(For students admitted in 2023-24 and onwards under the 4-yeardegree)

BEng in Smart Manufacturing

120 credits are required for BEng in Smart Manufacturing:

- ***30 credits for University Common Core Courses***
- ***89-90 credits for Major Requirements, including:***
  - ***30-31 credits for Fundamental Courses***
  - ***39 credits for Major Required Courses***
  - ***18 credits for Major Electives***
- ***Free Electives Courses can be used to fill in any shortfall in total credits***

Major Requirements

Fundamental Courses (30-31 credits)

Course Code		Course Title	Credit(s) attained	
UFUG		*Note: UFUG 1601 OR UFUG 1602 OR UFUG 2601*	**3-4**	
UFUG	1601	Introduction to Computer Science	3	
UFUG	1602	Introduction to Java Computing	3	
UFUG	2601	C++ Programming	4	
UFUG		*Note: UFUG 1301 OR UFUG 1302*	**3**	
UFUG	1301	General Chemistry	3	
UFUG	1302	Honors Chemistry I	3	
UFUG		*Note: (UFUG 1501 OR UFUG 1503)*	**3**	
UFUG	1501	General Physics I	3	
UFUG	1503	Honors General Physics I	3	
UFUG		*AND (UFUG 1502 OR UFUG 1504)*	**3**	
UFUG	1502	General Physics II	3	
UFUG	1504	Honors General Physics II	3	
UFUG		*Note: (UFUG 1102 OR UFUG 1105)*	**3**	

UFUG	1102	Calculus I	3	
UFUG	1105	Honors Calculus I	3	
UFUG		*AND (UFUG 1103 OR UFUG 1106)*	**3**	
UFUG	1103	Calculus II	3	
UFUG	1106	Honors Calculus II	3	
UFUG	2101	Introduction to Multivariable Calculus	**3**	
UFUG		*AND (UFUG 2102 OR UFUG 2103)*	**3**	
UFUG	2102	Matrix Algebra and Applications	**3**	
UFUG	2103	Linear Algebra	**3**	
UFUG	1403	Introduction to Biotechnology	**3**	
UFUG	1801	Principles of Economics	**3**	

Major Required Courses (39 credits)

Course Code		Course Title	Credit(s) attained	
SMMG		*Note: SMMG 3000 OR SMMG 3010*	**0**	
SMMG	3000	Industrial Training	0	
SMMG	3010	Industrial Experience	0	
DSAA	1085	Probability and Statistics	**4**	
DLED	3040	English Communication I for Systems Hub Programs	**3**	
SMMG	3020	Introduction to Additive Manufacturing	**3**	
SMMG	3040	Introduction to Numerical Controlled Machining	**3**	
SMMG	3050	Industrial Data Analytics	**3**	
SMMG	3810	Smart Manufacturing Laboratory I	**2**	
SMMG	3820	Smart Manufacturing Laboratory II	**2**	
SMMG	4010	Integrated Production Systems	**3**	
SMMG	4020	Manufacturing Processes and Systems	**4**	
SMMG	4030	System Simulation	**3**	
DLED	4040	English Communication II for Systems Hub Programs	**3**	
SMMG		*Note: SMMG 4901 OR SMMG 4960*	**6**	
SMMG	4901	Final Year Thesis	6	

SMMG	4960	Final Year Capstone Project	6	

Major Electives (18 credits)

Course Code		Course Title	Minimum credit(s) required	
Note:		*Smart Manufacturing Electives (**18** credits from the specified elective list)*	**18**	
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	3080	Mechanisms of Machinery	3	
SMMG	3690	CAD/CAM	3	
SMMG	4040	Fundamentals of Metal Processing	3	
SMMG	4610	Product Design and Lifecycle Management	3	
SMMG	4620	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	