

EE-Program Structure-EIIR

Curriculum

Bachelor of Engineering Program in

Electrical Engineering (Energy Innovation and Intelligent Robotics)

(English Program)

1) General Education Courses	30	Credits	
1.1 Wellness	6	Credits	
1.2 Entrepreneurship	3	Credits	
1.3 Language and Communication	13	Credits	
1.4 Thai Citizen and Global Citizen	5	Credits	
1.5 Aesthetics	3	Credits	
2) Specific Courses	113	Credits	
2.1 Core Courses	33	Credits	
2.2 Required Technical Courses	32	Credits	
2.3 Technical Electives	48	Credits	

Total Number of Credits Required for Graduation is at least 143 Credits

Courses

1) General Education Courses	30	Credits	
1.1 Wellness	6	Credits	
01175xxx Physical Education Activities			1(0-2-1)
and select at least 5 credits from Wellness subjects			
1.2 Entrepreneurship	3	Credits	
Select at least 3 credits from Entrepreneurship subjects			
1.3 Language and Communication	13	Credits	
1999021 Thai Language for Communication			3(3-0-6)
01355xxx English			9(- -)
and select at least 1 credit from Wellness subjects			

1.4 Thai Citizen and Global Citizen 5 Credits

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

and select at least 3 credits from Thai Citizen and Global Citizen subjects

1.5 Aesthetics 3 Credits

Select at least 3 credits from Aesthetics subjects

2) Specific Courses 113 Credits

2.1 Core Courses 33 Credits

01403114	Laboratory in Fundamentals 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)
01417267	Engineering Mathematics III	3(3-0-6)
01420111	General Physics I	3(3-0-6)
01420112	General Physics II	3(3-0-6)
01420113	Laboratory in Physics I	1(0-3-2)
01420114	Laboratory in Physics II	1(0-3-2)
01204111	Computers and Programming	3(2-3-6)
01208111	Engineering Drawing	3(2-3-6)
01208221	Engineering Mechanics I	3(3-0-6)
01213211	Materials Science for Engineers	3(3-0-6)

2.2 Required Technical Courses 32 Credits

01205211	Electric Circuit Analysis I	3(3-0-6)
01205213	Electronics and Electrical Engineering Laboratory	1(0-3-2)
01205214	Electrical Machines Laboratory and Electrical Practices	1(0-3-2)
01205215	Computer Programming for Electrical Engineers	3(3-0-6)
01205216	Signals and Systems	3(3-0-6)
01205217	Electromagnetic Fields and Waves	3(3-0-6)

01205218	Electrical Measurements and Instruments	3(3-0-6)
01205241	Digital Circuits and Logic Design	3(3-0-6)
01205242	Electronic Circuits and Systems I	3(3-0-6)
01205251	Electromechanical Energy Conversion I	3(3-0-6)
01205311	Microprocessor	3(3-0-6)
01205312	Linear Control Systems	3(3-0-6)

2.3 Technical Electives (Energy Innovation)* 48 Credits

01205348	Electrical Engineering Materials	3(3-0-6)
01205351	Electromechanical Energy Conversion II	3(3-0-6)
01205352	Electric Power System Analysis I	3(3-0-6)
01205354	Electrical System Design in Buildings	3(3-0-6)
01205357	Electric Drives	3(3-0-6)
01205358	Renewable Energy	3(3-0-6)
01205359	Power Electronics	3(3-0-6)
01205371	Process Sensors & Transducers	3(3-0-6)
01205373	Embedded Control Systems	3(3-0-6)
01205374	Industrial Automation & Control	3(3-0-6)
01205387	Microprocessor Lab.	1(0-3-2)
01205388	Control and Measurement Lab.	1(0-3-2)
01205389	Industrial Automation & Control Lab.	1(0-3-2)
01205399	Internship	1
01205451	Energy Conservation & Management	3(3-0-6)
01205479	Internet of Things for Electrical Engineering	3(3-0-6)
01205491	Electrical Engineering Project I	1(0-3-2)
01205497	Seminar	1
01205498	Special Problems	3
01205499	Electrical Engineering Project II	3(0-9-5)

2.3 Technical Electives (Intelligent Robotics)* 48 Credits

01205348	Electrical Engineering Materials	3(3-0-6)
01205351	Electromechanical Energy Conversion II	3(3-0-6)
01205352	Electric Power System Analysis I	3(3-0-6)
01205357	Electric Drives	3(3-0-6)
01205359	Power Electronics	3(3-0-6)

01205371	Process Sensors & Transducers	3(3-0-6)
01205373	Embedded Control Systems	3(3-0-6)
01205374	Industrial Automation & Control	3(3-0-6)
01205387	Microprocessor Lab.	1(0-3-2)
01205388	Control and Measurement Lab.	1(0-3-2)
01205389	Industrial Automation & Control Lab.	1(0-3-2)
01205399	Internship	1
01205375	Machine Vision in Robotics	3(0-9-5)
01205376	Introduction to 3D Design and Prototyping	3(0-9-5)
01205377	Artificial Intelligence in Robotics	3(0-9-5)
01205471	Introduction to Robotics	3(0-9-5)
01205478	Human Robot Interface	3(0-9-5)
01205491	Electrical Engineering Project I	1(0-3-2)
01205497	Seminar	1
01205499	Electrical Engineering Project II	3(0-9-5)
**01205354	Electrical System Design in Buildings	3(3-0-6)

Note:

* Select either track and depended upon the future trend of technologies, all elective courses may be improved or changed.

** For Intelligent robotics track, this course is required for "License for Professional Practice (Associate Electrical Engineer (Power))."