The Hong Kong University of Science and Technology

Approval of New Undergraduate Program

Normative Student Pathway(s)

<< Declaration of major

	School:		**Systems Hub**		Student's Pathways (i.e. Study Pattern)									
	Department:		**Smart Manufacturing Thrust**		Pathway									
	Program: **(Major/~~Minor~~/~~Other~~*)** **delete as appropriate*		***BEng in Smart Manufacturing***		Background: Profile: Normative									
	Subject Area (course code prefix)	Course Number	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	***Sub-total***	**Remarks**
University Common Core Course(s)	Experiencing		**Undergraduate experiential Opportunities Programs (UxOP) (can be substituted by any Broadening courses)**	**0-3**										
			Undergraduate Research Opportunities Program (UROP):											
			Undergraduate Teaching Opportunities Program (UTOP):											
			Undergraduate Practice Opportunities Program (UPOP):											
			Undergraduate Global Challenges and Opportunities Program (UCOP)											
	Broadening		**12 credits under stipulated program-specific areas; 0 to 6 credits under any areas as substitution to CTDL/UxOP**	**12-18**									15	
			Arts (A)	3				3						
			Humanities (H)	3			3	3						
			Science (S)	3										
			Technology (T)	3										
			Social Analysis (SA)	3			3	3						
	Foundations			**12-15**									15	
			Cognitive Foundations of University Education. Critical Thinking and Data Literacy (CTDL)	0-3	3									
			Behavioral Foundations of University Education: Habits, Mindsets, and Wellness (HMW)	3	2	1								
			English Communication	6	3	3								
			Chinese Communication	3	3									
Fundamental Course(s)	UFUG		Note: UFUG 1102 OR UFUG 1105	**3**	3								3	
	UFUG	1102	Calculus I	3										
	UFUG	1105	Honors Calculus I	3										
	UFUG		Note: UFUG 1103 OR UFUG 1106	**3**		3							3	
	UFUG	1103	Calculus II	3										
	UFUG	1106	Honors Calculus II	3										
	UFUG		*Note: UFUG 1601 OR UFUG 1602 OR UFUG 2601*	**3-4**	3								3	
	UFUG	1601	Introduction to Computer Science	3										
	UFUG	1602	Java Computing	3										
	UFUG	2601	C++ Programming	4										
	UFUG		Note: UFUG 1501 OR UFUG 1503	**3**		3							3	
	UFUG	1501	General Physics I	3										
	UFUG	1503	Honors General Physics I	3										
	UFUG		Note: UFUG 1502 OR UFUG 1504	**3**			3						3	
	UFUG	1502	General Physics II	3										
	UFUG	1504	Honors General Physics II	3										
	UFUG		Note: UFUG 1301 OR UFUG 1302	3		3							3	
	UFUG	1301	General Chemistry											
	UFUG	1302	Honors Chemisry I											
	UFUG	1403	Introduction to Biotechnology	3		3							3	
	UFUG	1811	Principles of Economics	3			3						3	
	UFUG	2101	Introduction to Multivariable Calculus	3			3						3	
	UFUG		Note: UFUG 2102 OR UFUG 2103	**3**			3						3	
	UFUG	2102	Matrix Algebra and Applications	3										
	UFUG	2103	Linear Algebra	3										
			Required Credits for Engineering Fundamental Course(s)	**30-31**									**30**	
	SMMG		*Note: SMMG 3000 OR SMMG 3010*	0					0				0	
	SMMG	3000	Industrial Training											
	SMMG	3010	Industrial Experience											

The Hong Kong University of Science and Technology

Approval of New Undergraduate Program

Normative Student Pathway(s)

	DSAA	1085	Probability and Statistics	4						4			4
	DLED	3040	English Communication I for Systems Hub Programs	3						3			3
	SMMG	3020	Introduction to Additive Manufacturing	3				3					3
	SMMG	3040	Introduction to Numerical Controlled Machining	3					3				3
	SMMG	3810	Smart Manufacturing Laboratory I	2					2				2
	SMMG	3820	Smart Manufacturing Laboratory II	2						2			2
	SMMG	3050	Industrial Data Analytics	3					3				3
	SMMG	4020	Introduction to Manufacturing Processes	4				4					4
	DLED	4040	English Communication II for Systems Hub Programs	3							1	2	3
	SMMG SMMG SMMG	 4901 4960	*Note: SMMG 4901 OR SMMG 4960* *Final Year Thesis* *Final Year Capstone Project*	6							3	3	6
	SMMG	4010	Integrated Production Systems	3							3		3
	SMMG	4030	System Simulation	3							3		3
	Required Credits for Program Major Required Course(s)			**39**									**39**
Program Major Electives	*Note: Smart Manufacturing Electives (18 credits from the specified elective list)*												
	DSAA	1001	Introduction to Data Science and Analytics	3									
	DSAA	2011	Machine Learning	3									
	AIAA	2205	Introduction to Artificial Intelligence	3									
	SMMG	2030	Introduction to Advanced Manufacturing	3									
	SMMG	2640	Engineering Materials	3									
	SMMG	3030	Prescriptive Analytics	3									
	SMMG	3060	Microelectromechanical Systems: Design and Fabrication	3									
	SMMG	3070	3D Modelling of Innovative Product Design	1									
	SMMG	3690	CAD/CAM	3					6	6	3	3	**18**
	SMMG	4040	Fundamentals of Metal Processing	3									
	SMMG	4610	Product Design and Lifecycle Management	3									
	SMMG	4120	Service Engineering and Management	3									
	SMMG	4630	Design of Logistics and Manufacturing Systems	3									
	SMMG	4640	Data Driven Supply Chain Management	3									
	SMMG	4650	Introduction to Precision Engineering	3									
	SMMG	4660	Numerical Methods in Engineering	3									
	Required Credits for Program Major Electives			**18**									
Free Electives	Free Electives			2-3							3		**3**
	Total Credits for the Program			**120**	Semester load (excl. free credits)								
					17	16	18	16	14	15	16	8	
					120								

<< Declaration of major