

**Bachelor of Electrical Engineering Technology (Industrial Automation & Robotics)  
with Honours (BEEA)  
UPU Code: UC6522004**

Programme Name :	<b>Bachelor of Electrical Engineering Technology (Industrial Automation &amp; Robotics) with Honours</b>
UPU Code :	<b>CY32</b>
Short Code :	<b>BEEA</b>
Duration :	<b>Full Time : (Minimum 4 years and Maximum 6 years)</b>
Department :	<b>Department of Electrical Engineering Technology (<a href="#">JTKE</a>)</b>
Entry Requirement :	See >> <b>Admission</b>

Bachelor of Electrical Engineering Technology (Industrial Automation & Robotics) With Honours specializes in wide range of areas especially in the field of industrial automation such as finding and implementing new methods of production and applying of latest technology in industry. It is a combination of control system, embedded system, robotics and process control that will enhance graduate skills to manage effectively through the Factory Management System (FMS).

**PROGRAMME EDUCATIONAL OBJECTIVES (PEO)**

Program Educational Objectives (PEO) is specific goals describing expected achievements of graduates in their career and professional life after graduation. Below are the PEO for Faculty of Engineering Technology.

PEO1	To produce engineering technologists who are creative and innovative to practice in electrical/ electronic/computer engineering technology fields.
PEO2	To produce engineering technologists who are able to engage with continuous professional development and constantly adapt to evolving technologies
PEO3	To produce engineering technologists who are able to practice professional ethics and leadership to meet the needs of the society

## PROGRAM OUTCOME (PO)

Upon completion of this program, graduate should be able to:

PO1	Ability to apply knowledge of mathematics, science, engineering fundamentals and engineering specialisation principles to defined and applied engineering procedures, processes, systems or methodologies in the field of electrical engineering technology (industrial automation & robotics / industrial power).
PO2	Ability to solve broadly-defined engineering problems systematically to reach substantiated conclusions, using tools and techniques appropriate to electrical engineering technology (industrial automation & robotics / industrial power).
PO3	Ability to design solutions for broadly-defined engineering technology problems, and to design systems, components or processes to meet specified needs with appropriate consideration for public health and safety, as well as cultural, societal, environmental and sustainability concerns.
PO4	Ability to plan and conduct experimental investigations of broadly-defined problems, using data from relevant sources.
PO5	Ability to select and apply appropriate techniques, resources and modern engineering tools, with an understanding of their limitations.
PO6	Ability to function effectively as individuals, and as members or leaders in diverse technical teams.
PO7	Ability to communicate effectively with the engineering community and society at large.
PO8	Ability to demonstrate an awareness of and consideration for societal, health, safety, legal and cultural issues and their consequent responsibilities.
PO9	Ability to demonstrate an understanding of professional ethics, responsibilities and norms of engineering technology practices.
PO10	Ability to demonstrate an awareness of management, business practices and entrepreneurship.
PO11	Ability to demonstrate an understanding of the impact of engineering practices, taking into account the need for sustainable development.

PO12

Ability to recognise the need for professional development and to engage in independent and lifelong learning.

## **CAREER PROSPECT**

### Electrical Engineering Technology

Graduates Electrical engineering technology (EET) is an engineering technology field that implements and applies the principles of electrical engineering. The role of electrical engineering technologists is primarily to design, develop, test, and manufacture electrical and electronic equipment and they may work in product evaluation and testing, using measuring and diagnostic devices to adjust, test, and repair equipment. Graduates of electrical engineering technology programs capable of accommodate a wide range of career fields, such as:

- Telecommunications and signal processing
- Medical technology and devices
- Aerospace and avionics
- Transportation
- Computers
- Electrical power industry and power distribution
- Optoelectronics
- Research and development
- Process Control
- Manufacturing Industries

	CODE	SUBJECT	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 1	BEEU 1013	Matematik Teknikal <i>Technical Mathematics</i>	P	3	
	BEEA 1304	Elektronik & Sistem Digital <i>Digital Electronics &amp; Systems</i>	K	4	
	BEEY 1303	Pengukuran dan Instrumentasi <i>Measurement and Instrumentation</i>	K	3	
	BEEA 1313	Rekabentuk Terbantu Komputer <i>Computer Aided Design</i>	K	3	
	BEEI 1303	Pengenalan Litar Elektrik <i>Electrical Circuit Fundamental</i>	K	3	
	BIPW 1132	Falsafah dan Isu Semasa <i>Philosophy and Current Issue</i>	W	2	
	BKKX XXX1	Kokurikulum I <i>Cocurriculum I</i>	W	1	
<b>TOTAL CREDITS THIS SEMESTER</b>				<b>19</b>	
SEMESTER 2	BEEU 1023	Kalkulus untuk Teknologi <i>Calculus for Technology</i>	P	3	
	BEEI 1311	Bengkel Elektrik I <i>Electrical Workshop I</i>	K	1	
	BEEI 1323	Elektrik & Kemagnetan <i>Electrical &amp; Magnetism</i>	K	3	
	BEEI 1453	Prinsip Elektronik <i>Electronics Principle</i>	K	3	
	**BEEI 1333	Litar Elektrik Lanjutan <i>Advanced Electrical Circuits</i>	K	3	BEEI 1303
	BEEA 1343	Pengaturcaraan Komputer <i>Computer Programming</i>	K	3	
	BLLW 1142	Bahasa Inggeris untuk Akademik <i>English for Academic Purposes</i>	W	2	
	BLLW 1172	Bahasa Melayu Komunikasi <b>(untuk pelajar antarabangsa)</b>	W	2	

		<i>Malay Language for Communication</i> <i>(for international students)</i>			
<b>TOTAL CREDITS THIS SEMESTER</b>					
<b>LOCAL STUDENT</b>				<b>18</b>	
<b>INTERNATIONAL STUDENT</b>				<b>20</b>	

	CODE	SUBJECT	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 3	BEEU 2033	Kalkulus Lanjutan untuk Teknologi <i>Advanced Calculus for Technology</i>	P	3	
	BEEA 2061	Seminar Kejuruteraan I <i>Engineering Seminar I</i>	P	1	
	**BEEI 2342	Bengkel Elektrik II <i>Electrical Workshop II</i>	K	2	BEEI 1311
	BEEA 2363	Statik & Mekanik <i>Static &amp; Mechanics</i>	K	3	
	BEEI 2364	Teknologi Elektrik <i>Electrical Technology</i>	K	4	
	BEEI 2373	Mesin Elektrik <i>Electrical Machine</i>	K	3	
	BLLW 1XX2	Bahasa Ketiga <i>Third Language</i>	W	2	
	BKKX XXX1	Kokurikulum II <i>Cocurriculum II</i>	W	1	
<b>TOTAL CREDITS THIS SEMESTER</b>				<b>19</b>	
SEMESTER 4	BEEU 2043	Kaedah Statistik <i>Statistical Methods</i>	P	3	
	BEEA 2374	Sistem Terbenam <i>Embedded Systems</i>	K	4	
	BEEI 3413	Elektronik Kuasa <i>Power Electronics</i>	K	3	
	BMMH 2313	Mekanik Bendalir <i>Fluids Mechanics</i>	K	3	
	BEEA 2383	Pengenalan Sistem Kawalan <i>Control System Fundamental</i>	K	3	
	BLLW 2152	Penulisan Akademik <i>Academic Writing</i>	W	2	
<b>TOTAL CREDITS THIS SEMESTER</b>				<b>18</b>	

	CODE	SUBJECT	CATEGORY	CREDIT	PRE-REQUISIT
SEMESTER 5	BEEI 2383	Teknologi Sistem Kuasa <i>Power System Technology</i>	K	3	
	BEEA 3463	Data Komunikasi Industri <i>Industrial Data Communication</i>	K	3	
	**BEEA 3393	Kejuruteraan Sistem Kawalan <i>Control System Engineering</i>	K	3	BEEA 2383
	BEEA 3464	PLC & Automasi <i>PLC &amp; Automation</i>	K	4	
	BIPW 2132	Penghayatan Etika dan Peradaban <b>(untuk pelajar tempatan)</b> <i>Appreciation of Ethics and Civilisation</i> <b>(for local students)</b>	W	2	
	BIPW 2122	Kebudayaan Malaysia <b>(untuk pelajar antarabangsa)</b> <i>Malaysian Culture</i> <b>(for international students)</b>	W	2	
	***BIPW XXX2	Elektif Umum <i>General Elective</i>	E	2	
<b>TOTAL CREDITS THIS SEMESTER</b>					
<b>LOCAL STUDENT</b>				<b>17</b>	
<b>INTERNATIONAL STUDENT</b>				<b>17</b>	
SEMESTER 6	BEEI 3061	Seminar Kejuruteraan II <i>Engineering Seminar II</i>	P	1	
	BEEU 4053	Etika Kejuruteraan & KKPP <i>Engineering Ethics &amp; OSHE</i>	P	3	
	BEEU 3764	Projek Sarjana Muda I <i>Bachelor Degree Project I</i>	K	4	
	BEEA 3454	Sistem Kawalan Peggerak <i>Motion Control System</i>	K	4	
	BEEA 3443	Pneumatik & Hidraulik <i>Pneumatic &amp; Hydraulic</i>	K	3	
	BEEA 3433	Robotik Industri <i>Industrial Robotics</i>	K	3	

	BLLW 2152	Bahasa Inggris untuk Interaksi Profesional <i>English for Professional Interaction</i>	W	2	
<b>TOTAL CREDITS THIS SEMESTER</b>				<b>20</b>	



	CODE	SUBJECT	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 7	**BEEU 4774	Projek Sarjana Muda II <i>Bachelor Degree Project II</i>	K	4	BEEU 3764
	BIPW 3112	Pemikiran Kritis dan Kreatif <b>(untuk pelajar tempatan)</b> <i>Critical and Creative Thinking</i> <b>(for local students)</b>	W	2	
	BTMW 4012	Keusahawanan Teknologi <i>Technology Entrepreneurship</i>	W	2	
	*BEEA 48X3	Elektif I <i>Elective I</i>	E	3	
	*BEEA 48X3	Elektif II <i>Elective II</i>	E	3	
	*BEEA 48X3	Elektif II <i>Elective II</i>	E	3	
<b>TOTAL CREDITS THIS SEMESTER</b>					
<b>LOCAL STUDENT</b>				<b>17</b>	
<b>INTERNATIONAL STUDENT</b>				<b>15</b>	
SEMESTER 8	BEEU 4786	Latihan Industri <i>Industrial Training</i>	K	6	
	BEEU 4796	Laporan Latihan Industri <i>Industrial Training Report</i>	K	6	
<b>TOTAL CREDITS THIS SEMESTER</b>				<b>12</b>	
<b>TOTAL CREDITS</b>				<b>140</b>	

\*\* Pre-requisite subject

\* For Elective I, II and III students may choose any THREE (3) subject from the list below:

NO.	CODE	SUBJECT
1	BEEA 4803	Sistem Pembuatan Teranjai <i>Flexible Manufacturing System</i>
2	BEEA 4813	Kawalan Proses Industri <i>Industrial Process Control</i>
3	BEEA 4823	Penglihatan Mesin <i>Machine Vision</i>
4	BEEA 4833	Sistem Kawalan Teragih <i>Distributed Control System</i>
5	BEEA 4843	Sistem Pembuatan <i>Manufacturing System</i>
6	BEEA 4853	Sistem Kawalan Lanjutan <i>Advanced Control System</i>
7	BEEA 4863	Kepintaran Buatan <i>Artificial Intelligence</i>
8	BMMM 3523	Teknologi Penyelenggaraan & Pengurusan Aset <i>Maintenance Technology &amp; Asset Management</i>

\*\*\* For General elective, students may choose any ONE (1) subject from the list below:

CODE	SUBJECT NAME
BIPW 1142	Falsafah Sains Dan Teknologi <i>Philosophy of Science and Technology</i>
BIPW 4112	Komunikasi Organisasi <i>Organizational Communication</i>
BIPW 1152	Psikologi Industri dan Organisasi <i>Industrial Psychology and Organization</i>
BIPW 4122	Kemahiran Perundingan <i>Negotiation Skills</i>
BIPW 2142	Sosiologi Industri <i>Industrial Sociology</i>

# For Professional Certificate Preparation Course, student may choose any ONE (1) certificate from the list below:

CODE	CERTIFICATE NAME
BEET 3100	Cisco Certified Network Associate Routing & Switching (Preparation)
BEEC 2210	IoT Fundamentals: Connecting Things Professional Certification
BEEC 2220	IoT Fundamentals: Big Data & Analytics Professional Certification
BEEE 3210	Programmable Logic Controller (PLC) Level 1 and Level 2
BEEE 4210	SMCT MT1 – Practical Mechatronics 1

Number of credit hours regarding to course category is represented in the table below.

W = university compulsory subjects

P = program core subjects

K = course core subjects

E = elective subjects

<b>Programme P</b>	<b>P</b>	<b>17</b>
<b>Course K</b>	<b>K</b>	<b>82</b>
<b>University Compulsory</b>	<b>W</b>	<b>18</b>
<b>Industrial Training</b>	<b>K</b>	<b>12</b>
<b>Elective</b>	<b>E</b>	<b>11</b>
		<b>140</b>