Bachelor of Engineering Program in Digital Manufacturing and Robotics Integration Engineering

Total Number Required for Graduation is at least 130 credits

1. General Education	**at least**	**30**	**Credits**
- Wellness	at least	7	Credits
- Entrepreneurship	at least	3	Credits
- Language and Communication	at least	15	Credits
- Thai Citizen and Global Citizen	at least	2	Credits
- Aesthetics	at least	3	Credits
2. Specific Course	**at least**	**94**	**Credits**
- Basic Course	at least	35	Credits
Basic Mathematics and Science		14	Credits
Basic Engineering	at least	21	Credits
- Major Course	at least	59	Credits
Required Course		50	Credits
Engineering Elective	at least	9	Credits
3. Free Elective	**at least**	**6**	**Credits**
4. Internship	**at least**	**240**	**Hours**

(Except for students entering the cooperative

Education program)

Course List

1. General Education		**at least**	**30**	**Credits**
1.1 Wellness		**at least**	**7**	**Credits**

    01175xxx   Physical Education Activities   1(0-2-1)

        And choose at least 6 credits from this category

1.2 Entrepreneurship		**at least**	**3**	**Credits**

    Choose at least 3 credits from this category

1.3 Language and Communication		**at least**	**15**	**Credits**

        Thai language   3(- -)

        English   9(- -)

        Information/computer   at least   3(- -)

1.4 Thai Citizen and Global Citizen		**at least**	**2**	**Credits**

    01999111   Knowledge of the Land   2(2-0-4)

1.5 Aesthetics		**at least**	**3**	**Credits**

    Choose at least 3 credits from this category

2. Specific Courses		**at least**	**94**	**Credits**
2.1 Basic Courses		**at least**	**35**	**Credits**
-<u>Basic Mathematics and Science</u>			**14**	**Credits**

    01403114   Laboratory in Fundamental of General Chemistry   1(0-3-2)

    01403117   Fundamental of General Chemistry   3(3-0-6)

    01417167   Engineering Mathematics I   3(3-0-6)

    01417168   Engineering Mathematics II   3(3-0-6)

    01420111   General Physics I   3(3-0-6)

    01420113   Laboratory in Physics I   1(0-3-2)

<u>-Basic Engineering</u>   **21**   **Credits**

01204111	Computers and Programming	3(2-3-6)
01205201	Introduction to Electrical Engineering	3(3-0-6)
01205202	Electrical Engineering Laboratory I	1(0-3-2)
01208112	Mechanical Engineering Drawing	3(2-3-6)
01208281	Workshop Practice	1(0-3-2)
01208381	Mechanical Engineering Laboratory I	1(0-3-2)
01211151	Statics and Strength of Materials	3(3-0-6)
01211261	Fundamentals of Thermodynamics and Fluid Mechanics	3(3-0-6)
01213201	Materials and Manufacturing Processes	3(3-0-6)

2.2 Major Courses   **at least**   **59**   **Credits**

<u>-Required Course</u>   **50**   **Credits**

01205301	Digital Circuits and Microcontrollers	3(3-0-6)
01205302	Digital Circuits and Microcontrollers Laboratory	1(0-3-2)
01208271	Mathematical Applications in Mechanical Engineering	3(2-3-6)
01211211	Design Engineering and Design Technology	3(2-3-6)
01211221	Hydraulics and Pneumatics Systems	3(2-3-6)
01211222	Mechatronics Engineering	3(2-3-6)
01211232	Production Systems Management	3(3-0-6)
01211271	Industrial Artificial Intelligence and IoT	3(2-3-6)
01211313	Automatic Machine Design	3(3-0-6)
01211315	Manufacturing Facility Design	3(3-0-6)
01211323	Industrial Automation Control System	3(2-3-6)
01211324	Robotics Integration and Automation System	3(2-3-6)
01211325	Vibration Analysis and Condition Based Maintenance	3(2-3-6)
01211334	Robotics Engineering and Information System	3(2-3-6)
01211371	Industrial Dynamics System and Control	3(2-3-6)
01211373	Machine Learning and Programming for Industry	3(2-3-6)
01234397*	Seminar	1

01234495*	Digital Manufacturing and Robotics Integration	1(0-3-2)
	Engineering Projects Preparation	
01234499*	Digital Manufacturing and Robotics Integration Engineering Project	2(0-6-3)

2.2.2 Engineering Elective   **at least**   **9**   **Credits**

Choose at least 9 Credits from the course that begins with 012053XX 012054XX 012063XX 012064XX 012083XX 012084XX 012113XX or from the following course

01211472	Deep Learning for Manufacturing Industry	3(2-3-6)
01234490*	Co-operative Education	9
01234494*	Body of knowledge from Oversea University	1-12
01234496*	Selected Topics in Digital Manufacturing and Robotics	1-3
	Integration Engineering	
01234498*	Special Problems	1-3

3. Free Elective   **at least**   **6**   **Credits**

4. Internship   **at least**   **240**   **Hours**

(Except for students entering the cooperative Education program)