In order to meet the urgent needs and strategic development of the national robotic engineering professional and technical talents, South China Universit of Technolog has set up Robotics Engineering major at S.M. Wu School of Intelligent Engineering of Guang hou International Campus. The school focuses on students and adheres to the concept of Global Vison, Interdisciplinar , Innovation, and Qualit so that it can comprehensivel integrate the educational s stems of China and the United States to develop its own characteristics. Through bringing together the outstanding research talents in the field of worldwide intelligent manufacturing, the school introduces new teaching methods and strengthens the integration of basic knowledge such as mathematics, ph sics, mechanical engineering, electronic engineering, control technolog , computer and information processing, and multidisciplinar knowledge such as cognition and life science. The research consists of control science and engineering, mechanical engineering, computer science and technolog , and other disciplines in robotics science and technolog issues. The school strives to cultivate a group of new generations of international, innovative and leadership talents with global vision, cross-disciplinar vision and professional forward-looking to comprehensivel develop their moralit , intelligence, ph sical and aesthetic aspects. It has a patriotism, international vision, cross-disciplinar

vision and professional forward-looking. The graduates of the S.M. Wu School of Intelligent Engineering will have a solid foundation of intelligent engineering, basic methods, and applied technolog , as well as outstanding scientific literac , innovative abilit , s stems thinking, and global vision. The also will have an abilit of critical thinking that identif ing, anal ing, and solving engineering problems; an abilit of written e pression and communication of interdisciplinar , cross-cultural, and cross-border; an abilit of leadership with holistic view, coordination, tolerance, and e ecution; an abilit to engage in life-long learning and further develop in the field of intelligent manufacturing. We will strive to make students to be the compound talents with intelligent science. And the will have the foundation and potential to become world-leading scientists and a new generation of intelligent engineers and entrepreneurs. The will lead the vigorous development of intelligent science, technolog , and industr in China.

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1. An abilit to appl knowledge of mathematics, science, and engineering.

2. An abilit to design and conduct e periments, as well as to anal e and interpret data

3. An abilit to design ad s stem, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safet , manufacturabilit , and sustainabilit .

4. An abilit to function on multidisciplinar teams.

5. An abilit to identif , formulate, and solve engineering problems

6. An understanding of professional and ethical responsibilit .

7. An abilit to communicate effectivel .

environmental, and societal context.

9. A recognition of the need for, and an ability to engage in life-long learning.

10. A knowledge of contemporary issues.

11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Robotics Engineering is a professional undergraduate major that facing the advanced technology and application of intelligent engineering. It is also a cross-integration major of computer engineering, mechanical engineering, automation control, electronic telecommunication, as well as cognition and life sciences. By integrating the frontier resources of innovation domestically and internationally, the major deepens the characteristics of robotic science and engineering, and cultivates high-quality, international and compound R&D talents who are proficient in basic theories and professional knowledge of robot and have an innovative spirit and practical ability. The Robotics Engineering comprehensively applies the theories, methods and technologies of natural science, engineering technology, social science, humanities and other related fiel

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hnolog of Robotics, Robot Operating S stem, Clustering-based Robot Control, and etc. As the most advanced discipline in the field of robot and artificial intelligence, the graduates of Robotics Engineering have the characteristics of thick foundation, wide caliber, emphasis on practice and innovation, and the will also have an abilit of organi ing, coordinating and s ntheticall appl ing the knowledge the have learned. With the professional advantage of integrating and mastering the basic theor of multi-discipline, the prospect of emplo ment and further education is ver broad. At present, the school has completel brought in the education s stem of the Universit of Michigan with the most advanced laborator , internship, and other research and practical platforms, and the school has established a complete talent training s stem in the software and hardware level. After graduation, students can go to universit research institutions, related enterprises and institutions, and government agencies to engage in R&D and management in related fields. The can also continue their studies that pursuing graduate studies in Robotics Engineering, Intelligent Manufacturing Engineering and related disciplines in order to seek broader development opportunities.

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2. ABET

1. This major is based on engineering. It will form a new and strong interdiscplinar engineering b integrating Mechanical Engineering, Automation, Electronic Telecommunication, Computer Science and other discplines.

2. Major courses would benchmark against Universit of Michigan, and also refer to ABET eligibilit requirements. B introducing new teaching methods, students will gain international perspective and competitiveness.

Bachelor of Engineering

Engineering Practice Training, Introduction to Circuits, Introduction to Solid Mechanics, Thermod namics and Fluid Mechanics, Heat Transfer, Introduction to D namics and Vibrations, Design and Manufacturing, Modeling, Anal si

I II III

I II III

Freshmen Seminars: Introduction to Engineering

Subject Frontiers Courses: Artificial Intelligence Technolog and Application, Theor and Technolog of Robotics, Machine Vision and Sensing S stem

Innovation Laborator : Introduction to Engineering, Design and Manufacturing I, Design and Manufacturing II, Design and Manufacturing III

Comprehensive Research Designs: Design and Manufacturing I, Design and Manufacturing II, Design and Manufacturing III

Course Categor	Requirement	Credits	Academic Hours	Remarks
General Basic Courses	Compulsor	61	1105	
	General Education	10	160	
Specialt Basic Courses	Compulsor	78	1283	
Elective Courses	Elective	10	160	
Total		159	2708	
Practice Training (Weeks)		6	6	
Credits Required for Graduation	165			

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Academic Hours					Credits						
	Include		Include			Include		Include			Include
Total	Compulsor	Elective	Theor Course	Lab	Total	Compulsor	Elective	Practice-concentrated Training	Theor Course Credits	Lab	Innovation and Entrepreneurship Education
2724	2404	320	2195	529	165	145	20	6	152	7	0

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Course Categor	Course No.	Course Title	C/E	Total Curriculum Hours				Credits	Semester	Student Outcomes
				Class Hours	Lab Hours	Practice Hours	Other Hours			
	031101371	Skeleton of Chinese Modern Histor		40			4	2.5	2	3, 6
	031101492	Cultivation of Thought and Morals & Fundamental of Law		40			4	2.5	2	3, 4, 6
	031101621	Fundamentals of Mar ism Principle		40			4	2.5	4	3, 6
	031101423	Thought of Mao ZeDong and Theor of Socialism with Chinese Characteristics		72			24	4.5	4	3, 6, 10
	031101331	Anal sis of the Situation & Polic		128				2.0	1-8	3, 6, 10
	052100332	Ph sical Education (1)		32			32	1.0	1	9.
	052100012	Ph sical Education (2)		32			32	1.0	2	9.
	052100842	Ph sical Education (3)		32			32	1.0	3	9.
	052100062	Ph sical Education (4)		32			32	1.0	4	9.
	006100112	Militar Principle		36			18	2.0	2	3, 9
	082100041	Applied Calculus Applied Calculus		60				4.0	1	1, 5, 7, 11
	082100051	Applied Calculus Applied Calculus		60				4.0	2	1, 5, 7, 11
	082100271	Probabilit & Mathematical Statistics Probabilit & Mathematical Statistics		60				4.0	3	1, 5, 7, 11.
	082100061	Linear Algebra Linear Algebra		60				4.0	2	1, 5, 7, 11
	044101381	English for Academic Purposes		64				4.0	1	7, 8
	044102452	College English		32				2.0	2	7, 8
	082100261	Introduction to Engineering		60				4.0	1	5, 7
	047101271	Chemistr		60				4.0	1	1, 6, 8, 9, 10
	047101261	Chemistr Lab		15	15			1.0	2	1, 4, 6, 8, 9, 10

082100361	Ph sics Ph sics		60		4.0	2	1, 5, 7, 8, 9, 11
082100372	Ph sics Ph sics		60		4.0	3	1, 5, 7, 8, 9, 11
082100381	Ph sics Lab		15	15	1.0	2	1, 5, 7, 8, 9, 11
082100391	Ph sics Lab		15	15	1.0	3	1, 5, 7, 8, 9, 11
	Humanities		96		6.0		6
	Social Science	E	32		2.0		6

Total Curriculum Hours

Course Categor	Course No.	Course Title	C/E	Credits	Semester	Student Ou	O

	082100351	Mechanical Behavior of Materials	C	60				4.0	5	1, 3, 5, 11
	082100451	Data Structure and Algorithm	C	64			16	4.0	5	1, 2, 4, 7, 11
	082100141	Design and Manufacturing III	C	60				4.0	8	1 2, 3, 4, 5, 7, 11
	082100461	Embedded S stems and Design	C	64			30	4.0	5	1, 2, 4 5, 11
	082100151	Human-Machine Interaction	C	48				3.0	7	1, 4, 5, 7, 8, 11
	082100191	Theor and Technolog of Robotics	C	48			16	3.0	6	1, 2, 5, 6, 9, 10, 11
	082100181	Machine Vision and Sensing S stem	C	45				3.0	3	1, 2, 3, 5, 9, 10 11
	082100581	Industrial Robot and its Applications	C	48			28	2.0	7	1, 2, 3, 5, 7, 8
	082100221	Mechatronics	C	48	16			3.0	6	1, 2, 3, 5, 7, 11
	082100071	Modern Control Theor	C	48			12	3.0	7	1, 5, 9, 11

	082100541	Classical Control Theor	C	48				3.0	6	1, 5, 9, 11
				1283	156		166	78		
	082100411	3D Introduction to 3D Modeling and 3D Printing	E	45			45	3.0	3	1 2, 3, 4, 5, 7,
	082100421	Introduction to Robotics	E	45			27	3.0	3	1 2, 3, 4, 5, 7,
	082100011	Autonomous Driving S stems	E	48				3.0	8	1, 2, 4, 5, 8, 10, 11
	082100591	Soft Robotics	E	36	12		4	2.0	7	1, 2, 5, 7, 9, 11
	082100621	Signal Processing	E	60			12	4.0	6	1, 2, 5,
	082100631			48				3.0	5	1, 2, 5, 7
	082100741	Natural Language Processing	E	48			20	3.0	6	1, 3, 5, 11
	082100491	Fle ible Electronic Design and Manufacturing	E	32	10			2.0	7	1, 2, 5, 7, 9, 11
	082100471	Databases	E	32			8	2.0	7	1, 2, 5, 7, 9, 11
	082100561	Software Engineering	E	48			16	3.0	8	1, 2, 5, 7, 9, 11

	082100521	Advanced Manufacturing Technolog	E	48				3.0	8	1, 2, 5, 7, 9, 11
	082100571	Introduction to Internet of Things	E	32				2.0	8	1, 2, 5, 7, 9, 11
	020100051	Innovation Research Training	E	32				2.0	7	3,4
	020100041	I Innovation Research Practice I	E	32				2.0	7	3,4
	020100031	Innovation Research Practice	E	32				2.0	7	3,4
	020100061	Entrepreneurial Practice	E	32				2.0	7	3,9,11
			10 minimum elective course credits required: 10							

Course No	Course Title	C/E	Total Curriculum Hours		Credits	Semester	Student Outcomes
			Practice weeks	Lecture Hours			
006100151	Militar Training	C	2		2.0	1	4
031101551	Mar ism Theor and Practice	C	2		2.0	4	6
030100702	Engineering Training	C	2		2.0	4	1, 3, 4, 11
		C	6		6.0		
		E	0 minimum elective course credits required:4				

“Second Classroom” Activities