 6 A1X 2 E TPPE54 Advanced Planning and Scheduling 6 A1X 1 E Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 A1X 3 E TMKT57 Product Modelling 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 3 E TMMV07 Computational Fluid Dynamics, advanced 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing 6 A1X 3 E	TMHL41	Continuum Mechanics	6	A1X	2	E
TMKT48 Design Optimization 6 A1X 3 E TMMS30 Multi Body Dynamics and Robotics 6 A1X 3 E TMMV08 Computational Fluid Dynamics 6 A1X 1 E TMPS42 Production System Automation 6 A1X 1 E TMQU31 Statistical Quality Control 6 A1X 2 E TPPE54 Advanced Planning and Scheduling 6 A1X 1 E Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 A1X 3 E TMKT57 Product Modelling 6 A1X 3 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 3 E TPMM06 Analysing and Improving Manufacturing 6 A1X 3 E	TMHL62	The Finite Element Method; advanced course	6	A1X	4	E
TMMS30 Multi Body Dynamics and Robotics 6 A1X 3 E TMMV08 Computational Fluid Dynamics 6 A1X 1 E TMPS42 Production System Automation 6 A1X 1 E TMQU31 Statistical Quality Control 6 A1X 2 E TPPE54 Advanced Planning and Scheduling 6 A1X 1 E Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 A1X 3 E TMKT57 Product Modelling 6 A1X 3 E TMME11 Road Vehicle Dynamics 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing 6 A1X 3 E	TMKM40	Engineering Materials - New Materials	6	A1X	2	E
TMMV08 Computational Fluid Dynamics 6 A1X 1 E TMPS42 Production System Automation 6 A1X 1 E TMQU31 Statistical Quality Control 6 A1X 2 E TPPE54 Advanced Planning and Scheduling 6 A1X 1 E Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 A1X 3 E TMKT57 Product Modelling 6 A1X 3 E TMME11 Road Vehicle Dynamics 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 4 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMMV57 Production Systems 6 A1X 3 E TMMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing 6 A1X 3 E	TMKT48	Design Optimization	6	A1X	3	E
TMPS42 Production System Automation 6 A1X 1 E TMQU31 Statistical Quality Control 6 A1X 2 E TPPE54 Advanced Planning and Scheduling 6 A1X 1 E Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 A1X 3 E TMKT57 Product Modelling 6 A1X 3 E TMME11 Road Vehicle Dynamics 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMMS30	Multi Body Dynamics and Robotics	6	A1X	3	E
TMQU31 Statistical Quality Control 6 A1X 2 E TPPE54 Advanced Planning and Scheduling 6 A1X 1 E Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 A1X 3 E TMKT57 Product Modelling 6 A1X 3 E TMME11 Road Vehicle Dynamics 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMPS27 Production Systems 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMMV08	Computational Fluid Dynamics	6	A1X	1	Е
TPPE54 Advanced Planning and Scheduling 6 A1X 1 E Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 G2X 2 E TMKT57 Product Modelling 6 A1X 3 E TMME11 Road Vehicle Dynamics 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 3 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMPS27 Production Systems 6 A1X 2 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMPS42	Production System Automation	6	A1X	1	Е
Period 2 TMHL61 Damage Mechanics and Life Analysis 6 A1X 2 E TMKM09 Engineering Materials for Lightweight Applications 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing Technology 6 G2X 2 E TMKT57 Product Modelling 6 A1X 3 E TMME11 Road Vehicle Dynamics 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 4 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMPS27 Production Systems 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMQU31	Statistical Quality Control	6	A1X	2	E
TMHL61Damage Mechanics and Life Analysis6A1X2ETMKM09Engineering Materials for Lightweight Applications6A1X3ETMKM18Engineering Materials, Welding and Manufacturing Technology6G2X2ETMKT57Product Modelling6A1X3ETMME11Road Vehicle Dynamics6A1X1ETMMS10Fluid Power Systems and Transmissions6A1X2ETMMV07Computational Fluid Dynamics, advanced course6A1X4ETMMV56Aerodynamics, Continued Course6A1X3ETMQU04Six Sigma Quality6A1X2ETPMM06Analysing and Improving Manufacturing Operations6A1X3E	TPPE54	Advanced Planning and Scheduling	6	A1X	1	Е
TMKM09 Engineering Materials for Lightweight Applications Engineering Materials, Welding and Manufacturing Technology Engineering Materials for Lightweight 6 A1X 3 E TMKM18 Engineering Materials, Welding and Manufacturing 6 A2X 2 E Engineering Materials for Lightweight 6 A2X 2 E Engineering Materials for Lightweight 6 A2X 2 E Engineering Materials for Lightweight 6 A1X 3 E TMMT19 Product Modelling 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced 6 A1X 3 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMPS27 Production Systems 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations	Period 2					
TMKM09 Applications Engineering Materials, Welding and Manufacturing Technology TMKT57 Product Modelling 6 A1X 3 E TMME11 Road Vehicle Dynamics 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMPS27 Production Systems 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMHL61	Damage Mechanics and Life Analysis	6	A1X	2	E
TMKT57 Product Modelling 6 A1X 3 E TMME11 Road Vehicle Dynamics 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 4 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMPS27 Production Systems 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	ТМКМ09		6	A1X	3	E
TMME11 Road Vehicle Dynamics 6 A1X 1 E TMMS10 Fluid Power Systems and Transmissions 6 A1X 2 E TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 4 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMPS27 Production Systems 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMKM18		6	G2X	2	E
TMMS10Fluid Power Systems and Transmissions6A1X2ETMMV07Computational Fluid Dynamics, advanced course6A1X4ETMMV56Aerodynamics, Continued Course6A1X3ETMPS27Production Systems6A1X3ETMQU04Six Sigma Quality6A1X2ETPMM06Analysing and Improving Manufacturing Operations6A1X3E	TMKT57	Product Modelling	6	A1X	3	E
TMMV07 Computational Fluid Dynamics, advanced course 6 A1X 4 E TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMPS27 Production Systems 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMME11	Road Vehicle Dynamics	6	A1X	1	E
TMMV07 course TMMV56 Aerodynamics, Continued Course 6 A1X 3 E TMPS27 Production Systems 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMMS10	Fluid Power Systems and Transmissions	6	A1X	2	E
TMPS27 Production Systems 6 A1X 3 E TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMMV07	•	6	A1X	4	E
TMQU04 Six Sigma Quality 6 A1X 2 E TPMM06 Analysing and Improving Manufacturing Operations 6 A1X 3 E	TMMV56	Aerodynamics, Continued Course	6	A1X	3	Е
TPMM06 Analysing and Improving Manufacturing 6 A1X 3 E Operations	TMPS27	Production Systems	6	A1X	3	E
Operations 6 AIX 3 E	TMQU04	Six Sigma Quality	6	A1X	2	E
TSFS03 Vehicle Propulsion Systems 6 A1X 3 F	ТРММ06		6	A1X	3	E
	TSFS03	Vehicle Propulsion Systems	6	A1X	3	E

Semester 3 (Autumn 2017)



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
ТМКМ90	Engineering Materials - Deformation and Fracture	6	A1X	4	С
TKMJ31	Biofuels for Transportation	6	A1X	1	Е
TMAL02	Aircraft and Vehicle Design	6	G2X	4	E
TMHL19	Advanced Material and Computational Mechanics	6	A1X	1	E
TMHP02	Fluid Power Systems	6	G2X	2	Е
ТМКТ79	Collaborative Multidisciplinary Design Optimization	6	A1X	2	E
TMME14	Machine Elements, Second Course	6	A1X	3	Е
TMME40	Vibration Analysis of Structures	6	A1X	3	Е
TMMS11	Models of Mechanics	6*	A1X	3	Е
TMMS13	Electro Hydraulic Systems	6	A1X	2	Е
TMMV01	Aerodynamics	6	A1X	2	Е
TMPM05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	E
TMPM06	Project Course Advanced - Mechatronics	12*	A1X	-	Е
TMPM07	Project Course Advanced - Applied Mechanics	12*	A1X	-	Е
TMPM08	Project Course Advanced - Manufacturing Engineering	12*	A1X	-	E
TMPS33	Virtual Manufacturing	6	A1N	4	E
Period 2					
TAMS11	Probability and Statistics, first course	6	G2F	4	Е
TAOP18	Supply Chain Optimization	6	A1F	1	E
TMHL03	Mechanics of Light Structures	6	A1X	3	Е
TMMS07	Biomechanics	6	A1X	4	Е
TMMS11	Models of Mechanics	6*	A1X	4	E
TMMS20	Structural Optimization	6	A1X	1	Е
TMMV18	Fluid Mechanics	6	A1X	2	Е
TMMV54	Computational Heat Transfer	6	A1X	1	E
ТМРМ05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	E
ТМРМ06	Project Course Advanced - Mechatronics	12*	A1X	-	Е



Course code	Course name	Credits	Level	Timetable module	ECV
TMPM07	Project Course Advanced - Applied Mechanics	12*	A1X	-	Е
TMPM08	Project Course Advanced - Manufacturing Engineering	12*	A1X	-	E

Semester 4 (Spring 2018)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TQXX30	Degree project - Master's Thesis	30*	A1X	-	С
Period 2					
TQXX30	Degree project - Master's Thesis	30*	A1X	-	С

ECV = Elective / Compulsory /Voluntary



^{*}The course is divided into several semesters and/or periods