



**Bachelor Program of
Mechanical Engineering and Automation
(in English)**

机械工程及自动化专业本科教学计划（英文授课）

2011-2014 年实际运行的教学计划

School of Mechanical Engineering and Automation

Beihang University, Beijing, China

北京航空航天大学机械工程及自动化学院

Dec, 2014

Bachelor Program of Mechanical Engineering and Automation

[Introduction to School of Mechanical Engineering and Automation]:

School of Mechanical Engineering and Automation (SMEA), BeiHang University (BUAA) was founded in 1998, based on the Department of Manufacturing Engineering and Department of Electromechanical Engineering, with the origins of the specialties of Aircraft Manufacturing, Aircraft Engine Manufacturing Process and Aircraft Instruments, traced back to 1950s.

SMEA covers 7 disciplines including Mechanical Design and Theory, Mechanical Manufacturing and Automation, Mechatronical Engineering, Industrial and Manufacturing System Engineering, Aircraft Manufacturing Engineering, Material Processing and Control Engineering, and Industrial Design. Among the disciplines above, ‘Mechanical Design and Theory’ and ‘Mechanical Manufacturing and Automation’, are approved of the State Key Discipline, and the posts of Special Professor of Cheung Kong Scholars Program are available in these two disciplines. All the disciplines offer the programs of Ph.D. MSc. MEng., as well as postdoctoral research positions.

Currently, there are 170 faculty and staff members, including 1 academician of Chinese Academy of Engineering, 1 young outstanding professor awarded the title of “Changjiang” scholar, 45 professors and 60 associate professors. There are 1400 enrolled students totally in SMEA, including 800 undergraduates, 600 graduate students.

In SMEA there are the National Key Laboratory of Robotics, the National Key Laboratory of Design Automation, the Laboratory of Flexible Manufacturing System for China Hi-Tech R&D Plan, Beijing’s Key Laboratory of Digitalized Design and Manufacturing, and the National “211”Project Research Centers of Digital Design and Manufacturing, Advanced Machining Technology, Advanced Technology of Sheet Forming, Advanced Robotics, as well as Teaching and Training Centers of CAD/CAM, Fundamentals of Mechanical Design, etc.

The research activities in SMEA mainly focus on the following areas: Mechanism Theory, Advanced Robotics, Modern Design Theory and Digital Design of Products, Novel Transmission System, Advanced Sheet Forming Process and Equipment, Quality Engineering, Manufacturing Scheduling and Execution System, Computer Numerical Control and Servo Systems, Industrial Process Measurement and Equipment, Non-destructive Industrial Inspection, Industrial Process Measurement and Control, Joining Process and Equipment, MEMS, NanoMechanical Technology, etc.

Education Curriculum:

the 1st Semester

Code	Title	Hours	Credits	Note	Type	Evaluation
A09A10II	工科高等数学#(1) Advanced Mathematics for Engineering (1)	90	6.0	Compulsory	NCS	Examination
B25D11II	中国概况 Introduction to China	16	1.0	Compulsory	HC	Examination
B25D116I	汉语 (1) Chinese (1)	64	3.0	Compulsory	HC	Examination
C05D10II	航空航天概论 B Introduction to Aeronautics and Astronautics B	26	2.0	Compulsory	ETC	Examination
C06D10II	大学计算机基础 University Computer Foundation	44	2.0	Compulsory	ETC	Examination

C32D101I	工程认识 Engineering Experience and Cognition	20	0.5	Compulsory	ETC	Test
E07B1010I	画法几何 Descriptive Geometry(A1)	50	2.5	Compulsory	FMC	Examination

the 2nd Semester

Code	Title	Hours	Credits	Note	Type	Evaluation
A09A102I	工科高等数学 (2) Advanced Algebra for Engineering (2)	86	5.0	Compulsory	NCS	Examination
A09A103I	工科高等代数 Advanced Algebra	112	6.0	Compulsory	NCS	Examination
A19A101I	工科大学物理 (1) University Physics for Engineering (1)	64	4.0	Compulsory	NCS	Examination
B25D117I	汉语#(2) Chinese (2)	64	3.0	Compulsory	HC	Examination
C25D121I	C 语言程序设计 C Programming Language	48	2.5	Compulsory	ETC	Examination
E07B1020I	机械制图 Machine Drawing	70	3	Compulsory	FMC	Examination

the 3rd Semester

Code	Title	Hours	Credits	Note	Type	Evaluation
A09B204I	概率统计 A Probability Statistics A	64	4.0	Compulsory	NCS	Examination
A19A202I	工科大学物理 (2) University Physics for Engineering (2)	64	4.0	Compulsory	NCS	Examination
A19A103I	基础物理实验 B(1)# Fundamental Physics Experiments B(1)	28	1.5	Compulsory	NCS	Examination
E02B231I	电路分析 Circuits Analysis	64	4.0	Compulsory	FMC	Examination
E05B203I	材料力学 A(1) Mechanics of Materials A(1)	40	2.5	Compulsory	FMC	Examination
E05B201I	理论力学 A(1)# Theoretical Mechanics A(1)	64	4.0	Compulsory	FMC	Examination
G32A201I	机械工程技术训练 A Mechanical Technology Practice A	140	3.5	Compulsory	ETC	Test

the 4th Semester

Code	Title	Hours	Credits	Note	Type	Evaluation
A19A104I	基础物理实验 B(2)# Fundamental Physics Experiments B(2)	24	1.5	Compulsory	NCS	Examination
E05B204I	材料力学 A(2) Mechanics of Materials A(2)	58	3.5	Compulsory	FMC	Examination
E05B202I	理论力学 A(2) Theoretical Mechanics A(2)	26	1.5	Compulsory	FMC	Examination
E07B203I	机械原理 Theory to Machines and Mechanism	54	2.5	Compulsory	FMC	Examination
E07B211I	工程材料学 The Science of Engineering Materials	34	2.0	Compulsory	FMC	Examination

G32A204I	电子工程技术训练 Electronic Technology Practice	80	2.0	Compulsory	PC	Test
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the 5th Semester

Code	Title	Hours	Credits	Note	Type	Evaluation
E02B334I	数字电路 Digital Circuit	56	3.5	Compulsory	FMC	Examination
E07B304I	机械设计 Mechanical Design	64	3.0	Compulsory	FMC	Examination
E07B313I	制造工程基础 Fundamentals of Manufacturing Engineering	34	2.0	Compulsory	FMC	Examination
E07D321I	流体力学及液压传动 Hydrodynamics and Hydraulic Transmission	38	2.5	Compulsory	FMC	Examination
E07B314I	机器人技术基础 Fundamentals of Robotics	46	2.5	Compulsory	FMC	Examination

the 6th Semester

Code	Title	Hours	Credits	Note	Type	Evaluation
待定	模拟电路 B Analysis Circuit B	64	3.5	Compulsory	FMC	Examination
E07D309I	机械设计课程设计 A Practice of Mechanical Design A	120	4.0	Compulsory	FMC	Examination
E07B316I	检测技术基础 Fundamental of Measurement Technology	34	2.0	Compulsory	FMC	Examination
E07B315I	机电控制工程技术 Control Engineering Technology	34	2.0	Compulsory	FMC	Examination
F07C422I	先进加工技术及装备 Advanced Processing Technology and Equipment	48	3.0	Compulsory	MC	Examination

the 7th Semester

Code	Title	Hours	Credits	Note	Type	Evaluation
F07C412I	机械设计学 Philosophy of Mechanical Design	32	2.0	Compulsory	MC	Examination
F07C443I	计算机辅助制造 Computer Aided Manufacturing	48	3.0	Compulsory	MC	Examination
F07C321I	机械制造工艺 Machine-Building Technology	48	3.0	Compulsory	MC	Examination
F07C881I	计算机控制系统 Computer Control System	32	2.0	Compulsory	MC	Examination
G07D412I	专业课程设计 Specialty Course Design	80	2.0	Compulsory	PC	Examination

the 8th Semester

Code	Title	Hours	Credits	Note	Type	Evaluation
G07D4010	毕业设计 Graduation Thesis	16wks	8.0	Compulsory	PC	Test

Explanation of course type:

NCS: Natural Science Courses (自然科学类课程)

ETC: Engineering Technology Courses (工程技术类课程)

MC: Major Courses (专业课程)

HC: Humanities Courses (人文社科类课程)

FMC: Fundamental Major Courses (学科与专业基础课程)

PC: Practice Courses (实践类课程)