

DIPLOMA IN ELECTRONIC PRODUCT DEVELOPMENT

SYLLABUS

EE-021-2:2012 (ELECTRONIC EQUIPMENT
INSTALLATION, TROUBLESHOOTING &
MAINTENANCE)

EE-021-3:2012 (ELECTRONIC EQUIPMENT
INSTALLATION, TROUBLESHOOTING &
MAINTENANCE)

EE-021-4:2012 (ELECTRONIC PRODUCT
DEVELOPMENT)



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|---|--------------------|
| EKS101 | ELECTRONIC SCHEMATIC DRAWING | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill the basic types of electronic design diagrams that can be produced manually by hand or using drawing application software. By being competent in this Competency Unit, the personnel will be able to identify the basic electronics components, symbols and circuit diagrams. The drawing will be according to design specification. The personnel who are competent in electronic schematic drawing shall be able to identify electronic schematic design drawing requirements, produce schematic drawing and confirm drawing approval.

LEARNING OUTCOME

- Identify electronic schematic drawing requirements
- Prepare electronic schematic drawing requirements
- Perform electronic schematic drawing
- Submit electronic schematic drawing



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS102 | INSTRUMENT AND TEST EQUIPMENT SET UP & HANDLING | 6 |

MODULE OBJECTIVE

This module covers knowledge and skill to instrument and test equipment set up and operating procedures according to manufacturer's manual and specification. The personnel who are competent in instrument and test equipment set up & handling shall be able to identify instrument and test equipment functionality, interpret set up & handling instruction manual, set up instrument & test equipment, check validity of instrument & test equipment and obtain superior approval.

LEARNING OUTCOME

- Identify instrument and test equipment set up & handling requirement
- Prepared for instrument and test equipment set up & handling activities
- Set up instrument & test equipment
- Perform recording & tagging of instrument & test equipment
- Report instrument & test equipment set up and handling activities



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|---|--------------------|
| EKS103 | INDUSTRIAL ELECTRONIC EQUIPMENT INSTALLATION | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill to electronic equipment installation according to manufacturer's manual and specification. The personnel who are competent in electronic equipment shall be able to identify electronic equipment installation, , test electronic equipment functionality and produce electronic equipment installation report

LEARNING OUTCOME

- Identify industrial electronic equipment installation requirements
- Install industrial electronic equipment
- Confirm customer acceptance
- Report industrial electronic equipment installation activities



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|----------------|-----------------------------|--------------------|
| CAZ0091 | COMMUNICATION SKILLS | 1 |

MODULE OBJECTIVE

This course is to enable students to describes the requirement to communicate ideas and information clearly, organizational practices and the importance of culture in communication. In this Core Abilities (CA) shall be able to apply working language appropriately, apply oral communication and speak reasonably and understand reading materials

LEARNING OUTCOME

- Communicate effectively using appropriate language and formats as well as understand organizational practices and intercultural communication.



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|----------------|--|--------------------|
| CAZ0092 | INTERPERSONAL RELATIONSHIPS | 1 |

MODULE OBJECTIVE

This course is to enable students to describes the requirement to understand the concept of honesty and integrity, punctuality of job delivery and work in a team to complete a basic task. In this Core Abilities (CA) shall be able to demonstrate honesty and integrity, adopt work punctuality and demonstrate team cooperation

LEARNING OUTCOME

- Demonstrate good attitudes, values and behavior in the working environment.



**KOLEJ SYNERGY
(SEMESTER 2)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS201 | INSTRUMENT AND TEST EQUIPMENT TROUBLESHOOTING | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill to test equipment-troubleshooting activities that are performed according to manufacturer's manual and specification. The personnel who are competent in instruments and test equipment troubleshooting shall be able to identify troubleshooting of instrument and test equipment, carry out instrument and test functionality, testing electronic equipment functionality and prepare equipment troubleshooting report.

LEARNING OUTCOME

- Identify the instrument and test equipment troubleshooting requirement
- Prepare troubleshooting requirements
- Perform troubleshooting on equipment
- Set up the instrument and test equipment for dummy product



**KOLEJ SYNERGY
(SEMESTER 2)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS202 | INDUSTRIAL ELECTRONIC EQUIPMENT TROUBLESHOOTING | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill of electronic equipment troubleshooting activities that are performed according to manufacturer's manual and specification. The personnel who are competent in electronic equipment troubleshooting shall be able to identify troubleshooting of equipment, carry out equipment and test equipment functionality, and prepare equipment and submit equipment troubleshooting report.

LEARNING OUTCOME

- Identify the industrial electronic equipment troubleshooting requirements
- Prepare troubleshooting requirements
- Perform troubleshooting on equipment
- Report equipment industrial electronic equipment troubleshooting



**KOLEJ SYNERGY
(SEMESTER 2)**

| CODE | CODE NAME | CREDIT HOUR |
|----------------|---|--------------------|
| EKSS203 | ELECTRONIC PRODUCT QUALITY CONTROL | 4 |

MODULE OBJECTIVE

This module covers knowledge and skill to carry out product quality control according to manufacturer's manual and specification. The personnel who are competent in electronic product quality control shall be able to identify product specification, carry out product specification functionality, interpret the inspection result and prepare inspection results report.

LEARNING OUTCOME

- Identify electronic product quality control requirement
- Prepare electronic quality control activities requirement
- Perform electronic quality control
- Report inspection result to superior



**KOLEJ SYNERGY
(SEMESTER 2)**

| CODE | CODE NAME | CREDIT HOUR |
|---------|---------------------|-------------|
| CAZ0093 | WORKPLACE ETIQUETTE | 2 |

MODULE OBJECTIVE

This course provides students the knowledge on workplace to follow the chain of command, adhere to working guidelines, demonstrate concept of discipline and maintain good social interactions. In this Core Abilities (CA) shall be able to respond to instructions and demonstrate discipline.

LEARNING OUTCOME

- Understand the chain of command and portray good workplace ethics behavior in the working environment.



**KOLEJ SYNERGY
(SEMESTER 3)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS301 | PROGRAMMABLE LOGIC CONTROLLER (PLC) CONFIGURATION | 4 |

MODULE OBJECTIVE

This module covers knowledge and skill to carry out Programmable Logic Control (PLC) Configuration according to manufacturer's manual and specification. The personnel who are competent in Programmable Logic Controller (PLC) configuration shall be able to identify microprocessor chip/device specification, carry out product specification functionality, interpret the inspection result and prepare inspection results report.

LEARNING OUTCOME

- Identify microprocessor chip/device
- Identify microprocessor programming language
- Obtain plc device information/data sheet
- Check hardware connection
- Run program
- Report plc configuration activities



**KOLEJ SYNERGY
(SEMESTER 3)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS302 | ELECTRONIC EQUIPMENT PREVENTIVE MAINTENANCE | 4 |

MODULE OBJECTIVE

This module covers knowledge and skill to carry out services and maintenance electronic equipment preventive according to manufacturer's manual and specification. The personnel who are competent in electronic equipment preventive maintenance shall be able to identify electronic equipment preventive, carry out electronic equipment preventive functionality, inspect the equipment adjustment as per specifications and complete service book report

LEARNING OUTCOME

- Identify electronic equipment to be service and maintained
- Prepare the preventive tools and maintenance tool and material
- Identify maintenance schedule record
- Identify location of the electronic equipment
- Check service manual and contents
- Check power source
- Dismantle electronics equipment
- Perform servicing activities
- Assemble electronics equipment part
- Inspect the equipment adjustment as per specifications
- Complete service book reports
- Complete the test check list as per specification
- Complete service book report



**KOLEJ SYNERGY
(SEMESTER 3)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS303 | ELECTRONIC EQUIPMENT CORRECTIVE MAINTENANCE | 4 |

MODULE OBJECTIVE

This module covers knowledge and skill to carry out services and maintenance electronic equipment corrective according to manufacturer's manual and specification. The personnel who are competent in electronic equipment corrective maintenance shall be able to identify the electronic tools, equipments and materials, check service manual and content, perform troubleshooting, functionality test and electronic equipment corrective maintenance report submitted to superior.

LEARNING OUTCOME

- Identify the electronic tools, equipment and materials
- Check service manual and contents
- Perform troubleshooting
- Report electronic equipment corrective maintenance activities



**KOLEJ SYNERGY
(SEMESTER 3)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS304 | ELECTRONIC APPLIANCE REPAIR & MAINTENANCE | 4 |

MODULE OBJECTIVE

This module covers knowledge and skill to carry out repair and maintenance on electronic appliances according to manufacturer's manual and specification. The personnel who are competent in electronic appliance repair and maintenance shall be able to identify the electronic tools, appliances and materials, check repair manual and content, perform troubleshooting, functionality test and electronic appliance repair and maintenance report submitted to superior.

LEARNING OUTCOME

- Identify the electronic appliance repair and maintenance requirements
- Perform electronic appliance repair and maintenance
- Report electronic appliance repair and maintenance activities



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS401 | ELECTRONIC EQUIPMENT ADMINISTRATION | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill to administer electronic equipment in terms of ensuring equipment performance, by coordinating equipment calibration to ensure it is according to standard and preparation of equipment handling Standard Operating Procedures to ensure proper usage of equipment according to manufacturer's manual and company procedures. All administration work must then be reported to superiors

LEARNING OUTCOME

- Identify equipment performance status based on performance chart
- Coordinate equipment calibration work
- Manage procurement requisition
- Prepare standard operation procedures for electronic equipment
- Monitor electronic equipment administration tools, equipment & material usage
- Report tools, equipment & materials administration activities



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|--------|---|-------------|
| EKS402 | ELECTRONIC PRODUCT & TECHNOLOGY IMPROVEMENT | 3 |

MODULE OBJECTIVE

This module covers knowledge and skill to incorporate a configuration change involving engineering and testing on end products and repairable components, or changes on other than developmental items to increase effectiveness. Improvement activities consist of identifying requirements, improving the components and PCB board, then conducting a functionality test to confirm the effectiveness of the improvement work done.

LEARNING OUTCOME

- Identify electronic product improvement requirement
- Analyse component usage
- Carry out product improvement
- Produce product and technology improvement report



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|---|--------------------|
| EKS403 | ELECTRONIC PRODUCT QUALITY ASSURANCE | 2 |

MODULE OBJECTIVE

This module covers knowledge and skill to monitoring and evaluation of the various aspects of electronics' product to maximize the probability that minimum standards of quality are being attained by the production process. The personnel who are competent in electronic product quality assurance must be able to analyse electronic product to be audited, and ensure product for compliance,

LEARNING OUTCOME

- Prepare electronic product quality assurance requirement
- Verify product compliance requirement
- Produce audit report



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|-------------|-------------------------|--------------------|
| | Subject tambahan | 3 |

MODULE OBJECTIVE

LEARNING OUTCOME



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|----------------|--|--------------------|
| CAZ0094 | HEALTH, SAFETY & ENVIRONMENT MONITORING | 2 |

MODULE OBJECTIVE

This course provides students the knowledge and describes the requirements to identify health awareness program objectives and monitor the HSE program accomplishment.

LEARNING OUTCOME

- To ensure health awareness program, safety awareness program and environmental awareness program.
- To monitor all health, safety and environmental awareness programs.



**KOLEJ SYNERGY
(SEMESTER 5)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS501 | MICROCONTROLLER CONFIGURATION | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill to manage a self-contained system with a processor, memory and peripherals and can be used as an embedded system. Activities in this competency consist of selecting the microcontroller, configuring the microcontroller program and confirming the microcontroller functionality by running the program and interfacing it with the program.

LEARNING OUTCOME

- Select microcontroller
- Configure microcontroller program
- Confirm microcontroller functionality



**KOLEJ SYNERGY
(SEMESTER 5)**

| CODE | CODE NAME | CREDIT HOUR |
|------|------------------|-------------|
| | Subject tambahan | 4 |

MODULE OBJECTIVE

LEARNING OUTCOME

| CODE | CODE NAME | CREDIT HOUR |
|------|------------------|-------------|
| | Subject tambahan | 4 |

MODULE OBJECTIVE

LEARNING OUTCOME



**KOLEJ SYNERGY
(SEMESTER 5)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|------------------------|--------------------|
| EKS502 | ON JOB TRAINING | 8 |

MODULE OBJECTIVE

This module covers knowledge and skill Practice / On job training in industry where student need to undergo in plant training for 4 month, to be evaluate by their supervise and write the executive report

LEARNING OUTCOME

- Apply knowledge in a professional setting
- Develop professionally relevant competencies and relationships in a professional setting
- Observe and begin to understand a professional organizational culture
- Evaluate one's own performance in light of one's expressed goals and learning outcomes
- Clarify one's calling through reflection on the internship experience



**KOLEJ SYNERGY
(SEMESTER 6)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|---------------------------|--------------------|
| EKS601 | FINAL YEAR PROJECT | 4 |

MODULE OBJECTIVE

This module covers knowledge and skill to determine the project name, research, modification, planning analysis and proposal preparation. Process: construct the project, mechanical assembly, write and edit software and troubleshoot. Completion: documentation and presentation.

LEARNING OUTCOME

- Design and plan a project and manage the time involved to complete the project, and related report, within given time constraints.
- Source, read and critically evaluate the primary literature on the chosen topic.
- Demonstrate the ability to work independently and also to recognize the need for, and seek, appropriate academic supervision.
- Formulate and communicate a research problem or aim.
- Identify, justify and use an appropriate methodology in addressing the identified research problem.
- Identify, justify and use an appropriate methodology in addressing the identified research problem.
- Accurately record, interpret and report relevant data in a manner that addresses the research question.

DIPLOMA IN ELECTRONIC PRODUCT DEVELOPMENT

SYLLABUS

C261-001-2:2020 (ELECTRONIC COMPONENTS
AND BOARDS
TESTING, TROUBLESHOOTING AND MAINTENANCE)
C261-001-3:2020(ELECTRONIC COMPONENTS
AND BOARDS TROUBLESHOOTING AND
SUPERVISION)
EE-021-4:2012 (ELECTRONIC PRODUCT
DEVELOPMENT)



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|---------------------------------|--------------------|
| EKS101 | ELECTRONIC PARTS TESTING | 7 |

MODULE OBJECTIVE

This module covers knowledge and skill for trainees to test electronic parts, which include components and boards, and separate the faulty electronic parts from the good ones.

LEARNING OUTCOME

- Prepare electronic parts testing requirements.
- Test electronic components.
- Test electronic PCB.
- Segregate faulty electronic parts.
- Prepare electronic parts testing activities report.



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|---|--------------------|
| EKS102 | ELECTRONIC PRINTED CIRCUIT BOARD ASSEMBLY (PCBA) TESTING | 7 |

MODULE OBJECTIVE

This module covers knowledge and skill to check electronic PCBA functions and performance, and separate the non-compliance electronic PCBA from the good ones.

LEARNING OUTCOME

- Prepare electronic PCBA testing requirements.
- Set up test equipment.
- Test Device Under Test (DUT).
- Segregate non-compliance electronic PCBA.
- Prepare electronic PCBA testing activities report.



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS103 | ELECTRONIC COMPONENTS AND PRINTED CIRCUIT BOARD ASSEMBLY (PCBA) FIRST LEVEL TROUBLESHOOTING | 6 |

MODULE OBJECTIVE

This module covers knowledge and skill to identify discrete electronic components and PCBA performance base problems.

LEARNING OUTCOME

- Prepare electronic components and PCBA first level troubleshooting requirements.
- Troubleshoot electronic components and PCBA.
- Prepare electronic components and PCBA first level troubleshooting activities report.



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|----------------|-----------------------------|--------------------|
| CAZ0091 | COMMUNICATION SKILLS | 1 |

MODULE OBJECTIVE

This course is to enable students to describes the requirement to communicate ideas and information clearly, organizational practices and the importance of culture in communication. In this Core Abilities (CA) shall be able to apply working language appropriately, apply oral communication and speak reasonably and understand reading materials

LEARNING OUTCOME

- Communicate effectively using appropriate language and formats as well as understand organizational practices and intercultural communication.



**KOLEJ SYNERGY
(SEMESTER 1)**

| CODE | CODE NAME | CREDIT HOUR |
|----------------|--|--------------------|
| CAZ0092 | INTERPERSONAL RELATIONSHIPS | 1 |

MODULE OBJECTIVE

This course is to enable students to describes the requirement to understand the concept of honesty and integrity, punctuality of job delivery and work in a team to complete a basic task. In this Core Abilities (CA) shall be able to demonstrate honesty and integrity, adopt work punctuality and demonstrate team cooperation

LEARNING OUTCOME

- Demonstrate good attitudes, values and behavior in the working environment.



**KOLEJ SYNERGY
(SEMESTER 2)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS201 | ELECTRONIC COMPONENTS REPLACEMENT | 3 |

MODULE OBJECTIVE

This module covers knowledge and skill to replace faulty electronic components so that the affected part is working as determined.

LEARNING OUTCOME

- Prepare electronic components replacement requirements.
- Replace faulty electronic components.
- Test replaced electronic components functionality.
- Segregate faulty electronic components.
- Prepare electronic components replacement work activities report.



**KOLEJ SYNERGY
(SEMESTER 2)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS202 | IN-CIRCUIT TESTER (ICT) MAINTENANCE | 3 |

MODULE OBJECTIVE

This module covers knowledge and skill of maintain the electronic components and PCBA ICT so that ICT will works properly as determined.

LEARNING OUTCOME

- Prepare ICT maintenance requirements.
- Set up ICT.
- Run ICT using Known Good Reference PCBA.
- Replace test pin.
- Replace wire and receptacle.
- Prepare ICT maintenance work activities report.



**KOLEJ SYNERGY
(SEMESTER 2)**

| CODE | CODE NAME | CREDIT HOUR |
|----------------|---|--------------------|
| EKSS203 | IN-CIRCUIT TESTER (ICT) PERFORMANCE VERIFICATION | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill to confirm electronic components and PCBA ICT is working properly according to work instructions, industry standards and company's SOP.

LEARNING OUTCOME

- Prepare ICT performance verification requirements.
- Confirm ICT performance.
- Confirm ICT functionality with Known Good Reference PCBA.
- Perform DUT final test.
- Prepare ICT performance verification work activities report.



**KOLEJ SYNERGY
(SEMESTER 2)**

| CODE | CODE NAME | CREDIT HOUR |
|-------------|------------------------|--------------------|
| | SUBJEK TAMBAHAN | 4 |

MODULE OBJECTIVE

LEARNING OUTCOME



**KOLEJ SYNERGY
(SEMESTER 2)**

| CODE | CODE NAME | CREDIT HOUR |
|---------|---------------------|-------------|
| CAZ0093 | WORKPLACE ETIQUETTE | 2 |

MODULE OBJECTIVE

This course provides students the knowledge on workplace to follow the chain of command, adhere to working guidelines, demonstrate concept of discipline and maintain good social interactions. In this Core Abilities (CA) shall be able to respond to instructions and demonstrate discipline.

LEARNING OUTCOME

- Understand the chain of command and portray good workplace ethics behavior in the working environment.



**KOLEJ SYNERGY
(SEMESTER 3)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS301 | PRINTED CIRCUIT BOARDS ASSEMBLY (PCBA) FUNCTIONAL TESTER PERFORMANCE VERIFICATION | 6 |

MODULE OBJECTIVE

This module covers knowledge and skill to confirm electronic components and PCBA functional tester is working properly according to work instructions, industry standards and company's SOP.

LEARNING OUTCOME

- Prepare PCBA functional tester performance verification requirements.
- Confirm PCBA functional tester performance.
- Confirm PCBA functional tester functionality with Known Good Reference PCBA.
- Perform DUT Final Test.
- Prepare PCBA functional tester performance verification work activities report.



**KOLEJ SYNERGY
(SEMESTER 3)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|---|--------------------|
| EKS302 | ELECTRONIC COMPONENTS AND PRINTED CIRCUIT BOARD ASSEMBLY (PCBA) SECOND LEVEL TROUBLESHOOTING | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill to finding caused of integrated electronic components and PCBA functionality error according to work instructions, industry standards and company's SOP.

LEARNING OUTCOME

- Prepare electronic components and PCBA second level troubleshooting requirements.
- Troubleshoot electronic components and PCBA.
- Prepare electronic components and PCBA second level troubleshooting activities report.



**KOLEJ SYNERGY
(SEMESTER 3)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS303 | ELECTRONIC COMPONENTS AND BOARD TESTING, TROUBLESHOOTING AND MAINTENANCE WORK SUPERVISION | 4 |

MODULE OBJECTIVE

This module covers knowledge and skill to ensure electronic components and boards testing, troubleshooting and maintenance work activities are carried out according clients' requirements, company's SOP, and workplace safety and environmental regulatory requirements.

LEARNING OUTCOME

- Identify electronic components and boards testing, troubleshooting and maintenance work requirements.
- Conduct operational briefing.
- Supervise electronic components and boards testing, troubleshooting and maintenance activities.
- Supervise HSE compliance.
- Conduct training activities.



**KOLEJ SYNERGY
(SEMESTER 3)**

| CODE | CODE NAME | CREDIT HOUR |
|-------------|------------------------|--------------------|
| | SUBJEK TAMBAHAN | 4 |

MODULE OBJECTIVE

LEARNING OUTCOME



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS401 | ELECTRONIC EQUIPMENT ADMINISTRATION | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill to administer electronic equipment in terms of ensuring equipment performance, by coordinating equipment calibration to ensure it is according to standard and preparation of equipment handling Standard Operating Procedures to ensure proper usage of equipment according to manufacturer's manual and company procedures. All administration work must then be reported to superiors

LEARNING OUTCOME

- Identify equipment performance status based on performance chart
- Coordinate equipment calibration work
- Manage procurement requisition
- Prepare standard operation procedures for electronic equipment
- Monitor electronic equipment administration tools, equipment & material usage
- Report tools, equipment & materials administration activities



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|--------|---|-------------|
| EKS402 | ELECTRONIC PRODUCT & TECHNOLOGY IMPROVEMENT | 3 |

MODULE OBJECTIVE

This module covers knowledge and skill to incorporate a configuration change involving engineering and testing on end products and repairable components, or changes on other than developmental items to increase effectiveness. Improvement activities consist of identifying requirements, improving the components and PCB board, then conducting a functionality test to confirm the effectiveness of the improvement work done.

LEARNING OUTCOME

- Identify electronic product improvement requirement
- Analyse component usage
- Carry out product improvement
- Produce product and technology improvement report



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|---|--------------------|
| EKS403 | ELECTRONIC PRODUCT QUALITY ASSURANCE | 2 |

MODULE OBJECTIVE

This module covers knowledge and skill to monitoring and evaluation of the various aspects of electronics' product to maximize the probability that minimum standards of quality are being attained by the production process. The personnel who are competent in electronic product quality assurance must be able to analyse electronic product to be audited, and ensure product for compliance,

LEARNING OUTCOME

- Prepare electronic product quality assurance requirement
- Verify product compliance requirement
- Produce audit report



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|--|--------------------|
| EKS404 | MICROCONTROLLER CONFIGURATION | 5 |

MODULE OBJECTIVE

This module covers knowledge and skill to manage a self-contained system with a processor, memory and peripherals and can be used as an embedded system. Activities in this competency consist of selecting the microcontroller, configuring the microcontroller program and confirming the microcontroller functionality by running the program and interfacing it with the program.

LEARNING OUTCOME

- Select microcontroller
- Configure microcontroller program
- Confirm microcontroller functionality



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|------|------------------|-------------|
| | Subject tambahan | 3 |

MODULE OBJECTIVE

LEARNING OUTCOME



**KOLEJ SYNERGY
(SEMESTER 4)**

| CODE | CODE NAME | CREDIT HOUR |
|---------|--|-------------|
| CAZ0094 | HEALTH, SAFETY & ENVIRONMENT MONITORING | 2 |

MODULE OBJECTIVE

This course provides students the knowledge and describes the requirements to identify health awareness program objectives and monitor the HSE program accomplishment.

LEARNING OUTCOME

- To ensure health awareness program, safety awareness program and environmental awareness program.
- To monitor all health, safety and environmental awareness programs.



**KOLEJ SYNERGY
(SEMESTER 5)**

| CODE | CODE NAME | CREDIT HOUR |
|--------|-----------------|-------------|
| EKS502 | ON JOB TRAINING | 8 |

MODULE OBJECTIVE

This module covers knowledge and skill Practice / On job training in industry where student need to undergo in plant training for 4 month, to be evaluate by their supervise and write the executive report

LEARNING OUTCOME

- Apply knowledge in a professional setting
- Develop professionally relevant competencies and relationships in a professional setting
- Observe and begin to understand a professional organizational culture
- Evaluate one's own performance in light of one's expressed goals and learning outcomes
- Clarify one's calling through reflection on the internship experience



**KOLEJ SYNERGY
(SEMESTER 6)**

| CODE | CODE NAME | CREDIT HOUR |
|---------------|---------------------------|--------------------|
| EKS601 | FINAL YEAR PROJECT | 4 |

MODULE OBJECTIVE

This module covers knowledge and skill to determine the project name, research, modification, planning analysis and proposal preparation. Process: construct the project, mechanical assembly, write and edit software and troubleshoot. Completion: documentation and presentation.

LEARNING OUTCOME

- Design and plan a project and manage the time involved to complete the project, and related report, within given time constraints.
- Source, read and critically evaluate the primary literature on the chosen topic.
- Demonstrate the ability to work independently and also to recognize the need for, and seek, appropriate academic supervision.
- Formulate and communicate a research problem or aim.
- Identify, justify and use an appropriate methodology in addressing the identified research problem.
- Identify, justify and use an appropriate methodology in addressing the identified research problem.
- Accurately record, interpret and report relevant data in a manner that addresses the research question.