National Kaohsiung University of Applied Sciences
Mechanical Engineering Department, College of Engineering
Curriculum of Doctoral Program in Academic Year 2018

Passed at Department Curriculum Committee Meeting on 16 03, 22
Passed at Department Affairs Meeting on 16 03, 17
Passed at College Curriculum Committee Meeting on 16 03, 30
Passed at University Curriculum Committee Meeting on 14 04, 25
Passed at Academic Affairs Meeting on 14 05, 21

Year	1st academic year		2nd academic year	
Semester	Semester 1	Semester 2	Semester 1	Semester 2
Required courses	Seminar (1) 1/2 Research Methodology (0 credit)	Seminar (2) 1/2	Special topics (3) 1/2 Ph.d thesis 6/6	Special topics (4) 1/2 Ph.d thesis 6/6
Elective courses (General group)	The mechanics of Elasticity 3/3 Theory and design of mechanisms 3/3 Computer graphics 3/3 Finite Element Method - Theory and Application 3/3 Manufacturing System Engineering 3/3 Remote networked manufacture 3/3 Image processing and machine vision 3/3 Patent trategy and Practice 3/3 Engineering analysis 3/3 Conductive Heat Transfer 3/3 Computational fluid dynamics 3/3 Solar Engineering 3/3 Optoelectronic engineering 3/3 Linear Systems 3/3 Optimal Control 3/3 Fuzzy System and Control 3/3 Principle of Mechatronics 3/3 Nanomaterials 3/3 Microsystem Engineering 3/3 Design and analysis of robot mechanisms3/3	Advanced Mechanism Design 3/3 Advanced Dynamics 3/3 Theory and design of gearing 3/3 Taguchi quality design method 3/3 Computational dynamics 3/3 Computer Aided Geometric Design 3/3 Applied plasticity 3/3 Computer-Integrated Manufacturing 3/3 Convective heat transfer 3/3 Viscous Flow 3/3 Polymer Processing 3/3 Photo-electric inspection 3/3 Nonlinear Control 3/3 Electomagnetics 3/3 Dynamics of Mechatronic System 3/3 Vibration control 3/3 Digital Control 3/3 Lubrication theory 3/3 Micro Mechanics 3/3 Electronic Ceramics 3/3 Material of MEMS 3/3 Nanotechnology 3/3 Semiconductor Device and Material 3/3 Special Topics on the Patent Design-Around 3/3	Mechanics of vibration 3/3 Optimum Design 3/3 Product design and manufacture 3/3 Radial Heat Transfer 3/3 Micro Heat Transfer 3/3 Heat Transfer Enhancement 3/3 Micro-Sensor 3/3 Variable Structure Control 3/3 Adaptive Control Systems 3/3 Special Topics on Laser Machining 3/3 Principle and Application of Piezoelectric Actuator 3/3 Machining Process of MEMS 3/3 System design of mems 3/3 Theory of Material Fracture 3/3 Materials for photo-electric applications 3/3 X-Ray Diffraction Analysis 3/3 X-Ray Crystallography 3/3	Technology Development and Knowledge Management 3/3
Elective courses (International group)	Computer aided design 3/3 Polymer Processing 3/3 Optimum Design 3/3	Research Methodology 3/3 Mechatronics 3/3 Management of Science and Technology	Electronic Design 3/3 Circuit design 3/3 Optoelectronics Devices 3/3	Optoelectronic engineering 3/3 Micro-electro-mechanical Systems Engineering 3/3

	Manufacturing System Engineering 3/3 Product design and manufacture 3/3 Computer-Integrated Manufacturing 3/3 Principle of Mechatronics 3/3 Reverse Engineering 3/3 Die & mold design 3/3 Knowledge Management 3/3 Operations Management 3/3 Machine Learning 3/3 Design of Production System 3/3 Micro Machining Technology 3/3 Special Topics on Materials 3/3 Theory and design of mechanisms 3/3 Machining Process of MEMS 3/3 Precision Metal Forming 3/3	3/3 Finite Element Method - Theory and Application 3/3 Systematic innovation methods 3/3 Quality Management 3/3 Control System Design and Simulation 3/3	Distribution Automation System 3/3 Systematic innovation methods 3/3 Robotics 3/3 Artificial Intelligence 3/3 Image Processing 3/3 Precision manufacturing 3/3	

I. Remarks:

1. This curriculum is applied to students admitted in Academic Year 2018
2. Credit hours of each course (or total) are marked with "credit/hour."
3. Elective courses: the courses listed in the table are planned courses, which will be offered based on practical needs.
4. For other relevant regulations, please refer to guidelines on doctoral studies of the department (graduate institute).

II. Graduation requirements:

1. The minimal credit number for graduation is 34 :
   (1) 16 credits of required courses（including Ph.d thesis 12 credits, based on the semester the dissertation is presented.Seminar and Special topics 4 credits.）
   (2) 18 credits of elective courses (including courses taken at other departments or institutes as is specified by the department/institute)

III. Other requirements set by the department:

1. All elective courses for International group are in English