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UNIVERSITI TEKNOLOGI MALAYSIA



**UTM**

# Online & Blended Learning e-Catalogue

<https://mooc.utm.my>



**MOOC**  
Massive Open Online Courses



**MC** *Micro*  
Credentials

## Disclaimer

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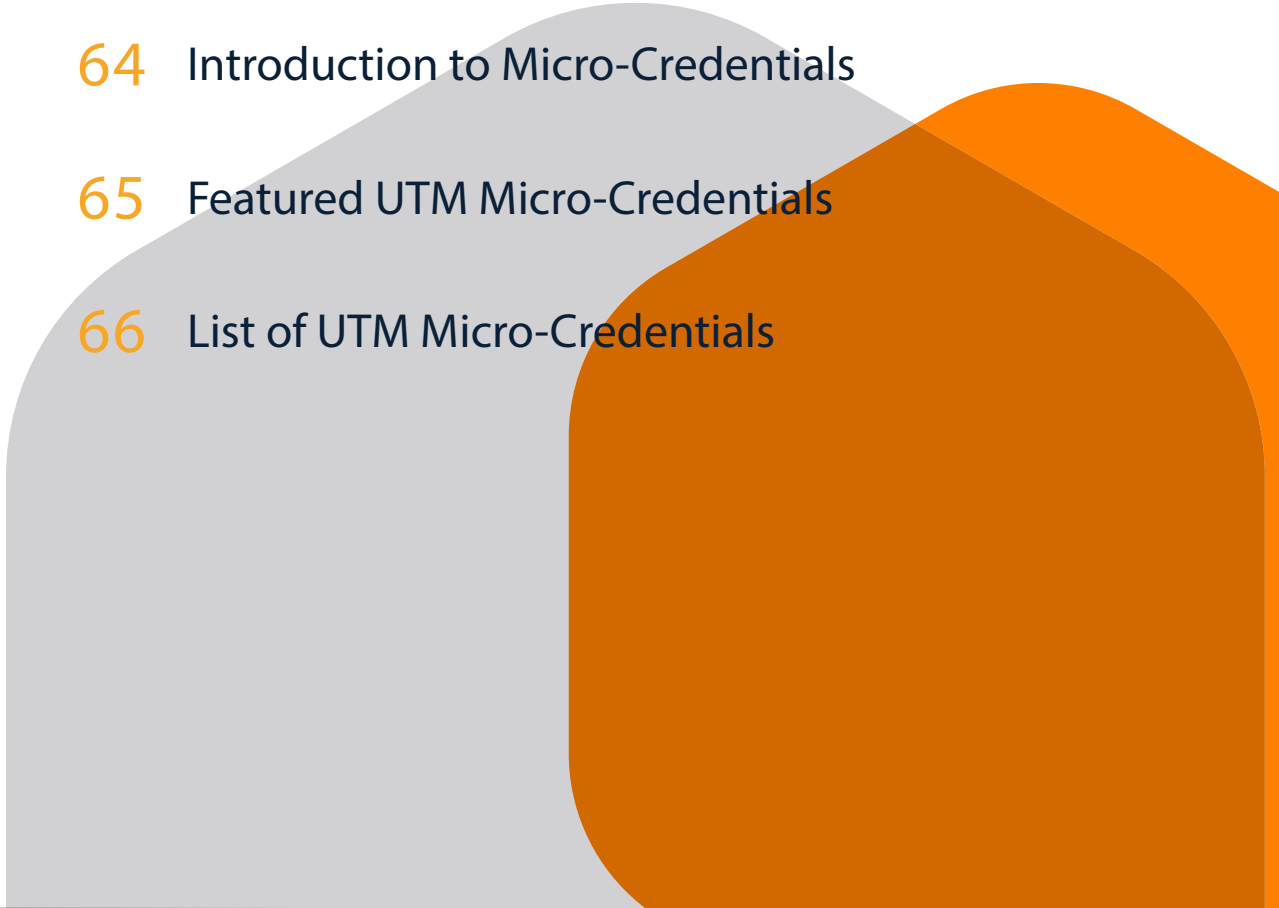
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81310 Skudai, Johor**

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# Foreword of Director



Welcome to the UTM e-Catalogue for online learning. You can find all the Massive Open Online Course (MOOC) and Micro-Credential (MC) courses we offer in this catalogue. This catalogue will be periodically updated as new MOOC and MC courses are developed.

What are MOOCs and MC courses? Why are they important? What are the benefits of learning through them?

MOOCs are online courses that are open and available for anyone to enrol in. It provides an affordable and flexible way to learn new knowledge and skills. At UTM, we use the 'free to learn and pay to certify' model for most of the MOOCs we offer, where learners can enrol for free but only need to pay if they require the certificate.

Our MC courses provide learners with knowledge, skills, and competencies in a specialised area of study or practise. Consequently, the duration and content of MC courses are shorter than those of MOOCs. In UTM, we offer three instructional modes (1) Face-to-Face or Synchronous, (2) Fully Online and Asynchronous and (3) Blended – the combination of the first two modes. If a learner completes an MC course, they will be issued a digital certificate and a badge, which can be verified and displayed on their professional network and social media.

Feel free to browse through the Table of Content for a list of the courses we offer. If you are interested in learning more, please visit the specific pages, scan the QR code, and click on the course link to access additional course information. All of our courses are hosted on the OpenLearning platform. If you have any questions or inquiries, please contact us via the provided phone number or email address.

ASSOC. PROF. DR. NURBIHA BINTI A.SHUKOR

Director,  
Center for Advancement in Digital and Flexible Learning,  
Universiti Teknologi Malaysia (UTM CDex)





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*Massive Open Online Courses*



**MC** *Micro*  
**Credentials**

<https://utmcdex.utm.my>

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# What is MOOC

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## Massive Open Online Courses (MOOC)

Massive Open Online Courses (MOOCs) are online courses available for any person to enroll for free. It provides an affordable and flexible way to learn new knowledge and skills.



**MOOC**  
*Massive Open Online Courses*



## UTM MOOC Featured Courses



### DYNAMICS OF LEADERSHIP

415 Students



### SEMINAR ON GLOBAL DEVELOPMENT, ECONOMIC & SOCIAL ISSUES



### WEB-BASED MULTIMEDIA DEVELOPMENT



### RESEARCH METHODOLOGY FOR ENGINEERING



### MALAYSIAN CARBON REDUCTION AND ENVIRONMENTAL



### MODUL KELUARGA SEJAHTERA NEGERI JOHOR (MKS NJ)

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**MOOC**  
Massive Open Online Courses

# Web Based Multimedia Development

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3vy2NpM>

**COST:**

**FREE to Learn**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**None**



Learn the basics of Web-Based Multimedia from professional and expert instructors! The course is FREE. Yes, you saw it right. It is a FREE-to-learn course and has flexible learning time, so convenient !

You will master the core design principles, web project management, testing and evaluation aspect, issues, and trends in web development as well as publishing and maintaining the website.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)"



## Course Synopsis

This course is aimed at those students wishing to produce innovative web-based multimedia especially for educational purposes. The standard and compatibility of each multimedia component in web development will be highlighted. We will also be looking at how messages are effectively constructed on the web by reviewing design concepts and discussing successful web sites. This course also will give students a basic understanding of core design principles that apply to web design and development. Web project management, testing and evaluation aspect, issues and trends in web development, as long as publishing and maintaining the website will also be emphasized. Students successfully completing this course will have an understanding of the practical and theoretical issues relevant to web design and the online presentation of information using multiple media.



## Course Learning Outcome

- ✓ Identify concepts of developing educational webpage for the use of teaching and learning.
- ✓ Apply instructional design models for developing a webpage.
- ✓ Learn technologies that relate with a webpage deeply
- ✓ Develop an educational webpage or portal that has teaching and learning elements.
- ✓ Conduct an evaluation process of the webpage or portal that has been developed.



## Pre-requisite

- ✓ 1. Basics of Multimedia
- ✓ 2. Basic Web Design
- ✓ 3. Basic Web Programming Skills



## Course Delivery Format

- ✓ Teaching Video
- ✓ Reading Materials
- ✓ Hands-on Activities



## Course Duration

- ✓ The class will be available from 3rd September 2017 until 10th February 2018
- ✓ This is a self-paced course. The instructors will monitor and respond to your activities



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# Web Programming

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3Si40LC>

**COST:**

**FREE to Learn**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



It's time to discover your true potential as a Web Programmer. Enhance your skills and expertise. This course is convenient and free. You can access the course from anywhere and at any time. At the end of the course, participants will get a "digital certificate".

You will master on fundamentals, technologies, and components for web application developments, standard HTML for content creation, CSS for content presentation, JavaScript for client-side logic, and PHP is a server-side language for business logic data processing with MySQL database.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)"



## Course Synopsis

The course is designed to present fundamentals, technologies and components for web application developments. Standard HTML for content creation, CSS for content presentation, JavaScript for client-side logics, PHP a server-side languages for business logics and data processing with MySQL database.



## Course Learning Outcome

The course is designed to present fundamentals, technologies, and components for web application developments. Standard HTML for content creation, CSS for content presentation, JavaScript for client-side logics, PHP a server-side languages for business logics and data processing with MySQL database. By the end of the course, students should be able to:

- ✓ Explain web application requirement using existing World Wide Web technologies and solving web based application exercises
- ✓ Classify the differences between client & server side web application and designing/developing a client & server web based application
- ✓ Build a web based application in a team using & combining the World Wide Web technologies such as HTML, CSS, JavaScript and Server-Side Language (PHP, Java Servlet etc)



## Pre-requisite

- ✓ Logic and basic programming skill



## Course Delivery Format

- ✓ This course involves videos for learning modules, self learning and formal assessment



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# Digital Electronics

**SCAN HERE TO  
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<https://bit.ly/3vURvw5>

**COST:**

**FREE to Learn,  
RM450 to Certify**

**COURSE  
DURATION:**

**Flexible**



Are you a person that loves to know about digital electronics? Here is the right place! The course is FREE to learn and has flexible learning time. Participants who are interested to get a certificate need to pay RM450 only.

You will be introduced to digital electronics and given a broad overview of many important concepts, components, tools, and many more.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621(WhatsApp only)"



## Course Synopsis

Digital electronics is the foundation of all microprocessor-based systems found in computers, robots, automobiles, and industrial control systems. This course introduces the students to digital electronics and provides a broad overview of many important concepts, components, and tools. Students will get up-to-date coverage of digital fundamentals-from basic concepts to programmable logic devices.



## Course Learning Outcome

- ✓ Explain the fundamental concepts and techniques used in digital electronics
- ✓ Understand the basic principles of number systems and digital codes applied to digital electronics
- ✓ Apply the laws of Boolean algebra to represent and simplify digital circuits
- ✓ Understand, analyze and design various combinational & sequential circuits



## Pre-requisite

- ✓ High School Physics



## Course Delivery Format

- ✓ Videos
- ✓ PDF Documents
- ✓ Animations



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# Mechanical & Electrical Works & Measurement

**COST:** **FREE to Learn**

**CLASS DURATION:** **Flexible**

**SCAN HERE TO FIND OUT MORE**



<https://bit.ly/3djXdB5>



This course is designed to provide students with the knowledge, understanding, and skills necessary for measurement work. The course is FREE and has flexible learning times. So convenient!

You will master the prime costs sums & provisional sums, cold water services, sanitary plumbing systems, underground drainage, and many more.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)"



## Course Synopsis

This course is designed to provide students with the knowledge, understanding and skills necessary for measurement works (mechanical and electrical engineering works) according to the Standard Method of Measurement for Building Works (SMM2). It is for the purpose of preparation of bills of quantities and estimation. In this course, learners will get to explore 10 topics on Mechanical and Electrical Works Measurement. The topics covered are:

- Introduction to Mechanical & Electrical Works Measurement
- Prime Cost Sums & Provisional Sums
- Cold Water Services
- Sanitary Plumbing System
- Underground Drainage
- Electrical Installations - Single Phase
- Electrical Installations - Three Phase
- Air Conditioning Installations - Split Unit
- Air Conditioning Installations - Centralized
- Fire Fighting System

Once enrolled in this course, learners are required to attend a minimum of eight (8) studio works in relevant Mechanical and Electrical Works Measurement for building projects. All the learning materials provided inside this course refer to the Standard Method of Measurement – Second Edition (SMM2).



## Course Learning Outcome

- ✓ Identify and describe the principles of measurement of mechanical & electrical works as stipulated in the SMM2.
- ✓ Measure, describe and quantify various specialist works according to the provisions in the Standard Method of Measurement (SMM2)
- ✓ Use computer-aided measurement software for the measurement of mechanical & electrical works.
- ✓ Present information and express ideas clearly; and work effectively in group activities.



## Pre-requisite

- ✓ This course is suitable for learners with a background in mechanical and electrical engineering works.



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# Data Structures & Algorithms

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**COST:**

**FREE, RM450 to Certify**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**

<https://bit.ly/3QIcRVi>



Learn data structures and algorithms from our professional and expert instructor! The course is FREE and has flexible learning times. Participants who are interested in getting a digital certificate need to pay RM450 only. Amazing right?

This course emphasizes data structure concepts theoretically and practically with detailed algorithms for each data structure, recursive as a programming style, and algorithm efficiency analysis with Big O notation.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)"



## Course Synopsis

This course provides an introduction to data structure and algorithms, types of data structures and programming principles. Students will learn abstract data type concepts using class and apply ADT concept in the implementation of data structures. A recursive function, algorithm efficiency, order of magnitude analysis and Big O notation will be discussed. Students will implement operations that can be applied to data structures using various sorting and searching techniques. Further, students will be exposed to linear data structures such as linked lists, stack and queue. Non-linear data structures such as trees and graphs will also be discussed. At the end of the course, students should be able to implement and apply the theory and concepts of data structure in the mini-project which is conducted in a group.



## Course Learning Outcome

The objective of this course is to introduce data structure and algorithms, recursive function, algorithm efficiency, various sorting and searching techniques. Students will be exposed to linear data structures such as linked lists, stack and queue and non-linear data structures such as tree and graphs. Students should be able to implement and apply the theory and concepts of data structure in the mini project.

- ✓ Describe and apply advanced data structures and algorithms design techniques to solve computational problems.
- ✓ Design and implement simple programs in an object-oriented language demonstrating the use of advanced data structure concepts.
- ✓ Analyze the complexity of algorithms and the performance of the algorithms and data structure.
- ✓ Answer all quizzes



## Pre-requisite

- ✓ Programming skills in any computer language



## Course Delivery Format

- ✓ Self-learning
- ✓ Formal assessment



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# Highway Engineering

**SCAN HERE TO  
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<https://bit.ly/3bY1rhu>

**COST:**

**FREE to Learn, RM300 to Certify**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**



Love to know about the head-on Highway Engineering? Here is one of your best opportunities. The course is FREE; for the certificate, a participant just needs to pay only RM450. This course also has flexible learning times. So convenient!

Students will learn the fundamentals of highway engineering and get exposure to fieldwork in the most intricate aspects of design, construction, and maintenance.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)"



## Course Synopsis

Welcome to the course learners! This is one of the compulsory courses which will expose students to the fundamental theory of highway engineering. Highway engineering is a branch from civil engineering which involves the learners to arrange, plan, operate and learn about maintenance of scaffold.

Topics that the learners will dive in are; highway materials and evaluations, premix plants, construction techniques and plants, quality controls and testing, pavement structural thickness design, highway drainage and maintenance, pavement visual assessment, and economic evaluation of transportation alternatives.

By learning all of these, learners get a peek of what highway engineers must consider when they want to improve highway intersections, highway pavement, traffic flows and geometric alignments.



## Course Learning Outcome

This is one of the compulsory courses which will expose students to the fundamental theory of highway engineering. Topics covered are; highway materials and evaluations, premix plants, construction techniques and plants, quality controls and testing, pavement structural thickness design, highway drainage and maintenance, pavement visual assessment, and economic evaluation of transportation alternatives.

- ✓ Identify materials, type of tests, construction techniques and plants, and able to carry out and evaluate/solve on-site construction and materials QC requirements.
- ✓ Identify and differentiate types of HMA gradation, mix design methods and design/evaluate HMA mix using the Marshall method.
- ✓ Analyze and design the pavement structures and maintenance programs.
- ✓ Perpetually seek and acquire contemporary technological changes in highway engineering.



## Pre-requisite

- ✓ No specific pre-requisites for this course, but basic knowledge in engineering survey and soil mechanics will be advantageous



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# Research Methods for Educational Research

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3pwiYRd>

**COST:** **FREE to Learn**

**CLASS  
DURATION:** **Flexible**



"Research Methods for Educational Research" is a one-of-a-kind online course, it explains in detail the process of conducting educational research.

The content will help students in choosing their research area and creating an appropriate methodology to solve real-world problems.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The course exposes students to various methods of conducting research. The main topics discussed are concepts and criteria of scientific research in education, procedures in conducting research activities including selecting topic, defining research background, formulating problem statements, research objectives, research questions and hypotheses. Topics related to procedures such as literature search, constructing research methodology, sampling, conducting pilot study, and data processing are also discussed. Students should be able to work in groups to construct a research proposal relevant to their respective field of study.



## Course Learning Outcome

The course exposes students to various methods of conducting research. The main topics discussed are concepts and criteria of scientific research in education, procedures in conducting research activities including selecting topic, defining research background, formulating problem statements, research objectives, research questions and hypotheses. Topics related to procedures such as literature search, constructing research methodology, sampling, conducting pilot study, and data processing are also discussed. Students should be able to work in groups to construct a research proposal relevant to their respective field of study.

- ✓ Introduction to educational research
- ✓ Literature review
- ✓ Quantitative Research Design - Survey research
- ✓ Quantitative Research Design - Correlational research
- ✓ Quantitative Research Design - Casual Comparative Research
- ✓ Quantitative Research Design - Experimental research
- ✓ Sampling and Instrumentation
- ✓ Writing Proposal
- ✓ Quantitative Data Analysis- Descriptive statistic/inferential statistic
- ✓ Qualitative Research Design - Overview
- ✓ Qualitative Research Design - Narrative/Ethnography/Case study
- ✓ Qualitative Research Design - Grounded Theory/Phenomenology
- ✓ Qualitative Data Collection & Analysis
- ✓ Writing Research Report



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# Refining MOOC Instructional Design

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**FREE**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3CqyjdL>



This is an additional course for the Introduction to UTM-MOOC course

We hope you enjoy the course and that this course will help you to develop more interesting activities for your MOOC!

This is a projective course that has three main parts, namely content analysis and feedback, activity development, and activity evaluation.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621(WhatsApp only)".



## Course Synopsis

This course is a self-paced course. It is an additional course for Introduction to UTM-MOOC course. We hope you enjoy the course and that this course will help you to develop more interesting activities for your MOOC!

This course requires code activation for enrolment. Please do not hesitate to contact [utm-mooc@utm.my](mailto:utm-mooc@utm.my) to enrol in this course.



## Course Learning Outcome

The objective of this course is to assist UTM lecturers to be able to develop their own interactive and engaging MOOC on Open Learning platform.

- ✓ Module set 1
- ✓ Module set 2
- ✓ Module set 3



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# Instructional & Learning & Technology

**SCAN HERE TO  
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<https://bit.ly/3xmBzU6>

**COST:**

**FREE to Learn, RM300 to Certify**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**



This is an additional course for the Introduction to UTM-MOOC course

We hope you enjoy the course and that this course will help you to develop more interesting activities for your MOOC!

This is a projective course that has three main parts, namely content analysis and feedback, activity development, and activity evaluation.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course presents the principles and the concept of Educational Technology, Instructional and Learning Technology as well as the teaching and learning process. It also deals with the utilization of Instructional Media from the conventional to the most up-to-date digital media. The students will be able to discuss the basic concept of communication, Instructional design, model and approaches to bring out more effective instruction. The use of computer technology, internet, teleconferencing, photography, video, audio and graphics in education also being exposed apart from appreciating the role played by the resource and teacher activity centers as well as the other related agencies. The course features extensive use and the production of instructional materials through the group as well as individual project works.

There is no prerequisite knowledge needed in order to start the course as long as the learners are interested to learn interactive ways of learning using technologies. This course will help the learners to utilize modern digital media into effective instructions inside the classroom learning.



## Course Learning Outcome

- ✓ Apply the concept of Educational, Instructional and Learning Technology in the contact of effective teaching and learning process critically
- ✓ Analyze instructions with the application of instructional technology and media based on learning theories
- ✓ Create a technological base instruction using the instructional and communication technology
- ✓ Create design project deliverables in writing and oral presentation



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# Blended Learning

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3DpsoWC>

**COST:**

**FREE to Learn**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



To prepare yourself, you need to understand that Blended Learning isn't just a new pedagogy with fancy tech tools.

We'll explore why Blended Learning is an interesting HI paradigm and how it's being used by schools and colleges

You'll leave with a clear and exhaustive overview of the term 'Blended Learning' and its models. The key issues affecting students, teachers and HI institutions will be discussed in detail.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 016-2195295 (WhatsApp only)".



## Course Synopsis

In this course, we will explore the meaning of Blended learning and its different models. We will look at the key issues that impact students, teachers, and higher institution (HI).

A few of the key topics will include:

- The role of the student and how to support students in the transition from traditional to blended learning
- Implications for teachers in their day-to-day work and overall role
- Impact on the way HI are designed.
- Overall, we will take a hands-on approach and the course will culminate in participants' prototyping their own blended learning model.
- We will also look at the integration of social media into the Blended Learning.

The main objective of this course is to recognise in how blended learning able to help provide students a more personalized learning experience.

The main objective of this course is to recognise in how blended learning able to help provide students a more personalized learning experience.

- use a range of effective blended learning practices and pedagogies to improve your learners' experience and attainment
- understand how the many free and affordable technologies now available can enhance teaching and learning, and
- approach new technologies with confidence, designing a pedagogical approach to make the best use of these tools



## Course Learning Outcome

- ✓ Use a range of effective blended learning practices and pedagogies to improve your learners' experience and attainment
- ✓ Understand how the many free and affordable technologies now available can enhance teaching and learning
- ✓ Approach new technologies with confidence, designing a pedagogical approach to make the best use of these tools



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# Application of Statistics for Educational Research

**SCAN HERE TO  
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<https://bit.ly/3S2rFPp>

**COST:**

**FREE to Learn,**  
RM1,527.45 to certify

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**



Learning and understanding statistics is essential for your future career

Statistics is just a tool that you can use to make more informed decisions in your life.

In this course, you will learn the basic concepts of statistics, the application of descriptive and inferential statistics, and the interpretation of statistical results, as well as statistical analysis using IBM SPSS and PSPP.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

Statistical reasoning has become one of the people's fundamental skills because everyday decisions almost always rest on a statistical foundation. Statistical reasoning is not something foreign or separate from us, but rather something that we do all the time. This course is not intended to teach you something entirely new, but rather to increase your skills at doing what you already do, perhaps unknowingly and unskilfully. This basic course in statistics aims to equip students with the knowledge and skills to understand and use of statistics in educational research. The scope of the course will cover both the descriptive and inferential statistics



## Course Learning Outcome

- ✓ Categorize the role of statistics within the general field of scientific inquiry and know some of the vocabulary and notation that are necessary for the statistical method that follows.
- ✓ Develop the problems in research and determine the suitable statistical procedures that are appropriate to the research problem.
- ✓ Categorize data to a more interpretable form by using graphical representation and measure of central tendency and dispersion.
- ✓ Develop the concept of normal distribution and show how it can be used to draw inferences about observation.
- ✓ Develop the concept of probability and determine the probability that an event will occur.
- ✓ Discuss the procedure and concepts of hypothesis testing.
- ✓ Carry out t-test, ANOVA, and other parametric and non-parametric test for testing hypothesis.
- ✓ Produce statistical calculation using statistical tools.



## Pre-requisite

- ✓ You must have the ability to use a scientific calculator.
- ✓ You have to install SPSS Software in your computer.



## Course Delivery Format

- ✓ Students develop understanding by solving problem as learning activities, assignment and performing computer analysis using SPSS in ways that learning becomes meaningful to them.



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# Fiqh Ibadat

## Tahap 1

**TEMPOH  
KELAS:**

**Fleksibel**

**SIJIL:**

**Ada**

**IMBAS DI SINI UNTUK  
KETERANGAN LANJUT**



<https://bit.ly/3LfBFCw>



Kursus ini direka untuk seorang Muslim baru sebagai alternatif kepada kursus pengenalan sedia ada.

Anda akan menguasai cara bersuci, istinja, wudhu', tayammum, mandi junub, solat, puasa dan zakat.

Berminat untuk mengetahui lebih lanjut tentang kursus tersebut? Klik di sini untuk mengetahui lebih lanjut tentang kursus <https://bit.ly/3LfBFCw>.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp sahaja)".



## Sinopsis Kursus

Kursus ini dibangun sebagai modul alternatif bagi saudara baru khususnya di Johor. Kursus ini dibangun berdasarkan Modul Bimbingan Saudara Kita: Fiqh Ibadat Tahap 1.



## Hasil Pembelajaran

Mengetahui pengertian bersuci, istinja', wudhu' dan tayammum serta dapat melaksanakan dalam kehidupan seharian Mengetahui pengertian mandi junub, solat serta dapat melakukan ibadah solat dengan betul dan sempurna Mengetahui pengertian puasa dan zakat serta mempraktikkannya dalam kehidupan seharian

- ✓ Pengertian bersuci
- ✓ Pengertian istinja'
- ✓ Pengertian tayammum
- ✓ Pembahagian air



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# Akidah

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## Tahap 1

**TEMPOH  
KELAS:**

**Fleksibel**

**SIJIL:**

**Ada**

**IMBAS DI SINI UNTUK  
KETERANGAN LANJUT**



<https://bit.ly/3DrwHku>



Islam adalah kepercayaan, nilai, dan undang-undang yang lengkap yang membimbing umat Islam untuk menyembah Tuhan yang satu. Mempelajari akidah Islam adalah asas untuk menentukan kedudukan seseorang sebagai seorang Muslim

Akidah Islamiah merupakan ilmu yang mengajar manusia mengenal Allah S.W.T. sebagai Maha Pencipta sekalian alam dan boleh menjadi benteng bagi memelihara individu muslim daripada segala kekeliruan, kesesatan dan penyelewengan.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp sahaja)".



## Sinopsis Kursus

Mempelajari ilmu akidah amat penting kerana ia merupakan ilmu yang menjadi asas pengukur bagi menentukan status individu itu sebagai seorang muslim. Akidah Islamiah merupakan ilmu yang mengajar manusia mengenal Allah S.W.T. sebagai Maha Pencipta sekalian alam dan boleh menjadi benteng bagi memelihara individu muslim daripada segala kekeliruan, kesesatan dan penyelewengan. Kursus ini mengandungi penerangan tentang:

- Pengenalan kepada Akidah
- Iman
- Islam
- Ihsan



## Hasil Pembelajaran

- ✓ Menerangkan pengertian iman
- ✓ Menerangkan rukun iman
- ✓ Menjelaskan maksud Islam
- ✓ Menerangkan Rukun Islam
- ✓ Menerangkan definisi ihsan
- ✓ Menerangkan ciri-ciri ihsan
- ✓ Membezakan ihsan ketika beribadat dan ihsan ketika bermaksiat



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# Research Methodology for Engineering

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3d7V0ce>

**COST:**

**FREE to Learn,  
RM1,113.83 to certify**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**



Research Methodology for Engineering is a course for all those who are required to conduct any research work.

This course covers the basic principles of research methodology in engineering and how to prepare an effective dissertation on any specific topic.

You will learn how to plan and design a research project, obtain data using appropriate techniques and tools, analyze the data appropriately and present the findings in a professional manner.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course is a compulsory course for all students who registered for post graduate course. The course covers the general principles of Research Methodology that are applicable to any discipline. It discusses the fundamental process in conducting academic research. The theoretical and practical aspects of preparing a research proposal presented. Amongst topics that will be covered are introduction to research and its philosophy, problem formulation and research objective, literature review, research methodology and design, data collection procedures, data analysis, research proposal and thesis preparation and research management.



## Course Learning Outcome

- ✓ Identify comprehensive understanding of principal in demonstrating academic research
- ✓ Differentiate possible research resources and transform issue in broader perspective
- ✓ Communicating research in own words to create new meaning
- ✓ Choose and propose a good research proposal in systematic way
- ✓ Apply appropriate research techniques and tools from different approached with profound intellectual integrity and ethics



## Pre-requisite

- ✓ None



## Course Delivery Format

- ✓ Lecture
- ✓ Online Learning Activities
- ✓ Test



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# Dynamics of Leadership

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3RIrAAo>

**COST:**

**FREE to Learn, RM1050 to Certify**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**



Every successful organization needs to have dynamic leaders to succeed.

With our leadership course, you can learn how to set goals and build a team that reaches those goals together.

This course includes the study of elements, traits and benefits, leadership behaviour, influence, theories, communication, skills, and conflicts.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course is intended to encourage students discover and develop their personal leadership qualities. Students will be exposed to leadership theories so that they could develop an insight that leadership itself is a dynamic relationship based on mutual influence and common purpose between leaders and followers. Topics covered include Introduction to Leadership, Leadership Traits & Ethics, Leadership Behaviour and Motivation, Influencing: Power, Politics, Networking and Negotiation, Contingency Leadership Theories, Communication, Coaching, and Conflict Skills, The Leader-Follower Relationship, Team Leadership, Leading Self-Managed Teams, Transformational and Level 5 Leadership. Students will be evaluated based on their class leadership role, short talk and personal learning portfolios.



## Course Learning Outcome

- ✓ Gain an understanding of the importance of leadership role in every field of human endeavour
- ✓ Develop an understanding of how leaders nurture leadership qualities and skills.
- ✓ Identify leadership challenges and provide appropriate leadership responses thereto.
- ✓ Create a continuous personal development report (portfolio) to enhance leadership skills and effectiveness for future leadership roles.
- ✓ To earn a certificate in this course, students will have to complete 4 assessments.



## Pre-requisite

- ✓ None



## Credit Hours

- ✓ 3 Credit hours



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# Systemic Functional Linguistics

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3eOdY8p>

**COST:**

**FREE to Learn, RM350 to certify**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**



This course aims to introduce students to the theory of Systemic Functional Linguistics.

Students will first learn the concept of lexico-grammar before they are exposed to the three metafunctions of SFL.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-79771621 (WhatsApp only)".



## Course Synopsis

Welcome to Systemic Functional Linguistics or SFL. In this course you will learn how language, as a semiotic system, is used in meaning-making. The aim of this course is to introduce you to the three meta functions of SFL, which are ideational, interpersonal and textual. This course will enable you to conduct language analysis using SFL as the analytical framework.



## Course Learning Outcome

This course introduces students to the theory of Systemic Functional Linguistics (SFL). This is a pre-requisite for those who plan to take Multimodal Discourse (MLAC 2153). The topics covered in this course are lexicogrammar, meta functions, Transitivity analysis, Mood analysis and Theme analysis. Students will have hands-on experience in analysing text using SFL. By the end of the course, students should be able to:

- ✓ Define and describe the use of Systemic Functional Linguistics in the process of meaning-making
- ✓ Differentiate the three SFL meta functions and explain their roles in meaning-making
- ✓ Conduct different types of SFL analysis successfully.



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# Library Skills

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3RMTSdm>

**COST:**

**FREE to Learn**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



This course will teach you to navigate the library website, access databases and electronic books, create citations, and format references.

With this course, you will learn to register for e-journals, book chapters and other resources. After completion of the course, you will have a library account and can use the library card to borrow books.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course is about assisting students to use UTM Library services such as database searching techniques, managing user library accounts, document management system, inter-library loans, and using UTM institutional repository. The target audiences for this course are UTM researchers, academicians as well as students.



## Course Learning Outcome

- ✓ This course will cover searching skill techniques, managing library accounts, document management systems, inter-library loans, and using UTM institutional repository.



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# Process Integration

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3BCkc3Z>



The process integration course will provide you with the skills to apply pinch analysis in designing chemical process systems.

It is delivered by a highly experienced and sought-after expert.

You will learn how to achieve cost-effective, clean, and resource-efficient designs of new and existing chemical process systems.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621(WhatsApp only)".



## Course Synopsis

This course presents the principles and methodology to develop an understanding of Pinch Analysis technique and acquire the skills to apply the technique for optimal resource conservation for the ultimate aim of producing cost-effective, clean, and resource-efficient designs of new and existing chemical process systems



## Course Learning Outcome

- ✓ CLO1: Review state-of-the-art resource recovery process integration methods and its application.
- ✓ CLO2: Design resource recovery network to achieve the minimum utility target.
- ✓ CLO3: Evaluate the economics of the resource recovery network.  
Present information and express ideas clearly; and work effectively in group activities.
- ✓ CLO4: Evaluate and complete a process integration industrial case study individually or in a team.
- ✓ CLO5: Reproduce a resource integration calculation by using excel.



## Pre-requisite

- ✓ This course requires pre-requisite knowledge of mass and energy balance



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# Ocean Remote Sensing Towards Climate Resilience

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3RYPmb7>

**COST:** **FREE to Learn**

**CLASS  
DURATION:** **Flexible**



You will learn the fundamentals of these earth-observing technologies, discuss recent developments in the field, gain hands-on experience using satellite imagery and sensor data to understand environmental change, and directly experience working at sea with marine researchers.

Develop your understanding of remote sensing techniques and their applications across oceans, climate change and societal responses.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

To support development in the maritime climate preparedness, one needs technology capable of monitoring the oceans, marginal seas, and coastal areas thoroughly and systematically. In that respect, remote sensing from space is unmatched in terms of spatiotemporal coverage and accessibility. Remote sensing technology, along with in situ measurements, is essential for monitoring marine natural resources & for assessing climate and human impacts in coastal areas, (e.g., monitoring sea level and sea level rise, coral reefs, and marine utilization planning for various sectors of the economy such as tourism). It is also crucial for monitoring and studying climate variability and change, biodiversity and ecosystems, and changes in the atmospheric, marine, and coastal domains and their societal impact. These topics, among others, address several crucial Sustainable Development Goals (SDGs) and are intended to be covered by PORSEC.

This course aims to give students detailed knowledge and practical examples of remote sensing techniques, and the ability to develop networks with other students and senior scientists. Students will be assigned to a group, which will be facilitated by one of the senior scientists to assist in a team project. This mentorship program shall encourage students to interact between senior scientists and early-career scientists and students. These relationships help new scientists develop scientific ideas, research projects and papers.



## Course Learning Outcome

- ✓ Discuss the fundamentals of remote sensing, GIS, along with in situ measurements and its techniques for monitoring the oceans, marginal seas, and coastal areas.
- ✓ Communicate effectively both in written and oral by giving practical examples of remote sensing and GIS techniques used for monitoring the ocean-atmosphere system especially in research and operations.
- ✓ Develop networks among students and senior scientists from all over the globe for conducting ocean-atmosphere project using remote sensing techniques.  
Present information and express ideas clearly; and work effectively in group activities.



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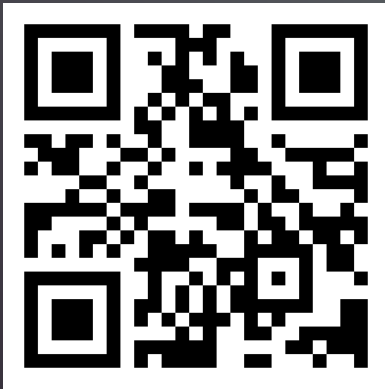
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# Seminar on Global Development, Economic and Social Issues

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3LdVPgs>

**COST:**

**FREE to Learn,  
RM1,050 to certify**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



This course explores the issues related to globalization and development, and the economic and social crisis that has become a global concern.

Seminar on Global Development, Economic & Social Issues aimed to develop skills in understanding and analysing global issues and recommending relevant solutions. Issues will be discussed in detail based on the activities.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



### Course Synopsis

Seminar on Global Development, Economic & Social Issues is a course that explore on the issues related to globalization and development, economic and social crisis that has become a global concern. It aims in developing skills in understanding and analysing global issues and recommending relevant solutions. Issues will be discussed in detail based on the activities.



### Course Learning Outcome

- ✓ Discuss critically knowledge of globalization as it relates to the world issues coherently to peers and scholarly community
- ✓ Presents facts & ideas on how world perspective is shaped by social, economic & political factors
- ✓ Show substantial responsibility in strong & corporative working team when addressing key themes of sustainable development



### Pre-requisite

- ✓ This course does not require any pre-requisite knowledge



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# ICT for community

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3REcNGR>

**COST:**

**FREE to Learn, RM300 to Certify**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**



This course provides exposure to current technologies and their implementation in the development of a community.

Develop knowledge about ICT integration in relation to activities or issues of community concern.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This subject provides exposure and experience to students on ICT knowledge (Information, Communications and Technology) that focus on computer network management and their implementation in the development of a community in general. The development of knowledge about ICT integration in relation to activities or issues of community concern is also discussed. Students are given the opportunity to build teamwork skills, demonstrate leadership skills and support lifelong learning through a set of learning assignments such as computer network installation. Students will transfer ICT knowledge learned to the community through the implementation of a service learning project by computer network cabling activity to gain learning experience. Through this assignment and service learning project, student-dominated skills will be evaluated that also include the application of ethics and professionalism while conducting projects with other colleagues and communities. Students are also encouraged to communicate with the community or organizational body in obtaining various forms of assistance or contribution to make this service learning program a success.



## Course Learning Outcome

- ✓ Organize ICT (Information, Communications and Technology) information through training and exploration of its use in line with technological development.
- ✓ Encourage engagement and respect the views of members of the group in solving authentic issues regarding ICT integration in the development of community activities based on co-curriculum skills through the project conducted.
- ✓ Analyse information ethically, respect group members and able to take actions that involve others through service learning.



## Pre-requisite

This course does not require any pre-requisite knowledge



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# Modul Keluarga Sejahtera Negeri Johor

**TEMPOH  
KELAS:**

**Fleksibel**

**IMBAS DI SINI UNTUK  
KETERANGAN LANJUT**



<https://bit.ly/3QKwGLa>

**SIJIL:**

**Ada**



MOOC-MKSNJ merupakan satu platform pembelajaran secara talian khusus kepada rakyat negeri Johor untuk mempelajari Modul Keluarga Sejahtera Negeri Johor (MKSNJ). Modul Keluarga Sejahtera Negeri Johor (MKSNJ) merupakan modul kekeluargaan yang universal dan menyeluruh. Modul ini dibangunkan dengan kerjasama antara Yayasan Pembangunan Darul Ta'zim YPKDT) dan Universiti Teknologi Malaysia (UTM).

Secara umum, modul ini merupakan kesinambungan kepada Modul Keluarga Sakinah. Modul ini diharapkan dapat memberi panduan dan bimbingan kepada masyarakat awam negeri Johor khususnya dalam membentuk dan memperkasakan institusi kekeluargaan.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp sahaja)".



### Course Synopsis

MOOC-MKSNJ merupakan satu platform pembelajaran secara atas talian khusus kepada rakyat negeri Johor untuk mempelajari Modul Keluarga Sejahtera Negeri Johor (MKSNJ).

Modul Keluarga Sejahtera Negeri Johor (MKSNJ) merupakan modul kekeluargaan yang universal dan menyeluruh. Modul ini dibangunkan dengan kerjasama antara Yayasan Pembangunan Darul Ta'zim (YPKDT) dan Universiti Teknologi Malaysia (UTM). Modul kekeluargaan yang dibangunkan ini mengambil pendekatan yang bersesuaian dengan kepelbagaian masyarakat dan bangsa Johor yang terdiri daripada pelbagai latar belakang kaum dan agama.

Secara umum, modul ini merupakan kesinambungan kepada Modul Keluarga Sakinah yang dikhususkan kepada Masyarakat Muslim negeri Johor yang diperkenalkan pada tahun 1998. Modul yang lebih inklusif ini diharapkan dapat memberi panduan dan bimbingan kepada masyarakat awam negeri Johor khususnya dalam membentuk dan memperkasakan institusi kekeluargaan.



### Course Learning Outcome

- ✓ Merancang pembinaan kehidupan berkeluarga yang harmoni dan sejahtera
- ✓ Mengenalpasti tatacara kehidupan berkeluarga dari aspek hak, tanggungjawab dan perundangan
- ✓ Mengenalpasti cabaran alam rumahtangga dan penyelesaiannya



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# Malaysian Carbon Reduction and Environmental Sustainability Tool (MyCREST)

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3S1A7hS>

**COST:** **RM500**

**CLASS  
DURATION:** **Flexible**

**CERTIFICATION:** **Yes**



This course is designed to understand the overall assessment for sustainability and carbon management based on an overall life cycle assessment. The aim is to attain knowledge of green building techniques, materials, and practices.

Students can identify the embodied energy evaluation, and overall sustainability of various materials and methods based on basic methods of green building design, technique, documentation, and certification.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

Sustainability accounting is an emerging field of accounting that provides a framework for developing measures of corporate environmental and social performance, assessing their reliability, reporting to external stakeholders, and assisting managers in strategic and operational decisions that affect environmental costs and risks. Hence, this course is designed to understand the overall assessment for sustainability and carbon management based on overall life cycle assessment. The aim is to attain the knowledge of green building techniques, materials and practices. Besides, the students able to identify the embodied energy evaluation, and overall sustainability of various materials and methods based on basic methods of green building design, technique, documentation and certification. At the end of the course, students will be given one real project in experiencing the national green rating systems to register, evaluate and document an actual green building project.



## Course Learning Outcome

- ✓ Describe the concept of sustainability and carbon emission for a green building based on the life cycle impact
- ✓ Investigate the integration of carbon assessment criteria and carbon reduction strategies for the built environment
- ✓ Analyze the integration criteria of green building into life cycle impact and based on amount of carbon emission based on the overall assessment



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# Research Methodology for Science

**SCAN HERE TO  
FIND OUT MORE**



**COST:** **FREE to Learn, RM1050 to certify**

**CLASS  
DURATION:** **Flexible**

**CERTIFICATION:** **Yes**

<https://bit.ly/3K48cMv>

Unleash the potential of your scientific research with our Research Methodology course.



Whether you are a biologist, chemist, mathematician or physicist, this course is designed to provide you with the general principles of research methodology that are applicable to all branches of science.

From crafting research proposals to preparing research articles for publication in high-impact journals, our course covers every aspect of scientific research that you need to know. You'll develop the skills needed to write for workshops, conferences, thesis papers, and grant proposals while effectively presenting your research findings.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course intends to cover the general principles of research methodology that are applicable to diverse branches of basic and applied sciences such as biology, chemistry, mathematics and physics. It discusses the fundamental aspects of conducting good scientific research with novelty and ethics. The theoretical and practical aspects of preparing research proposals and writing research articles will be presented. The course will start with an introduction to research methods, approaches, procedures and philosophy, setting title, problem formulation and research objectives, literature review, research methodology and design, data collection and analysis, writing research papers for workshops, conferences and thesis as well as research management. Making an effective presentation and submission of research articles in high impact journal and research proposal for acquiring grants will be discussed.



## Course Learning Outcome

- ✓ Construct problems, objectives and scopes of the research clearly.
- ✓ Appraise pertinent literature ethically in the area of research from various academic sources.
- ✓ Formulate appropriate methodologies to solve the research problem.
- ✓ Defend the proposal through written and oral presentation effectively.
- ✓ Combine relevant information to set up definite research goals for practical applications.



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# Research Methodology for Social Science

**SCAN HERE TO  
FIND OUT MORE**



**COST:** **FREE to Learn, RM1050 to certify**

**CLASS  
DURATION:** **Flexible**

**CERTIFICATION:** **Yes**

<https://bit.ly/3Qh1epJ>



This course will delve into the area of academic research in social sciences, with a particular focus on graduate-level study and its methodological aspects.

By taking this course, you can expect to gain a comprehensive understanding of both the theoretical and procedural components of research methods, specifically for qualitative and quantitative approaches. We will equip you with the necessary tools and knowledge to conduct effective research in the social science field.

Prepare for a wonderful and rewarding experience as you delve into the depths of social science research techniques. Prepare to broaden your horizons and learn useful skills that will help you in your academic and professional endeavours.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course introduces the fundamental concepts of research methodology. Amongst the important topics that will be covered are determining the research topic, research gap, research questions, literature review technique, building research frameworks, research design, measurement and scaling, sampling, data collections, data analysis and writing a proper research proposal.



## Course Learning Outcome

- ✓ Identify research gap, problem statement, research questions and research objectives.
- ✓ Write a literature review related to the topic with no plagiarism issue
- ✓ Do literature search using UTM library databases.
- ✓ Propose an appropriate research design.
- ✓ Present research idea effectively.



## Certificate of Completion Fee

- ✓ You can apply for certificate of completion with a fee: RM 1050 after you have completed the course.



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# Data Analytics for Educators

**SCAN HERE TO  
FIND OUT MORE**



**COST:**

**FREE TO LEARN**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

<https://bit.ly/4oWWZA8>



This course will delve into the area of academic research in social sciences, with a particular focus on graduate-level study and its methodological aspects.

By taking this course, you can expect to gain a comprehensive understanding of both the theoretical and procedural components of research methods, specifically for qualitative and quantitative approaches. We will equip you with the necessary tools and knowledge to conduct effective research in the social science field.

Prepare for a wonderful and rewarding experience as you delve into the depths of social science research techniques. Prepare to broaden your horizons and learn useful skills that will help you in your academic and professional endeavours.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course introduces the fundamental concepts of research methodology. Amongst the important topics that will be covered are determining the research topic, research gap, research questions, literature review technique, building research frameworks, research design, measurement and scaling, sampling, data collections, data analysis and writing a proper research proposal.



## Course Learning Outcome

- ✓ Identify research gap, problem statement, research questions and research objectives.
- ✓ Write a literature review related to the topic with no plagiarism issue
- ✓ Do literature search using UTM library databases.
- ✓ Propose an appropriate research design.
- ✓ Present research idea effectively.



## Certificate of Completion Fee

- ✓ You can apply for certificate of completion with a fee: RM 1050 after you have completed the course.



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# What is Micro-Credentials

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## Micro-Credential (MC)

Micro-Credential (MC) courses are certification of learning for a smaller set of courses designed to provide learners with knowledge, skills, values and competencies in a narrow area of study or practice.



**MC** *Micro*  
**Credentials**



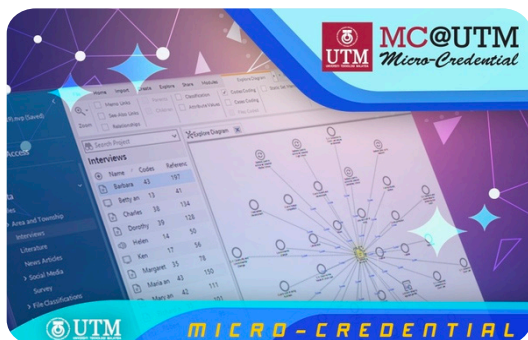
## UTM Micro-Credentials Featured Courses



MUDAHNYA AUTOCAD 2D  
BERSAMA DR. A



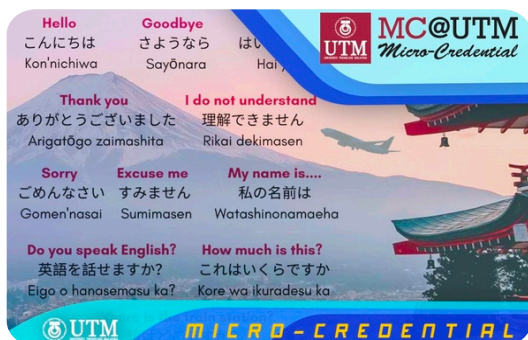
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MODELLING



SMART LITERATURE REVIEW USING  
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PENYUNTINGAN VIDEO MUDAH  
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BASIC JAPANESE COMMUNICATION  
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# Muet Speaking

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3oO938X>



Impress your MUET speaking skills with our expert instructors! The course is a flexible time to learn. Participants will get a "digital certificate". Amazing right?

In our MUET speaking test course, you will be guided on the exposure format of the speaking paper, highlighting the skills tested such as presenting ideas in an organized manner and many more.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course introduces the format of MUET Speaking paper and highlights the skills tested in it such as presenting ideas in an organised manner, stating main ideas and elaborating them with relevant supporting details, and using appropriate language expressions according to the speaking contexts. The course also addresses the tips and strategies to become an effective speaker in the test.



## Course Learning Outcome

- ✓ Prepare and present effectively for individual presentation
- ✓ Participate actively and effectively in group interaction



## Requirements

- ✓ You will need a viewing device such as a tablet, a computer, or a handphone with Internet connection and a speaker. Having an earphone or a headphone is optional. Your device should also be able to view pdf files.



## Course Learners

- ✓ People who wish to apply for undergraduate and post-graduate programmes. Other than that, it is for English qualification and employment promotion.



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# Muet Listening

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3QrDHRx>



Are you afraid of listening tests? Relax! Don't be stressed. Be smart! We are here to guide you. This course is flexible, and participants will get a "digital certificate".

We help you by giving exposure and training on how to answer and score in MUET listening skills, tips and strategies on answering different types of questions for all three parts, and the do's and don'ts of answering the listening paper will be shared.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course introduces the format of MUET Speaking paper and highlights the skills tested in it such as presenting ideas in an organised manner, stating main ideas and elaborating them with relevant supporting details, and using appropriate language expressions according to the speaking contexts. The course also addresses the tips and strategies to become an effective speaker in the test.



## Course Learning Outcome

- ✓ Learn the components of the MUET Listening test
- ✓ Acquire tips on answering the MUET Listening paper



## Pre-requisite

- ✓ For this course, no prerequisite knowledge is required.



## Course Delivery Format

- ✓ This course is delivered through instructional videos. Accompanying the videos are course notes. At the end of the course, there is a set



## Requirements

- ✓ You will need a viewing device such as a tablet, a computer, or a handphone with Internet connection and a speaker. Having an earphone or a headphone is optional. Your device should also be able to view .pdf files.



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# Muet Reading

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3vP0MFF>



Learn how to improve the MUET reading skills with our expert instructor! The course is flexible learning time. You can learn everywhere and at any time. Participants will get a "digital certificate".

You will master the MUET reading paper format and highlights the skills tested in it such as skimming and scanning skills, identifying main ideas, topic sentences, and many more.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course introduces the format of MUET Reading paper and highlights the skills tested in it such as skimming and scanning skills, identifying main ideas, topic sentences and supporting details, identifying the writer's purpose, stance, and tone, and deriving meaning of words or phrases from context. The course also addresses the yes-no-not stated questions which many candidates found confusing as well as tips and strategies in answering the test.



## Course Learning Outcome

- ✓ Skim and scan;
- ✓ Identify main ideas, topic sentence, and supporting details;
- ✓ Identify purpose, author's stance and tone;
- ✓ Derive meaning from contextual clues
- ✓ Interpret linear and non-linear text



## Course Delivery Format

- ✓ This course is delivered through instructional videos. Accompanying the videos are course notes. At the end of the course, there is a set of quiz to be completed. Upon completion, you will be awarded a completion certificate.



## Requirements

- ✓ You will need a viewing device such as a tablet, a computer, or a handphone with Internet connection and a speaker. Having an earphone or a headphone is optional. Your device should also be able to view .pdf files.



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# Muet Writing

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3JMvyF1>



Learn more about how to score in MUET writing papers from professional and expert instructors! Participants will get a “digital certificate” The course is flexible learning time, which is so convenient!

We will give you exposure and training on how to answer and score in MUET writing skills, you will be given tips and strategies on answering two types of questions in MUET writing papers, and the do’s and don’ts of answering the writing paper will be shared.

“If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)”.



## Course Synopsis

This course prepares students who are sitting for Malaysian University English Test (MUET) by giving them exposure and training on how to answer and score in MUET writing skill. Students will be given tips and strategies on answering two types of questions in MUET writing paper. The do's and don'ts of answering the writing paper will be shared to help students score better in MUET.



## Course Learning Outcome

- ✓ Master the skills needed for MUET Writing
- ✓ Identify components in report writing
- ✓ Differentiate between analysis and synthesis
- ✓ Analyse and synthesise data
- ✓ Master the skills needed for MUET Writing identify components in extended writing
- ✓ Identify structure of an extended writing



## Course Delivery Format

- ✓ This course is delivered through instructional videos. Accompanying the videos are course notes. At the end of the course, there is a set of quiz to be completed. Upon completion, you will be awarded a completion certificate.



## Requirements

- ✓ You will need a viewing device such as a tablet, a computer, or a handphone with Internet connection and a speaker. This device should be able to play videos in avi. format. Having an earphone or a headphone is optional. Your device should also be able to view .pdf files.



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# Energy and Environment for Sustainable Industry

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3QH9rT4>

**COST:**

**FREE to Learn, RM450 to certify**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**UTM Cert**



You can learn all about these things at Energy and Environment for Sustainable Industry!

This course is designed to train industry personnel/engineers/engineering students to enable them to play an appropriate role to make their industry or organization sustainable against energy environmental challenges.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In the context of global-level environmental and fossil fuel depletion challenges, industries require engineers/personnel who acquainted with appropriate knowledge to accomplish energy-saving, comply with legislative and policy obligations set by the government, tackle excessive fuel and operational costs and meet the organization's aspirations for getting green certifications. Globally there is shortage of qualified personnel/engineers who have sound knowledge in dealing with energy and environmental factors to make their industry or organization sustainable. This micro-credential course is intended to train industry personnel/engineers/engineering students to enable them to play an appropriate role to make their industry or organization sustainable against energy environmental challenges.



## Course Learning Outcome

- ✓ Identify the linkage between energy, environment and climate challenges and procedures and best practices in dealing with these challenges.
- ✓ Carry out the tasks to save energy and costs by employing efficient technologies and best practices.
- ✓ Carry out accomplishing their organization's legislative and policy obligation regarding energy and environment



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# Marine, Oil and Gas (MOG) Project Management: Project Design & Scope Management

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3K7yxbs>

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Learn the Marine, Oil & Gas Project Management principles and methodologies to plan, manage, execute, and deliver marine, oil & gas projects effectively and systematically.

In this module 1 will give you a complete understanding of taking cost-effective, pragmatic, and realistic decisions.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this Marine, Oil & Gas (MOG) Project Management Course with nine (9) modules, the learner will learn the project management principles and methodologies on how to plan, manage, execute, and deliver marine, oil & gas projects in an effective and systematic way. This MOG PM is structured and benchmarked against the global international standard focusing on providing a practical framework for undergraduate and continuing and professional development pertaining to the marine, oil & gas as well as infrastructure, and building industries.

This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.



## Course Learning Outcome

- ✓ Utilize the work process tools and real-case lessons learned of project design and scope management.



## Pre-requisite

- ✓ No pre-requisite skills. All engineering students and management can enroll in this program



## Credit Transfer

- ✓ SKMO 4823 - Marine Management, Safety and Environment



## Course Information

- ✓ This course will be conducted online and will have a series of live recording schedule. You may refer the lecture notes and recorded video after the live class ended in the Learning Activity Tab. As for the assignment, you are required to answer and upload it inside the Assignment, Presentation and Quiz page in the Learning Activity Tab.



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# Marine, Oil and Gas (MOG) Project Management: Project Planning & Scheduling

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3BHzNQ5>

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.

In this module 2, you will learn how to control planning and scheduling management learning material provides the learner an overview of the project plan and schedule.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this Marine, Oil & Gas (MOG) Project Management Course with nine (9) modules, the learner will learn the project management principles and methodologies on how to plan, manage, execute, and deliver marine, oil & gas projects in an effective and systematic way. This MOG PM is structured and benchmarked against the global international standard focusing on providing a practical framework for undergraduate and continuing and professional development pertaining to the marine, oil & gas as well as infrastructure, and building industries.

This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.



## Course Learning Outcome

- ✓ Utilize the work process tools and real-case lessons learned of project planning and scheduling activities



## Pre-requisite

- ✓ No pre-requisite skills. All engineering students and management can enroll in this program



## Credit Transfer

- ✓ SKMO 4823 - Marine Management, Safety and Environment



## Course Information

- ✓ This course will be conducted online and will have a series of live recording schedule. You may refer the lecture notes and recorded video after the live class ended in the Learning Activity Tab. As for the assignment, you are required to answer and upload it inside the Assignment, Presentation and Quiz page in the Learning Activity Tab.



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# Marine, Oil and Gas (MOG) Project Management: Project Costing & Estimating Management

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3qxACnS>

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.

In this module 3, you will learn how to cost and estimating management learning material provides the learner an overview of costing and estimate methodologies.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this Marine, Oil & Gas (MOG) Project Management Course with nine (9) modules, the learner will learn the project management principles and methodologies on how to plan, manage, execute, and deliver marine, oil & gas projects in an effective and systematic way. This MOG PM is structured and benchmarked against the global international standard focusing on providing a practical framework for undergraduate and continuing and professional development pertaining to the marine, oil & gas as well as infrastructure, and building industries.

This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.



## Course Learning Outcome

- ✓ Utilize the work process tools and real-case lessons learned of project costing and estimating activities



## Pre-requisite

- ✓ No pre-requisite skills. All engineering students and management can enroll in this program



## Credit Transfer

- ✓ SKMO 4823 - Marine Management, Safety and Environment



## Course Information

- ✓ This course will be conducted online and will have a series of live recording schedule. You may refer the lecture notes and recorded video after the live class ended in the Learning Activity Tab. As for the assignment, you are required to answer and upload it inside the Assignment, Presentation and Quiz page in the Learning Activity Tab.



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# Marine, Oil and Gas (MOG) Project Management: Project Quality Management

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3L3IPeh>

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.

In this module 4, you will learn the quality management learning material provides the learner an overview of the project quality management plan, assurance, and control, and a framework of the quality program across a project.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this Marine, Oil & Gas (MOG) Project Management Course with nine (9) modules, the learner will learn the project management principles and methodologies on how to plan, manage, execute, and deliver marine, oil & gas projects in an effective and systematic way. This MOG PM is structured and benchmarked against the global international standard focusing on providing a practical framework for undergraduate and continuing and professional development pertaining to the marine, oil & gas as well as infrastructure, and building industries.

This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.



## Course Learning Outcome

- ✓ Utilize the work process tools and real-case lessons learned of project quality management activities.



## Pre-requisite

- ✓ No pre-requisite skills. All engineering students and management can enroll in this program



## Credit Transfer

- ✓ SKMO 4823 - Marine Management, Safety and Environment



## Course Information

- ✓ This course will be conducted online and will have a series of live recording schedule. You may refer the lecture notes and recorded video after the live class ended in the Learning Activity Tab. As for the assignment, you are required to answer and upload it inside the Assignment, Presentation and Quiz page in the Learning Activity Tab.



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# Marine, Oil and Gas (MOG) Project Management: Project Integration Management

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3QQ06YF>

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.

In this module 5, you will learn the integration management learning material that provides the learner an over view of the project integration management scope of work.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this Marine, Oil & Gas (MOG) Project Management Course with nine (9) modules, the learner will learn the project management principles and methodologies on how to plan, manage, execute, and deliver marine, oil & gas projects in an effective and systematic way. This MOG PM is structured and benchmarked against the global international standard focusing on providing a practical framework for undergraduate and continuing and professional development pertaining to the marine, oil & gas as well as infrastructure, and building industries.

This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.



## Course Learning Outcome

- ✓ Utilize the work process tools and real-case lessons learned of project integration management activities.



## Pre-requisite

- ✓ No pre-requisite skills. All engineering students and management can enroll in this program



## Credit Transfer

- ✓ SKMO 4823 - Marine Management, Safety and Environment



## Course Information

- ✓ This course will be conducted online and will have a series of live recording schedule. You may refer the lecture notes and recorded video after the live class ended in the Learning Activity Tab. As for the assignment, you are required to answer and upload it inside the Assignment, Presentation and Quiz page in the Learning Activity Tab.



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# Marine, Oil and Gas (MOG) Project Management: Project Organisation & Communication Management

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3TVQ9vr>

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.

In this module 6, you will learn the organisation and communication learning material provides the learner with guidelines in assembling, empowering and sustaining an effective project team organisation and communication.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this Marine, Oil & Gas (MOG) Project Management Course with nine (9) modules, the learner will learn the project management principles and methodologies on how to plan, manage, execute, and deliver marine, oil & gas projects in an effective and systematic way. This MOG PM is structured and benchmarked against the global international standard focusing on providing a practical framework for undergraduate and continuing and professional development pertaining to the marine, oil & gas as well as infrastructure, and building industries.

This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.



## Course Learning Outcome

- ✓ Utilize the work process tools and real-case lessons learned of project organisation and communication management activities.



## Pre-requisite

- ✓ No pre-requisite skills. All engineering students and management can enroll in this program



## Credit Transfer

- ✓ SKMO 4823 - Marine Management, Safety and Environment



## Course Information

- ✓ This course will be conducted online and will have a series of live recording schedule. You may refer the lecture notes and recorded video after the live class ended in the Learning Activity Tab. As for the assignment, you are required to answer and upload it inside the Assignment, Presentation and Quiz page in the Learning Activity Tab.



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# Marine, Oil and Gas (MOG) Project Management: Project Risk Management

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3B5Ly13>

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Unlock your potential in managing Marine, Oil & Gas projects with our flexible, certified Project Risk Management course today.

In this module 6, you will learn the organisation and communication learning material provides the learner with guidelines in assembling, empowering and sustaining an effective project team organisation and communication.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this Marine, Oil & Gas (MOG) Project Management Course with nine (9) modules, the learner will learn the project management principles and methodologies on how to plan, manage, execute, and deliver marine, oil & gas projects in an effective and systematic way. This MOG PM is structured and benchmarked against the global international standard focusing on providing a practical framework for undergraduate and continuing and professional development pertaining to the marine, oil & gas as well as infrastructure, and building industries.

This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.



## Course Learning Outcome

- ✓ Utilize the work process tools and real-case lessons learned of project risk management activities.



## Pre-requisite

- ✓ No pre-requisite skills. All engineering students and management can enroll in this program



## Credit Transfer

- ✓ SKMO 4823 - Marine Management, Safety and Environment



## Course Information

- ✓ This course will be conducted online and will have a series of live recording schedule. You may refer the lecture notes and recorded video after the live class ended in the Learning Activity Tab. As for the assignment, you are required to answer and upload it inside the Assignment, Presentation and Quiz page in the Learning Activity Tab.



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**MC** *Micro*  
Credentials

# Marine, Oil and Gas (MOG) Project Management: Project Contract & Procurement Management

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3qx6itO>

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.

In this module 8, you will learn the contract and procurement learning material provides the learner an overview of contract and procurement in project management scope of work.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this Marine, Oil & Gas (MOG) Project Management Course with nine (9) modules, the learner will learn the project management principles and methodologies on how to plan, manage, execute, and deliver marine, oil & gas projects in an effective and systematic way. This MOG PM is structured and benchmarked against the global international standard focusing on providing a practical framework for undergraduate and continuing and professional development pertaining to the marine, oil & gas as well as infrastructure, and building industries.

This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.



## Course Learning Outcome

- ✓ Utilize the work process tools and real-case lessons learned of project contract and procurement management activities.



## Pre-requisite

- ✓ No pre-requisite skills. All engineering students and management can enroll in this program



## Credit Transfer

- ✓ SKMO 4823 - Marine Management, Safety and Environment



## Course Information

- ✓ This course will be conducted online and will have a series of live recording schedule. You may refer the lecture notes and recorded video after the live class ended in the Learning Activity Tab. As for the assignment, you are required to answer and upload it inside the Assignment, Presentation and Quiz page in the Learning Activity Tab.



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# Marine, Oil and Gas (MOG) Project Management : Project Health Safety Environment and Security Management

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3RzRI6b>

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.

In this module 9, you will learn the Project HSE and Security Management learning material provides the learner with an overview of project Health, Safety and Environment and many more.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this Marine, Oil & Gas (MOG) Project Management Course with nine (9) modules, the learner will learn the project management principles and methodologies on how to plan, manage, execute, and deliver marine, oil & gas projects in an effective and systematic way. This MOG PM is structured and benchmarked against the global international standard focusing on providing a practical framework for undergraduate and continuing and professional development pertaining to the marine, oil & gas as well as infrastructure, and building industries.

This course is a customized program covering the project life-cycle from project initiation to completion and will provide a good platform to develop Project Management Knowledge Areas with best practice guidance.



## Course Learning Outcome

- ✓ Utilize the work process tools and real-case lesson learned of Project HSES Management activities



## Pre-requisite

- ✓ No pre-requisite skills. All engineering students and management can enroll in this program



## Credit Transfer

- ✓ SKMO 4823 - Marine Management, Safety and Environment



## Course Information

- ✓ This course will be conducted online and will have a series of live recording schedule. You may refer the lecture notes and recorded video after the live class ended in the Learning Activity Tab. As for the assignment, you are required to answer and upload it inside the Assignment, Presentation and Quiz page in the Learning Activity Tab.



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**MC** *Micro*  
Credentials

# Mudahnya AutoCAD Bersama Dr. A Siri 1

IMBAS DI SINI UNTUK  
KETERANGAN LANJUT



<https://bit.ly/3Qk5Fhq>

HARGA:

**RM90**

DURASI  
KURSUS:

**Fleksibel**

SIJIL:

**Ada**



Ia merupakan program pengajaran sepanjang hayat, diketuai oleh Prof. Madya Dr. Amirmudin Udin, pensyarah sepenuh masa di Sekolah Pendidikan Universiti Teknologi Malaysia (UTM).

Terdapat beberapa video langkah demi langkah yang telah disediakan secara komprehensif untuk membantu para peserta memahami kaedah melukis secara lebih cepat, mudah dan santai.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp sahaja)".



## Sinopsis Kursus

Kursus hand-ons Mudahnya AutoCAD 2D bersama Dr. A Siri 1 ini merupakan siri pembelajaran sepanjang hayat kepada semua golongan yang ingin menambah kemahiran sendiri termasuklah pelajar, guru, juruteknik, jurutera, pengamal kejuruteraan dan orang awam. Kursus ini akan dikendalikan sepenuhnya oleh Prof. Madya Dr. Amirmudin Udin dari Sekolah Pendidikan, Universiti Teknologi Malaysia yang merupakan seorang konsultan terlatih dalam bidang lukisan kejuruteraan berbantu komputer ini.

Beberapa video langkah demi langkah telah disediakan secara komprehensif untuk membantu para peserta memahami kaedah melukis secara lebih cepat, mudah dan santai. Dr. A juga bermurah hati untuk memberikan salinan naskah buku penulisan beliau (bernilai RM50) yang ditukar kepada format e-book bagi memberikan panduan yang lebih pelbagai.



## Hasil Pembelajaran

- ✓ Demonstrasi kemahiran memformat AUTOCAD 2D & 3D (command melukis, mengedit, memapar dan memplot)
- ✓ Membina bentuk-bentuk geometri mudah dan pertengahan menggunakan arahan-arahan AUTOCAD 2D & 3D



## OpenCreds

- ✓ Kursus ini telah disemak oleh OpenLearning bagi memastikan kandungan kursus ialah kandungan Akademik yang berkualiti. Kursus Micro-Credential ini ialah kursus OpenCreds di mana ia sejenis kelayakan stand-alone yang mempunyai kualifikasi formal dan kredibiliti yang diperakui. Kursus OpenCred adalah kursus atas talian yang menyediakan ruang bagi pelajar untuk persiapan kerja pada masa akan datang.



## Jam Kredit

- ✓ Peserta perlu menyelesaikan ketiga-tiga siri kursus Mudahnya AutoCAD 2D bersama Dr. A bagi mendapatkan 2 jam kredit untuk kursus Undergraduate (UG) di Sekolah Pendidikan, UTM iaitu kursus "Computer Assisted Engineering Drawing"



## Pra-Syarat

- ✓ Tiada pengetahuan prasyarat



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**MC** *Micro*  
Credentials

# Mudahnya AutoCAD Bersama Dr. A Siri 2

IMBAS DI SINI UNTUK  
KETERANGAN LANJUT



<https://bit.ly/3KNJeAd>

**HARGA:**

RM90  
Sambungan Siri 1: RM60

**DURASI  
KURSUS:**

**Fleksibel**

**SIJIL:**

**Ada**



Dalam kursus ini, anda akan belajar cara melukis bentuk kompleks menggunakan arahan lukisan 2D, mengedit, memplot dan menerbitkannya.

Anda juga akan belajar mencipta geometri kompleks daripada yang mudah dengan memahami pembinaan objek dan lapisan.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp only)".



## Course Synopsis

Kursus berbentuk hands-on yang komprehensif dan interaktif ini merupakan siri sambungan dari yang pertama iaitu Mudahnya AutoCAD 2D bersama Dr. A Siri 2. Selain video langkah demi langkah yang sangat mudah diikuti dan menarik, sebuah e-book bernilai RM50, yang ditulis oleh penceramah juga diberikan secara eksklusif kepada anda!

Jom, kita bersama dengan Prof. Madya Dr Amirmudin Udin, meneroka ilmu lukisan AUTOCAD 2D secara santai. Mencari ilmu itu hingga ke akhir hayat. Semoga ianya bermanfaat.

**\*\*Untuk makluman, kursus Mudahnya AutoCAD 2D bersama Dr. A Siri 2 mempunyai dua (2) kelas.**

Jika anda telah mendaftar di dalam kursus Mudahnya AutoCAD bersama Dr. A Siri 1, sila pilih kelas "Kelas 2021 - Pelajar dari Siri 1"



## Course Learning Outcome

- ✓ Membina objek geometri yang kompleks menggunakan command melukis, mengedit, memapar dan memplot
- ✓ Membina bentuk-bentuk geometri kompleks menggunakan arahan-arahan AUTOCAD 2D



## OpenCreds

- ✓ Kursus ini telah disemak oleh OpenLearning bagi memastikan kandungan kursus ialah kandungan Akademik yang berkualiti. Kursus Micro-Credential ini ialah kursus OpenCreds di mana ia sejenis kelayakan stand-alone yang mempunyai kualifikasi formal dan kredibiliti yang diperakui. Kursus OpenCred adalah kursus atas talian yang menyediakan ruang bagi pelajar untuk persiapan kerja pada masa akan datang.



## Course Duration

- ✓ Peserta perlu menyelesaikan ketiga-tiga siri kursus Mudahnya AutoCAD 2D bersama Dr. A bagi mendapatkan 2 jam kredit untuk kursus Undergraduate (UG) di Sekolah Pendidikan, UTM iaitu kursus "Computer

Assisted Engineering Drawing"



## Pre-requisite

- ✓ Tiada pengetahuan prasyarat



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**MC** *Micro*  
Credentials

# Mudahnya AutoCAD Bersama Dr. A Siri 3

IMBAS DI SINI UNTUK  
KETERANGAN LANJUT



<https://bit.ly/3RFDIY1>

**HARGA:**

**RM90**

**Sambungan Siri 2: RM60**

**DURASI  
KURSUS:**

**SIJIL:**

**Fleksibel**

**Ada**



Dalam kursus ini, anda akan belajar cara melukis objek dengan menggunakan AutoCAD fungsi penyuntingan lanjutan.

Anda juga akan belajar mereka bentuk lukisan 2D menggunakan AutoCAD untuk dipraktikkan dalam dunia pekerjaan sebenar.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp only)".



## Course Synopsis

Kursus hand-ons ini merupakan siri pembelajaran sepanjang hayat kepada semua golongan yang ingin menambah kemahiran sendiri termasuklah pelajar, guru, juruteknik, jurutera, pengamal kejuruteraan dan orang awam. Kursus ini akan dikendalikan sepenuhnya oleh Prof. Madya Dr. Amirmudin Udin dari Sekolah Pendidikan, Universiti Teknologi Malaysia yang merupakan seorang konsultan terlatih dalam bidang lukisan kejuruteraan berbantu komputer ini.

Beberapa video langkah demi langkah telah disediakan secara komprehensif untuk membantu para peserta memahami kaedah melukis secara lebih cepat, mudah dan santai. Dr. A juga bermurah hati untuk memberikan salinan naskah buku penulisan beliau (bernilai RM50) yang ditukar kepada format e-book bagi memberikan panduan yang lebih diverse. Menarik bukan? Jom semua!



## Course Learning Outcome

- ✓ Melukis objek dengan menggunakan AUTOCAD fungsi penyuntingan lanjutan
- ✓ Mereka bentuk lukisan teknik 2D menggunakan AutoCAD untuk dipraktikkan dalam dunia pekerjaan sebenar



## OpenCreds

- ✓ Kursus ini telah disemak oleh OpenLearning bagi memastikan kandungan kursus ialah kandungan Akademik yang berkualiti. Kursus Micro-Credential ini ialah kursus OpenCreds di mana ia sejenis kelayakan stand-alone yang mempunyai kualifikasi formal dan kredibiliti yang diperakui. Kursus OpenCred adalah kursus atas talian yang menyediakan ruang bagi pelajar untuk persiapan kerja pada masa akan datang.



## Course Duration

- ✓ Peserta perlu menyelesaikan ketiga-tiga siri kursus Mudahnya AutoCAD 2D bersama Dr. A bagi mendapatkan 2 jam kredit untuk kursus Undergraduate (UG) di Sekolah Pendidikan, UTM iaitu kursus "Computer Assisted Engineering

Drawing"



## Pre-requisite

- ✓ Tiada pengetahuan prasyarat



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# Technical Report Writing for Civil Engineers

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3CJqb8f>

COURSE  
DURATION:

**Flexible**

COST:

**RM100**



A technical report is an important document that presents a solution to a problem.

Understand the difference between different types of technical reports, what they are used for, and how to write them effectively.

Be able to effectively write civil engineering technical reports by the end of the course.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The course provides an understanding of technical communications and technical reports. Technical communications can be delivered through formal and informal mediums. Technical report is an example of the formal medium. Different types of technical reports will be presented in the field of civil engineering. The presentation will look into definition, purpose, formatting and writing strategies. At the end of the course, participants should be able to draft the technical reports based on their project objectives.



## Course Learning Outcome

- ✓ To understand about the technical communications and technical report
- ✓ To understand different types of technical reports in civil engineering field
- ✓ To draft different types of technical reports based on project objectives



## Pre-requisite

- ✓ This course does not require any pre requisite knowledge



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**MC** *Micro*  
Credentials

# Building Development Laws and Legislations

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3B2ugmz>



Discover the laws and regulations for building development to ensure you make the most of your investment or construction.

The course is designed for professionals and individuals whose work involves the study of local planning authorities, development plans, planning control, appeal board, tree preservation and development areas.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The course provides a learning platform for participants in different types of building laws and legislations based on the Town and Country Planning Act 1976 (Act 172). This course contains the fundamental value to a range of professionals and others whose work requires knowledge to apply the town and country planning in Peninsular Malaysia. This course aims to explore key cycle stages of acts and regulations in Malaysia, national state and local planning authorities, development plans, planning control, appeal board, tree preservation, and development areas.



## Course Learning Outcome

- ☒ Identify key cycle stages of acts and regulations, liabilities and responsibilities of relevant parties
- ☒ Describe the requirement as stated in Town and Country Planning Act 1976 (Act 172)



## Pre-requisite

- ☒ This course does not require any pre requisite knowledge



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# Penyuntingan Video Digital: Mudah dan Percuma

IMBAS DI SINI UNTUK  
KETERANGAN LANJUT



<https://bit.ly/3Q965am>

**HARGA:**

**RM50**

**DURASI  
KURSUS:**

**Fleksibel**

**SIJIL:**

**Ada**



Dalam kursus ini, anda akan belajar cara menggunakan perisian penyuntingan video OpenShot dan ShotCut untuk mengubah suai dan menyesuaikan sebarang jenis idea menjadi video yang kelihatan profesional.

Pada akhir kursus ini, anda akan dapat mengambil idea kreatif anda dan mengubahnya menjadi video yang disunting hebat yang anda miliki untuk berkongsi dengan sesiapa sahaja.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp sahaja)".



## Sinopsis Kursus

Kursus ini berfungsi sebagai pengenalan kepada proses penerbitan video digital menggunakan perisian penyuntingan video yang dikenali sebagai OpenShot dan ShotCut. Kursus ini akan membimbing peserta untuk menterjemahkan idea kreatif kepada penerbitan video digital dengan menggunakan perisian penyuntingan video digital yang berkonsepkan sumber terbuka, percuma, dan merentas platform. Kursus ini juga akan membawa peserta untuk meneroka teori dan praktis dalam menggunakan pelbagai gaya dan teknik penyuntingan video. Menerusi sesi demonstrasi dan pengalaman langsung, peserta akan mempelajari asas dalam teknik penyuntingan video, menambah kesan video transisi, kesan khas, kesan visual, menggunakan filter, penyuntingan audio, pengubahsuaian warna, chroma key, masking, picture in picture dan banyak lagi. Kursus ini akan membolehkan anda menyunting dan seterusnya menerbitkan video digital dengan mudah, pantas dan percuma.



## Hasil Pembelajaran

- ✓ Menguasai pengetahuan berkaitan dengan konsep asas penyuntingan video digital.
- ✓ Berkemahiran dalam proses penyuntingan video menggunakan perisian penyuntingan video digital berasaskan sumber terbuka
- ✓ Berkemahiran dalam proses penerbitan video menggunakan perisian penyuntingan video digital berasaskan sumber terbuka



## Pra-Syarat

- ✓ Tiada pengetahuan prasyarat



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# Penyuntingan Video Mudah Menggunakan Smartphone

IMBAS DI SINI UNTUK KETERANGAN LANJUT



<https://bit.ly/3Av2A8w>

**HARGA:**

**RM40**

**DURASI KURSUS:**

**Fleksibel**

**SIJIL:**

**Ada**



Adakah anda ingin membuat video pendek dengan cepat menggunakan telefon pintar anda?

Anda akan belajar cara menambah teks, imej, audio, video & animasi. Kami juga akan merangkumi kesan khas tertentu dan kemahiran menyunting video.

Anda akan dapat mengeksport video anda ke pelbagai platform seperti YouTube dan banyak lagi.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621(WhatsApp only)".



## Sinopsis Kursus

Kursus ini memberi pendedahan tentang kemahiran suntingan video menggunakan telefon pintar. Antara kemahiran yang dipelajari adalah termasuk penambahan dan animasi teks, imej, audio and video. Selain itu, kesan khas, teknik overlay dan kemahiran pemampatan video juga turut disentuh. Selain itu, pengetahuan berkaitan eksport video menggunakan pelbagai pelantar juga turut didedahkan. Akhir sekali, pengguna berupaya untuk menghasilkan video menggunakan aplikasi telefon pintar dengan mudah serta memuatnaik ke YouTube dan lain-lain pelantar.



## Hasil Pembelajaran

- ✓ Mengetahui konsep asas aplikasi KineMaster dan mengetahui apakah teknik atau efek yang boleh dibuat menggunakan aplikasi KineMaster
- ✓ Mengetahui cara menambah video, teks dan audio semasa proses suntingan dan mengetahui teknik penggunaan teks dan penambahan media semasa proses suntingan
- ✓ Mengetahui cara menggunakan layer, zoom dan overlay semasa proses suntingan



## Pra-Syarat

- ✓ Tiada pengetahuan prasyarat



## Jam Kredit

- ✓ 2 Jam (tidak termasuk projek penilaian)



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Credentials

# Pemikiran Komputasional untuk Penyelesaian Masalah Menggunakan Pengaturcaraan Robotik

**DURASI KURSUS:**

**Fleksibel**

**IMBAS DI SINI UNTUK  
KETERANGAN LANJUT**



<https://bit.ly/3xDjD7V>

**SIJIL:**

**Ada**

**HARGA:**

**RM90**



Kursus ini diajar oleh guru berpengalaman dan dilengkapi dengan kit robotik.

Anda akan mempelajari pemikiran komputasi dan asas pengaturcaraan sekali gus mewujudkan peluang untuk menggunakan pengetahuan ini untuk mereka bentuk dan kod robot

Pemikiran komputasional (Computational Thinking) kini diakui sebagai arena yang boleh dinikmati oleh semua peringkat umur.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp sahaja)".



## Course Synopsis

Kursus Pemikiran komputasional untuk penyelesaian masalah menggunakan pengaturcaraan robotik adalah sebuah e-kursus yang sesuai untuk dilaksanakan dua hari hingga satu minggu untuk memperkenalkan konsep asas pemikiran komputasional (Computational Thinking - CT). Kursus ini boleh dijadikan kursus pengenalan dan tambahan untuk pemahaman dan menggilap konsep CT dengan mengintegrasikannya dengan pendidikan robotik. Para peserta akan belajar dan mempraktikkan kemahiran CT dalam menyelesaikan masalah robot. Mereka juga berpeluang menerokai pengalaman pengaturcaraan robotik dan mencabar diri mereka dalam permainan dan perlumbaan robot dengan tahap kesukaran yang berbeza. Sebahagian aktiviti pengajaran dan pembelajaran dalam modul ini memerlukan peserta untuk mengatur cara sebuah robot menjejak garisan. Beberapa aktiviti dalam kursus ini menggunakan robot menjejak garisan bernama Robokar sebagai contoh. Walaubagaimana pun, robot menjejak garisan yang lain juga boleh digunakan untuk mengikuti kandungan kursus ini.



## Course Learning Outcome

- ✓ Mengetahui konsep asas aplikasi KineMaster dan mengetahui apakah teknik atau efek yang boleh dibuat menggunakan aplikasi KineMaster
- ✓ Mengetahui cara menambah video, teks dan audio semasa proses suntingan dan mengetahui teknik penggunaan teks dan penambahan media semasa proses suntingan
- ✓ Mengetahui cara menggunakan layer, zoom dan overlay semasa proses suntingan  
Mengetahui bagaimana cara mengeksport video suntingan ke format .mp4



## Pre-requisite

Adalah lebih baik bagi peserta untuk mempunyai line following robot mudah alih supaya peserta boleh menjalankan semua aktiviti yang diberikan. Selain itu, peserta juga digalakkan untuk menyediakan alat kelengkapan yang dipermulakan untuk aktiviti di akhir pembelajaran seperti berikut;

- ✓ Kertas Keras bewarna putih
- ✓ Gunting
- ✓ Pemadam
- ✓ Pensil
- ✓ Pelekat bewarna hitam ( Saiz lebar: 1.7 cm )



## Course Delivery Format

- ✓ Kursus ini melibatkan video dan nota untuk modul pembelajaran, pembelajaran sendiri dan penilaian rasmi.



## Course Duration

- ✓ 2-7 Hari



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Credentials

# Paving Your Way Digitally

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3L9vlas>

**COST:**

**RM40**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Communicating effectively requires more than simply conveying words and sentences.

Learn the essential components of nonverbal communication, including eye contact, gestures, posture, and timing.

This course introduces users to the tips and tricks to delivering an effective online presentation involving non-verbal communication skills. It highlights the dos and don'ts while preparing for an online presentation.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course introduces users to the tips and tricks to delivering an effective online presentation involving non-verbal communication skills. It highlights the dos and don'ts while preparing for an online presentation. By the end of this course, the participants will be able to improve the use of non-verbal communications in an online setting.



## Course Learning Outcome

- ✓ Apply the tips and tricks of an effective online setting for online presentation
- ✓ Apply effective non-verbal communications in an online setting



## Requirements

- ✓ Recording tools such as smartphone or a laptop/PC webcam
- ✓ Virtual green screen \*optional\*
- ✓ Earphone/headphone with microphone \*optional\*



## Pre-requisite

- ✓ None



## Course Duration

- ✓ A one day course



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# Introduction to Decision Modelling

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3LIU4x>

**COST:** Free

**COURSE DURATION:** Flexible

**CERTIFICATION:** Yes



Learn the Introduction to Decision Modelling. This course provides an insight into the world of engineering, specifically semiconductor product and test engineering.

This course will give you a better understanding of what the life of a chip is like, from the birth of an idea to a chip that becomes an integral part of your life (like this screen you are reading this on).

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



### Course Synopsis

In this 3-hour long course, you will learn the concept of decision modelling. We will focus on the importance of engineering, business, and management modelling in practice, and how to apply the decision modelling tools and techniques to analyse the related problems. There are no pre-requisites needed for this course, and you should be able to complete the project successfully.



### Course Learning Outcome

- ☒ Analyze features of problems that can be solved using decision modelling techniques



### Pre-requisite

- ☒ None



### Credit Transfer

- ☒ This course can be credit transferred to subject MRSE2613



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# Smart Literature Review using NVivo for Researcher

SCAN HERE TO  
FIND OUT MORE



COURSE  
DURATION:

**Flexible**

CERTIFICATION:

**Yes**

<https://bit.ly/3d9Ynzy>



Reimagined NVivo software is here to cater more effectively to the demands of your project.

Through this course, you will learn how to navigate the new interface and stay efficient with basic skills of using NVivo.

You will be able to organise and manage your huge amount of literature in an intelligent way and conduct smart literature reviews using NVivo.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

Hi, welcome learners to the course of Smart Literature Review using Nvivo for Researcher! We hope you will have a wonderful time and learn a lot about the basic skills of using Nvivo Reimagined software for managing your Literature sources in a smart way. It analysed the unstructured information through the data gathered from the related literature sources. It gains insight into your material which provides you more time to analyse the materials, identify the themes, glean insight and develop meaningful conclusions. It does NOT do the thinking for you, it provides a sophisticated workspace that enables you to work through your information. Nvivo has tools for classifying, sorting and arranging information. At the end participant will also be able to present the output of the literature summary analysis.



## Course Learning Outcome

- ✓ Gather Literature Review sources and organize material into Nvivo
- ✓ Summarize and analysed Literature Review sources using Nvivo tools



## Pre-requisite

- ✓ Each Participant need to use their own laptop/PC as they need to upload the Nvivo 14 days trial version from the QSR International website before class (this process may take 3-4 hours depending on the laptop capacity) This is to ensure that the participants can follow the steps while watching the instruction step-by-step video provided by the speaker



## Course Duration

- ✓ 48 Hours



## Credit Transfer

- ✓ No credit transfer for this course



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**MC** *Micro*  
Credentials

# Integrated Circuits: Product Engineer and Product Life Cycles

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM60**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3RAG4T1>



Not every initial product is a success. Learn how to spot an idea before it is doomed

Explore what really makes products tick and why they fail.

Understand the various issues faced by product engineers, namely cost, time-to-market pressures, competition, and obsolescence.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 016-2195295 (WhatsApp only)".



## Course Synopsis

A collaborative initiative between the university and semiconductor industry.

This course provides an insight into the world of engineering, specifically semiconductor product and test engineering. The world around us is fraught with technology and our existence and comfort today rely heavily on these gizmos. From our phones to orbiting satellites, everything is powered by semiconductor chips. This course will give you a better understanding of what the life of a chip is like, from the birth of an idea to a chip that becomes an integral part of your life (like this screen you are reading this on). We will walk you through a Product Life Cycle (PLC) and what goes into developing a product to make into it a full-fledged, marketable chip that the world will need



## Course Learning Outcome

- ☐ Describe the Product Engineer's job nature and roles which correspond to design-manufacturing outcomes.
- ☒ Describe the concepts of a Product Life Cycle



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**MC** *Micro*  
Credentials

# PID with Arduino

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3eJHsnT>

COST:

**RM100**

COURSE  
DURATION:

**Flexible**

CERTIFICATION:

**Yes**



Build a deeper understanding of how to write your own control algorithm and deploy it on the embedded microcontroller for a given application.

This 7-hour long course will cover everything from the basics of Proportional Integral Derivative (PID) implementation on an embedded microcontroller.

It will also highlight the difference between manual control and feedback control.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 7-hour long course, the learners will learn the basics of Proportional Integral Derivative (PID) implementation on an embedded microcontroller, particularly an Arduino board. We will do this by first discussing the concept of PID control by highlighting the difference between manual control and feedback control. Then, we will discuss the PID equation from two domains of time, which are continuous and discrete.

Next, we will explain the programming structure of PID based on the Arduino programming framework. Based on this PID programming structure, we will explain how to write our own code of PID control to be run on an Arduino board. We will use two hands-on examples, which are temperature PID control and DC motor speed PID control using Arduino board.



## Course Learning Outcome

- ✓ Acquire basic concept of PID control algorithm
- ✓ Develop a PID control algorithm in C language
- ✓ Implement the PID control algorithm using Arduino board on temperature control and DC motor speed control.



## Pre-requisite

- ✓ Basic C programming



## Course Duration

- ✓ 7 Hours



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# Fuzzy Logic with Arduino

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3xbedkb>

COST:

**RM100**

COURSE  
DURATION:

**Flexible**

CERTIFICATION:

**Yes**



Fuzzy Logic control is an area of control theory that deals with reasoning based on "fuzzy logic". It is a control notation form addressing vagueness and uncertainty in human judgment.

Learn how to build a FLC system by writing Arduino code, and then viewing the results on some real-world examples

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 7-hour long course, the learners will learn the basics of Fuzzy logic control (FLC) implementation on an embedded microcontroller, particularly an Arduino board. We will do this by first discussing the concept of Fuzzy control by highlighting the difference between manual control and feedback control. Then, we will discuss Fuzzy variables from two domains, which are crisp membership and fuzzy membership.

Next, we will explain the programming structure of Fuzzy control based on the Arduino programming framework. Based on this Fuzzy logic programming structure, we will explain how to write our own code of Fuzzy logic control to be run on an Arduino board. We will use two hands-on examples, which are temperature FLC and DC motor speed FLC using Arduino board.

Finally, we will discuss several parameters to tune the FL controller to get the required output response. This course is aimed at learners who are looking to get started with an intention of how to write a control algorithm and deploy it on the embedded microcontroller. There are no hard prerequisites, and any competent computer user should be able to complete the project successfully.



## Course Learning Outcome

- ☒ Acquire basic concept of PID control algorithm
- ☒ Develop a PID control algorithm in C language
- ☒ Implement the PID control algorithm using Arduino board on temperature control and DC motor speed control.



## Pre-requisite

- ☒ Basic C programming



## Course Duration

- ☒ 48 Hours



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# Mari Kira Faraid Menggunakan Kalkulator Saintifik

IMBAS DI SINI UNTUK KETERANGAN LANJUT



<https://bit.ly/3eERUNh>

**HARGA:** **RM50**

**DURASI KELAS:**

**Fleksibel**

**SIJIL:**

**Ada**



Merupakan kursus secara bersemuka dalam tempoh satu hari. Ianya memberikan pendedahan kepada peserta berkaitan asas-asas dalam ilmu faraid.

Selain itu, rukun-rukun, syarat-syarat pewarisan Islam, kedudukan faraid dalam pengurusan harta pusaka juga diterangkan dalam bentuk video dan latihan berterusan.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp Sahaja)".



## Sinopsis Kursus

Kursus sehari ini memberikan pendedahan kepada peserta berkaitan asas-asas dalam ilmu faraid. Selain itu, rukun-rukun, syarat-syarat pewarisan Islam, kedudukan faraid dalam pengurusan harta pusaka juga diterangkan secara fizikal dan bersemuka untuk pencerahan yang lebih jelas. Nota dan aktiviti latihan akan diberikan secara atas talian di dalam pelantar kursus.



## Hasil Pembelajaran

- ✓ Menerangkan waris-waris yang layak menerima pusaka
- ✓ Membezakan waris-waris ashab al-furud dan asabah
- ✓ Mengira pembahagian pusaka oleh waris-waris ashab al-furud dan asabah



## Mod Kursus

- ✓ Penyampaian kursus - Fizikal dan bersemuka (Face to Face)

Nota rujukan, aktiviti pengukuhan dan ujian penilaian - secara atas talian, di dalam pelantar kursus



## Kredit Jam

- ✓ Satu (1) hari secara berkala



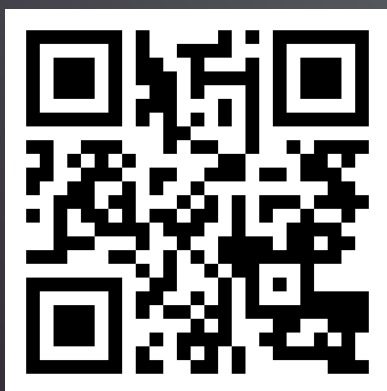
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# Basic Japanese Communication for Travel Purpose

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3B9QnGu>

**COST:** **RM50**

**COURSE  
DURATION:** **Flexible**

**CERTIFICATION:** **Yes**



This course is designed by experts who understand the needs of learners who wish to travel to Japan

It will teach you skills such as how to ask for directions, what to do when lost and how to order food when eating out.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this course, participants will learn basic Japanese communication skills in practicality for travelling purposes when visiting Japan. We will do this by learning some simple words and phrases which might be useful when travelling around in Japan. This includes basic communication skills for shopping, basic communication skill for getting around in town, basic communication skill for getting into restaurants, as well as basic communication skill for getting onto transportation. There are no prerequisites and any participant with zero knowledge of Japanese language should be able to complete this course.



## Course Learning Outcome

- ✓ Use basic words and phrases for shopping in Japanese
- ✓ Use basic words and phrases for getting around in town in Japanese
- ✓ Use basic words and phrases for getting into restaurant in Japanese
- ✓ Use basic words and phrases for getting onto transportation in Japanese



## Course Duration

- ✓ 48 Hours



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# Environmental Sampling

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3STIIKs>

**COST:**

**RM50**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Sample preservations is important to protect environmental samples from degradation.

This course is designed to meet the requirements imposed by the Department of Chemistry Malaysia (JKM) and Department of Environment Malaysia (DOE).

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

Sampling and sample preservations is an important step in chemical analysis especially for environmental samples. In this 2 days course targeted undergraduate, postgraduate and industrial personnel with no prerequisite. Participants will be exposed to the theoretical and practical example in terms of sampling and sample preservations of environmental samples including water, air and also solid such as soils, sediments, sludge and more. The standard methods for sampling and sample preservations including Association of Official Agricultural Chemists (AOAC), American Public Health Association (APHA), American Society for Testing and Materials (ASTM) and the Malaysian Environmental Acts and Regulations 1974 will be discussed, where the participants are given up-to-date methods, rules and regulations. The course is designed to meet the requirements imposed by the Department of Chemistry Malaysia (JKM) and Department of Environment Malaysia (DOE).



## Course Learning Outcome

- ☒ Perform sampling process for environmental samples such as effluent water, air and soil.
- ☒ To apply the environmental standards, rules and regulations in terms of sampling, sample preservation and storage.



## Pre-requisite

- ☒ None



## Course Duration

- ☒ 16 Hours



## Credit Transfer

- ☒ None Credit Transfer



## Course Mode

- ☒ Online



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# Basic Statistic for Plant Biology

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3ZI9IUC>

**COST:**

**RM50**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Learn them basic terminologies used in the experimental design including experimental unit, replication and variables will be defined to enable hypotheses tested. This course is a user-friendly guide to statistics ideal for facilitating the design and analysis of plant science experiments.

Participant expected to learn the steps in hypothesis testing and their application in plant biology data analysis. The learners also will learn how to develop a proper design for plant study including field, glasshouse, laboratory experiments and observational studies.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In these 8 hours of online course, the learners will learn the steps in hypothesis testing and their application in plant biology data analysis. The learners also will learn how to develop a proper design for plant study including field, glasshouse, laboratory experiments and observational studies. The basic terminologies used in the experimental design including experimental unit, replication and variables will be defined to enable hypotheses tested. The tutorial session will allow the learners to learn step by step how to input their data in the statistical software (SPSS®) according to the different dataset with correct implementation, analysis and interpretation. This course is a user-friendly guide to statistics ideal for facilitating the design and analysis of plant science experiments. There are no prerequisites yet but learners/students with basic science will be benefited for this course and should be able to complete the course successfully.



## Course Learning Outcome

- ☒ Define the basic terminologies used in plant biology experimental design.
- ☒ Explain the theory and steps in hypotheses testing.
- ☒ Demonstrate the analysis of two groups data comparison.
- ☒ Analyse and interpret the data for more than two groups comparison.



## Pre-requisite

- ☒ None



## Course Duration

- ☒ 8 Hours



## Credit Transfer

- ☒ None Credit Transfer



## Course Mode

- ☒ Online



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# Infrared Spectroscopy of Organic Compounds

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/43hwQQr>

**COST:**

**RM50**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Learn how to determine the structures of complex organic compounds.

This course is designed for learners who want to learn how to use IR spectroscopy to determine the structures of unknown compounds.

You will master the theory and application of infrared (IR) spectroscopy, which is frequently used by chemists to verify the structures of organic compounds.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 3-hour online course, you will learn the techniques to conduct SWOT (strengths (S), weaknesses (W), opportunities (O) and threats (T)) and PESTEL (politic (P), economic (E), social (S), technological (T), environment (E) and legal (L)) analyses. A SWOT-PESTLE analysis can be used as a pre-assessment tool to evaluate and forecast solar technology penetration in one country, whether it is feasible or not. This course is aimed at learners who have interest in renewable solar technology and industries related to solar technology networks. There are no hard prerequisites and any individual who has interest in solar technology can enrol to this course.



## Course Learning Outcome

- ✓ Apply the basic concepts of infrared (IR) spectroscopy.
- ✓ Analyse the infrared (IR) data and spectra of hydrocarbons and aromatic compounds
- ✓ Evaluate the infrared (IR) data and spectra of alcohols, phenols, ethers, amines and nitriles
- ✓ Examine the infrared (IR) data and spectra of carbonyl compounds.
- ✓ Describe the factors affecting the carbonyl frequencies.



## Pre-requisite

- ✓ Science Background



## Course Duration

- ✓ 7 Hours



## Credit Transfer

- ✓ Spectroscopic Methods in Organic Chemistry (SSCC 4023) MC1 (0.5 credit)



## Course Mode

- ✓ Online



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# Robotic System Simulation Analysis MATLAB Simulink

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FIND OUT MORE



<https://bit.ly/423muVh>

**COST:**

**Student: RM 100**  
**Industry: RM300**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Learn how to simulate a robotic system.

This course aims to provide participants essential knowledge and skills in the simulation analysis of a robotic control system.

Course participants are expected to learn different techniques in the construction of Matlab/Simulink block diagrams for the simulation analysis of robotic PID-control system.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

Robotic simulation provides a computational proving platform to researchers and automation engineers in their understanding and prediction on how the robots of the future should be designed and automatically controlled for safer operation and improved performance. This course aims to provide participants essential knowledge and skills in the simulation analysis of a robotic control system. Particular emphasis is laid on the simulation of different robotic dynamic models and robotic PID-control schemes through the use of Matlab/Simulink. Course participants are expected to learn different techniques in the construction of Matlab/Simulink block diagrams for the simulation analysis of robotic PID-control system. Participants of the course should have some basic knowledge on dynamics and control engineering to better understand the course lectures.



## Course Learning Outcome

- ☒ Obtain mathematical models of different robotic parts and components.
- ☒ Construct Matlab/Simulink robotic block diagram.
- ☒ Analyze PID controller performance in robotic control.



## Pre-requisite

- ☒ Dynamics, Control Engineering



## Course Mode

- ☒ In - Person



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# Cement Technology

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FIND OUT MORE



<https://bit.ly/3muYWIm>

**COST:**

**RM79**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Learn about cement technology fundamentals and the latest technology updates.

Enhance your understanding in cement technology so you can compete with the best and be ahead of your competitors!

Throughout the course, the participant will be supplemented with the knowledge to enhance their understanding of cement technology.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The course provides a learning platform for participants in gaining knowledge on cement technology to the next level. This course contains complete fundamental knowledge of cement that has been practiced by cement factories. Throughout the course, the participant will be supplemented with the knowledge to enhance the understanding in cement technology. Basically, the aim of this course to give comprehensive understanding of cement technology fundamental and process.



## Course Learning Outcome

- ✓ Explain the basic and various types of cement.
- ✓ Discuss the cement hydration process and the testing of cement.



## Pre-requisite

- ✓ Technical skills certificate
- ✓ Working experience in construction industry



## Course Duration

- ✓ 2 Hours



## Course Mode

- ✓ Online



## Collaborations

- ✓ Institut Kemahiran Perumahan dan Kerajaan Tempatan (IKPKT).
- ✓ IKPKT will contribute for the course enrolment.
- ✓ MoU and MoA will plan to be conducted in a near future.



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# Uitemate, Swim & Survive Malaysia !

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3l4w21x>

**COST:**

**UTM student/ Staff: RM 160**  
**Public: RM300**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Discover, Swim, and Survive Malaysia! This course is intended to teach children, adults, and the elderly how to independently float and follow at three different depths.

This 4-hour course is uniquely educates and boosts water confidence through special teaching methods. It also suitable for Individuals with water phobia and with near-drowning trauma experiences.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This 4-hour crash course is conducted face-to-face in three separate swimming pools (1.2 metres, 2 metres and 5 metres deep) and is facilitated by experienced water safety, swimming and life saving instructors from MJIT, who are also members of the Life Saving Society Malaysia.

The Japanese term 'uitemate' means 'to float and follow', the most fundamental skill demanded during any deep-water emergency, yet a skill very often ignored and under emphasised by the Malaysian public. The uitemate approach was coined by Professor Dr. Hidetoshi Saito, and is actively promoted and implemented in Japan. This approach has been successfully performed during water emergencies in Japan (e.g. in schools, during tsunami emergency, etc).

Uitemate, Swim & Survive, Malaysia! aims to hands-on expose to Malaysian adults (above 18 years old), the basic swim-for-survival-skills, warranted during a deep-water emergency or water panic episode. Individuals with water phobia and with near-drowning trauma experiences are very much encouraged to enroll in this 4-hour course as this course uniquely educates and boosts water confidence through special teaching methods.

These methods include energy-saving swim for survival skills, specially designed for adult learners (including senior citizens) and are not taught in any other swimming classes in Malaysia. As of year 2022, the most senior citizen who successfully benefitted from this course is a female aged 66 years old.



## Course Learning Outcome

- ☒ Swim and survive in shallow water pool of 1.2 metres deep.
- ☒ Swim and survive in deep water pools of 2 and 5 metres deep.



## Course Instructors

- ☒ 1 instructor will be assigned to 3 participants.
- ☒ Female participant will be led by Female Coach.
- ☒ Male participant will be led by Male Coach.



## Course Mode

- ☒ In - Person/ Face to Face



## Course Scedule

- ☒ This course runs : Tuesdays (9 a.m. - 2 p.m.)



## Course Duration

- ☒ 4 Hours



## Location

- ☒ Pusat Akuatik Darul Ehsan, Shah Alam, Selangor.

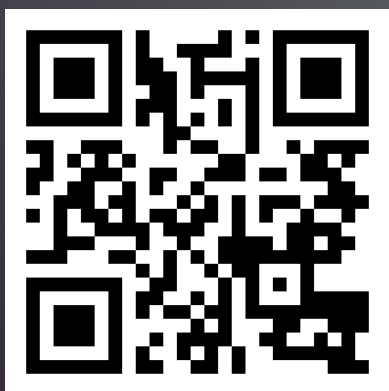


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# Ship and Offshore Design

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3B9QnGu>

**COST:** **RM350**

**COURSE DURATION:** **Flexible**

**CERTIFICATION:** **Yes**



This course will introduce the definition of design and spiral nature of ship design process. this course is aimed of learners who are working in maritime sector such as Naval Architects, Marine Engineers and/or Port Operators and also who are interested to know about latest ship and offshore design requirement based on international Maritime Organization (IMO).

Participant are expected to learn outline the role of International Maritime Organization (IMO) and Ship Classification Society for the ship and offshore design and explain the basic stages in design spiral and governing principles for ship and offshore design.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 3-hours short course, you will learn the basic knowledge for designing a ship and offshore platform. We will do this by first introducing the definition of design and spiral nature of ship design process. Four different stages of ship design will be discussed briefly but focusing more on basic ship design covering conceptual design and some of preliminary design stage. The contents of the course mainly cover the theory and governing principles used in basic ship design starting from understanding mission and owners requirement, followed by preliminary estimation of main dimensions, hull form properties and generation process, preliminary calculation of hydrostatics and stability. Some of the statutory requirements in design will also be discussed and finally method of estimating first cost of the ship will be introduced. This course is aimed at learners who are working in maritime sector such as Naval Architects, Marine Engineers and/or Port Operators and also who are interested to know about latest ship and offshore design requirement based on International Maritime Organization (IMO). There are no hard prerequisites, and any competent computer user should be able to complete the project successfully.



## Course Learning Outcome

- ☒ Outline the role of International Maritime Organization (IMO) and Ship Classification Society for the ship and offshore design.
- ☒ Explain the basic stages in design spiral and governing principles for ship and offshore design.



## Course Duration

- ☒ 3 Hours



## Pre-requisite

- ☒ Mathematics and basic physics



## Course Mode

- ☒ In - Person



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# Mandarin Made Easy

**SCAN HERE TO  
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<https://bit.ly/46zUYkt>

**COST:** **RM50**  
**COURSE  
DURATION:** **Flexible**  
**CERTIFICATION:** **Yes**



Nihao!!, Is learning Mandarin on your bucket list? Being able to speak in Mandarin will give you an advantage.

This course introduces the students to the basic skills of Mandarin Language focusing on speaking with the help of PINYIN. This course is flexible and conducted online.

You will learn how to properly pronounce words in Mandarin, as well as simple sentence execution.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course introduces the students to the basic skills of Mandarin Language focusing on speaking with the help of PINYIN. Students will be able to pronounce words in Mandarin with the correct tone. In addition, students will also be exposed to carry out simple sentences. By the end of the course, students should be able to pronounce correctly basic Mandarin syllable.



## Course Learning Outcome

- ☒ Pronounce initials and finals correctly.
- ☒ Differentiate tones in Chinese.



## Pre-requisite

- ☒ None



## Course Duration

- ☒ 2 Hours



## Course Mode

- ☒ Online



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**MC** *Micro*  
Credentials

# Let's Speak Arabic

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3PKe951>

**COST:**

**RM60**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Experience the beauty of the Arabic language! Learning a new language opens possibilities and allows us to better understand our surroundings.

In this course, you will learn the basics of the Arabic language, including listening, speaking, reading, and writing.

You will be able to recognise all Modern Standard Arabic alphabets and discriminate between vowels, particularly short and long vowels.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course introduces the students to the basic skills of Arabic Language that includes listening, speaking, reading and writing. Students taking this course will be able to produce accurate pronunciation and proper usage of Arabic characters. At the end of this course, students will be able to recognise all Modern Standard Arabic alphabets, and differentiate between vowels especially in short vowels and long vowels. Besides that, students will be able to write all the Arabic alphabets correctly and accurately.



## Course Learning Outcome

- ☒ Recognise all Modern Standard Arabic alphabets with accurate pronunciation.
- ☒ Differentiate between vowels especially in short vowels and long vowels.
- ☒ Apply all the Arabic alphabets in writing correctly and accurately.



## Pre-requisite

- ☒ None



## Course Duration

- ☒ 1 Hours



## Course Mode

- ☒ Online



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# Research Proposal Writing Series – Phase 1: Mendeley

**SCAN HERE TO  
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<https://bit.ly/3rjB0dv>

**COST:**

**RM70**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Increase Your Productivity with These Crucial Tools  
for Master's and PhD Candidates and Students!

This course will teach students to Mendeley, a reference manager programme, for managing reading sources and creating bibliographies for research projects.

You will be able to understand the fundamentals and techniques of utilising Mendeley, which will improve their capacity to perform research projects.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course aims to introduce the learners to a software, namely Mendeley, a reference manager, in managing reading sources and producing bibliographies for research reports. Learners will learn the basics and technique of using Mendeley which will subsequently enhance their capability in conducting research projects. Learners will be having a hands-on session in the course delivery, which will effectively enhance their learning process. This course is aimed at learners who are looking to get started or just embarked their research journey. There are no hard prerequisites and any competent computer user should be able to complete the project successfully.



## Course Learning Outcome

- ☒ Use Mendeley software effectively in research report writing.



## Pre-requisite

- ☒ None



## Course Duration

- ☒ 3 Hours



## Course Mode

- ☒ Online



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# Create Great Design in 1 Hour using Canva

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FIND OUT MORE



<https://bit.ly/3D6iEzq>

**COST:**

**RM40**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Canva has been a powerful designing tool in artwork design, which is not limited only to posters, book, invitation card, book cover, and flyer. This course has flexible learning time.

Participants will have a hands-on session in course delivery, which will significantly improve their learning process.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 1-hour long project-based course, participants will learn the basics of using Canva in developing a poster. Canva has been a powerful designing tool in artwork design, which is not limited only to posters, book, invitation card, book cover, and flyer. Participants will be having a hands-on session in the course delivery, which will effectively enhance their learning process. This course is aimed at learners who are looking to get started with Canva in artwork design. There are no hard prerequisites and any competent computer user should be able to complete the project successfully.



## Course Learning Outcome

- ☒ Use Mendeley software effectively in research report writing.



## Pre-requisite

- ☒ None



## Course Duration

- ☒ 1 Hours



## Course Mode

- ☒ Online



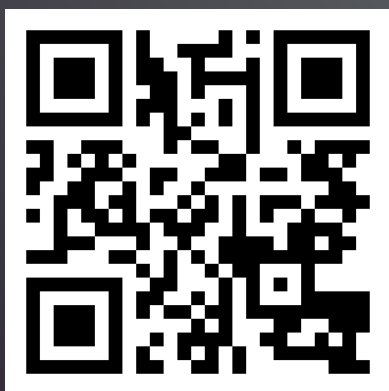
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# Time Dependent ROC Curve

**SCAN HERE TO  
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<https://bit.ly/46IENBp>

**COST:** **RM100**

**COURSE  
DURATION:** **Flexible**

**CERTIFICATION:** **Yes**



Learn how to use the accessible software to import your biomarker data, prepare it for ROC curve analysis, and build the classification table for ROC curve construction.

This course is designed for researchers and doctors who are interested in medical research, particularly in selecting the optimal biomarker for specific diseases. You will learn how to explain the purpose of roc curve analysis in medical research, generate a classification table using r software, differentiate the concept of standard and time-dependent roc curve approaches and generate roc curve using r software.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This 2-hour course provides the basic steps to visualize biomarker performance in medical research using R software. You will learn how to import data into R, data preparation to generate the classification table for the purpose of ROC curve development, using some packages available. Both classical and time-dependent approaches of ROC curve will be covered in this course and the different definitions will be explained. This course is aimed at researchers and clinicians who are actively involved in medical research especially in determining the best biomarker for specific disease. Learners who are familiar with R software is an advantage to start this course.



## Course Learning Outcome

- ☒ Explain the aim of ROC curve analysis in medical research.
- ☒ Generate the classification table using R software
- ☒ Differentiate the concept of standard and time-dependent ROC curve approaches
- ☒ Generate the standard and time-dependent ROC curve using R software



## Course Duration

- ☒ 2 Hours



## Pre-requisite

- ☒ None



## Course Mode

- ☒ Online



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# Basic Concepts of Ordinary Differential

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/46IENBp>

**COST:** RM40

**COURSE DURATION:** Flexible

**CERTIFICATION:** Yes



This course introduces the fundamental concepts of Ordinary Differential Equations through simple, structured, and flexible online learning experiences.

Designed for engineering and mathematics students interested in strengthening differentiation techniques and understanding ODE classifications and solution methods.

Learn to identify ordinary differential equations, classify derivatives, and understand various solution approaches used in engineering mathematics applications.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 2-hour course, we will focus on the basic concepts of ordinary differential equations. Learners will identify and classify the ordinary differential equation. We will determine the type of the equations, type of variable, degree of the derivatives and type of solution. This course is suitable for undergraduate students in engineering programmes. In order to undergo this course, the students should at least have the knowledge on the basic differentiation techniques.



## Course Learning Outcome

- ✓ Identify and classify the ordinary differential equations



## Course Duration

- ✓ 2 Hours



## Pre-requisite

- ✓ Basic knowledge on differentiation techniques



## Course Mode

- ✓ Online



## Credit Transfer

- ✓ SMJM 1023 : Engineering Mathematics 2



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# OpenFlow Switch Specification in Software Defined Network

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM85**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3D7wNMu>



Learn how to construct and maintain Software Defined Networks in practise. Discover how OpenFlow switches and controllers communicate via the OpenFlow protocol.

Understand the core concepts of OpenFlow-based SDNs and how to configure OpenFlow switches for packet forwarding and traffic management.

This course is aimed at learners who are eager to get started with a Software Defined Network.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 6-hour project-based learning course, the learners will gain an understanding of OpenFlow systems that consist of OpenFlow controllers and OpenFlow switches. The topic covers the OpenFlow switches implementation for packet forwarding. On top of that the course includes communication of the controller. We will learn the basics of OpenFlow protocol in the switch as well as in the controller how to use the Ryu controller for communication. This course is aimed at learners who are eager to get started with an Software Defined Network . Basic understanding of data communication in networking is required to be able complete the course successfully.



## Course Learning Outcome

- ☒ Elaborate the OpenFlow protocol.
- ☒ Explain the function of OpenFlow Table in the controller



## Course Duration

- ☒ 6 Hours



## Pre-requisite

- ☒ None



## Course Mood

- ☒ Online



## Credit Transfer

- ☒ None Credit Transfer



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# Geographical Information System (GIS) Management in Local Authorities

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM800**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3D7wNMu>



In these 2-days course, it provides comprehensive understanding of GIS fundamental and hands-on skills. This course is conducted face to face. Participants from local authorities will gain a GIS fundamental knowledge and the basics of GIS implementation in local authorities.

You will be able to explain the fundamental of GIS implementation for local governments and authorities, and you will be able to demonstrate essential knowledge of GIS application implementation in local governments.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



### Course Synopsis

In these 2-days course, it provides comprehensive understanding of GIS fundamental and hands-on skills. Participants from local authorities will gain a GIS fundamental knowledge and the basics of GIS implementation in local authorities. Participants will able to use this knowledge immediately to implements GIS applications in local authorities. There are no hard pre-requisites and any competent computer user should be able to complete the course successfully.



### Course Learning Outcome

- ☒ Explain the fundamental of GIS implementation for Local Authorities.
- ☒ Explain the phases in managing GIS implementation for Local Authorities.
- ☒ Demonstrate the basic skill of GIS applications implementation in local authorities.
- ☒ Plan the GIS implementation applications for Local Authorities.



### Course Duration

- ☒ 2 Days



### Pre-requisite

- ☒ None



### Course Mode

- ☒ Face to Face



### Credit Transfer

- ☒ None Credit Transfer



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# SystemVerilog Fundamentals for Digital Systems Design

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<https://bit.ly/3wkr85y>

**COST:**

**UTM student: RM 200**  
**Professional: RM400**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Get ready to embark on a journey of knowledge to the world of SystemVerilog, the industry - standard language for IC design. This course will focus on basic structures to advanced constructs, laying the foundation for your success in digital design.

Experience the power of practical learning! Our course goes beyond theory with hands-on examples in crucial areas such as modelling styles, and finite state machines.

Fuel your passion for digital design with our depth exploration of verification techniques using testbenches.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

SystemVerilog hardware description language, standardized as IEEE 1800, is commonly used in the integrated circuit design industry for the design and verification of digital systems. This 14-hour course focuses on the fundamental aspects of SystemVerilog, including basic structures and constructs, modeling styles, memory design, and finite state machines, with practical examples in each of these topics. The course also covers verification techniques using testbenches, as well as a hands-on tutorial using an electronic design automation (EDA) tool from AMD-Xilinx. This course is the first part of three micro-credential courses that enable credit transfer to a UTM Master's program, subject to successful assessments.



## Course Learning Outcome

- ✓ Describe basic constructs and structures in SystemVerilog.
- ✓ Design basic digital circuits using the different modeling styles in SystemVerilog.
- ✓ Design memory systems and finite state machines in SystemVerilog from a given specification.
- ✓ Write SystemVerilog testbenches and perform functional verification.



## Course Duration

- ✓ 14 hours



## Pre-requisite

- ✓ Basic knowledge in digital electronics and/or systems.



## Course Mode

- ✓ Online



## Credit Transfer

- ✓ This course is the first part of three micro-credential courses that enable credit transfer for MKEL 1283 Hardware and Software Co-Design.



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# CAD Modelling Technique for Engineers Using Rhino 3d Software !

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3XKXGiL>

**COST:**

**UTM student: RM 300**  
**Professional: RM900**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Gain the practical skills needed to create professional 3D models and drawings using Rhino, an industry-standard CAD software. This course is conducted "Face to Face".

In this course, you will learn how to create, modify, and measure curves and surfaces, as well as how to create a standard orthographic assembly and other types of drawings using an appropriate scaling factor.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This physical training course teaches participants how to use Rhino software to create 2D and 3D models. Participants in this course will learn how to create, modify, measure curves and surfaces, as well as how to create a standard orthographic assembly and other types of drawings using an appropriate scaling factor. Aside from that, participants will learn how to accurately plot their drawings using the plotter function. Participants are able to download their own software trial version from the website's download page. There are no hard prerequisites, and any competent computer user should be able to successfully complete the project.



## Course Learning Outcome

- ☒ Use the Rhino 3D GUI to present their work.
- ☒ Create and modify 2D object as well as measuring lines and curves for checking purpose.
- ☒ Use dedicated commands to create and modify 3D objects that accurately depict the object.
- ☒ Generate 2D orthographic drawings with a complete title block directly from any measured 3D geometry.



## Course Duration

- ☒ 9 hours



## Pre-requisite

- ☒ None



## Course Mode

- ☒ Face to Face



## Credit Transfer

- ☒ None Credit Transfer



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# SWOT Pestel Analysis of Solar Technology

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/3NG9Gh7>

**COST:** **RM50**

**COURSE  
DURATION:** **Flexible**

**CERTIFICATION:** **Yes**



Attention all learners interested in renewable solar technology! Have you ever wondered how to evaluate the feasibility of solar technology penetration in a specific country? Look no further than our online course, where you will learn the essential techniques to conduct SWOT and PESTLE analysis.

You will gain the knowledge and skills to assess the feasibility of solar technology penetration in any country.

With our course, you will be empowered to make informed decisions that can lead to significant growth and success in the renewable energy industry.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 3-hour online course, you will learn the techniques to conduct SWOT (strengths (S), weaknesses (W), opportunities (O) and threats (T)) and PESTEL (political (P), economic (E), social (S), technological (T), environment (E) and legal (L)) analyses. A SWOT-PESTLE analysis can be used as a pre-assessment tool to evaluate and forecast solar technology penetration in one country, whether it is feasible or not. This course is aimed at learners who have interest in renewable solar technology and industries related to solar technology networks. There are no hard prerequisites and any individual who has interest in solar technology can enrol to this course.



## Course Learning Outcome

- ☒ Evaluate the impact of solar energy technologies based on SWOT-PESTEL analysis
- ☒ Evaluate the mitigation strategies to the known negative impacts based on SWOT-PESTEL analysis.
- ☒ Develop strategic plans over time period for re-evaluation based on the outcome from SWOT-PESTEL analysis.



## Course Duration

- ☒ 3 Hours



## Pre-requisite

- ☒ None



## Course Mode

- ☒ Online



## Credit Transfer

- ☒ MMJS 1133 Sustainable Management and Policy.



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# Visual Assessment Training on Flexible Pavement Surface Conditions

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FIND OUT MORE



COURSE  
DURATION:

**Flexible**

CERTIFICATION:

**Yes**

<https://bit.ly/46E4va1>



Pavement cracks and distress can lead to premature failure and loss of service life of a pavement.

This course provides an understanding of the causes, identification methods, and assessment level to determine the quality/characteristic of flexible pavement, then to identify corrective action steps.

The participants will be familiar with all aspects in conducting a pavement surface condition survey and perform visual assessment as required.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



### Course Synopsis

The course provides a learning platform for participants in gaining knowledge on assessing the flexible pavement surface conditions based on visual assessment. The course contains complete fundamental knowledge on types of flexible pavement defects and the possible causes to these failures. Throughout the course, the participant will be supplemented with the assessment to enhance the understanding on how to evaluate different types flexible pavement defects and its severity based on visual evaluation. Basically, the aim of this course is to give comprehensive understanding in recognizing pavement deficiencies and interpretation according to Public Work Department (JKR).



### Course Learning Outcome

- ☒ Identify different types of pavement failures and its severity based on JKR specification.
- ☒ Discuss the possible causes of pavement failures and its suitable treatments.



### Pre-requisite

- ☒ Basic highway engineering knowledge.



### Course Duration

- ☒ 10 Hours



### Course Mode

- ☒ Face to Face



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# Introduction To Time Series Analysis

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<https://bit.ly/3pN3j3D>

**COST:**

**RM150**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Unlock the power of time series modeling in just 12 hours! Our comprehensive course is specifically designed to introduce you to the fundamental concepts of time series models. This course is conducted online and has flexible learning time.

This course aimed for postgraduate students, and learners who wants to analyse data by using time series model. From this course, learners are able to analyse several models by using Microsoft Excel, and R software.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This 12-hours course is designed to introduce the fundamental time series models. This course begins by introducing the types and patterns of the data and the time series models. Continues by developing the regression model, exponential smoothing, and Box-Jenkin model for time series data. The modelling and forecasting of the time series models will be performed by using Microsoft Excel, and R software. No pre-requisite is required for this course and any competent computer user should be able to complete the project successfully. This course aimed for postgraduate students, and learners who wants to analyse data by using time series model. From this course, learners are able to analyse several models by using Microsoft Excel, and R software.



## Course Learning Outcome

- ☒ Distinguish types and patterns of time series data and time series model.
- ☒ Construct the regression model and exponential smoothing methods for trends and seasonality time series.
- ☒ Develop the Box-Jenkins models on real time series data.



## Course Duration

- ☒ 12 hours



## Pre-requisite

- ☒ None



## Course Mode

- ☒ Online



## Credit Transfer

- ☒ Time Series SSCM4113 (2credit)



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# Drone Technology (Design, Parts Installation, And Testing)

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM500**

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FIND OUT MORE**



<https://bit.ly/44rEDMW>



Are you fascinated by drones and want to take your knowledge to the next level? Look no further! Our course, taught by UTM UAVlab experts, will equip you with the skills to design, build, and operate drones in accordance with Malaysian aviation rules.

Whether you're a beginner or an experienced drone operator, or even a university graduate looking to expand your theoretical knowledge, this course is perfect for you. Gain hands-on experience through a blend of online learning and practical activities, and become proficient in aircraft design processes, propulsion systems selection, and flight software handling.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course is taught by UTM UAVlab experts to develop a good understanding of the drone design process, parts installation, and testing in accordance with Malaysian aviation rules. It is suitable for new or experienced drone operators as well as university graduates who want to extend their theoretical knowledge and skill in building drones for various applications. The learning materials will be presented in blending mode, including online learning and hands-on activities. The content of this course covers aircraft design processes, selection of propulsion systems, handling flight software, sensors installation, ground checks and flight test.



## Course Learning Outcome

- ☒ Design one selected drone including its electronic component, propulsion system and airframe structures which compliant to authorities.
- ☒ Construct your designed aircraft using an appropriate manufacturing technique and build processes.
- ☒ Demonstrate UAV piloting activities at different flight modes and applications, at best practices.



## Credit Hours

- ☒ 40 Hours



## Pre-requisite

- ☒ None



## Course Mode

- ☒ Face to Face



## Credit Transfer

- ☒ None Credit Transfer



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# Process Integration: Introduction to Process Integration for Resource Conservation

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM100**

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FIND OUT MORE**



<https://bit.ly/3XSINeq>

Do you want to make a major impact on your industry's energy consumption, resource utilisation, and emissions?

This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, and chemical and energy engineering students that would like to learn the Heat Pinch Analysis technique.

Join us in Part 1 of this series and unlock the power of process integration for resource conservation. This 2-hour video course with assignments will introduce you to the fundamental concepts, history, benefits, and applications of process integration.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The 'Process Integration' Microcredential series is particularly beneficial for industries that are highly energy-intensive and reliant on thermal energy, as it can help them reduce their energy consumption, resource usage, and emissions. This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, chemical and energy engineering students that would like to learn Heat Pinch Analysis technique. While there are no hard prerequisites for this course, learners with basic knowledge of chemical industry processes, mass and energy balance will find it easier to understand.

This is Part 1 of the 'Process Integration' Microcredential series, which introduces the process integration concept for resource conservation. In this 2-hour video course with assignments, you will learn the fundamental concepts of Process Integration, including its history, benefits, and applications. Participants will discover the potential for energy, resource, and emission reductions that can be achieved through the application of process integration in industries.



## Course Learning Outcome

- ☒ Describe the definition, benefits, history and applications of Pinch Analysis.



## Credit Hours

- ☒ 2 Hours



## Pre-requisite

- ☒ Some background in mass and energy balance and chemical industry



## Course Mode

- ☒ Online



## Credit Transfer

- ☒ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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# Process Integration: Process Stream Data Extraction

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM150**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3phrmre>

Do you want to make a major impact on your industry's energy consumption, resource utilisation, and emissions?



This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, and chemical and energy engineering students that would like to learn the Heat Pinch Analysis technique.

Join us in Part 2 of this series and unlock the power of process integration for process stream data extraction. This 3-hour video course with a working session will teach you the correct method for extracting stream data for heat integration using the Pinch Analysis technique.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The 'Process Integration' Microcredential series is particularly beneficial for industries that are highly energy-intensive and reliant on thermal energy, as it can help them reduce their energy consumption, resource usage, and emissions. This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, chemical and energy engineering students that would like to learn Heat Pinch Analysis technique. While there are no hard prerequisites for this course, learners with basic knowledge of chemical industry processes, mass and energy balance will find it easier to understand.

This is Part 2 of the 'Process Integration' Microcredential series, focussing on correct stream data extraction for Heat Pinch Analysis. This 3-hour video course with a working session will teach you the correct method for extracting stream data for heat integration using the Pinch Analysis technique. Participants will learn how to identify the relevant process streams from a process flow diagram (PFD) to be included in a Pinch Analysis study. Additionally, the course will cover how to isolate the stream's temperature and calculate its enthalpy. Participants will also be exposed to appropriate considerations for process changes during stream data extraction.



## Course Learning Outcome

- ✓ Extract correct stream data for Heat Pinch Analysis study.



## Credit Hours

- ✓ 3 Hours



## Pre-requisite

- ✓ Some background in mass and energy balance and chemical industry



## Course Mode

- ✓ Online



## Credit Transfer

- ✓ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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**MC** *Micro*  
Credentials

# Process Integration: Energy Targeting using Composite Curves

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM200**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/46cBemB>



Do you want to make a major impact on your industry's energy consumption, resource utilisation, and emissions?

This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, and chemical and energy engineering students that would like to learn the Heat Pinch Analysis technique.

Join us in Part 3 of the 'Process Integration' Microcredential series, focussing on energy targeting using Composite Curves. The 4-hour video course, which includes a working session, covers the basic concept of heat exchange and Heat Pinch Analysis.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-1787971621 (WhatsApp only)".



## Course Synopsis

The 'Process Integration' Microcredential series is particularly beneficial for industries that are highly energy-intensive and reliant on thermal energy, as it can help them reduce their energy consumption, resource usage, and emissions. This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, chemical and energy engineering students that would like to learn Heat Pinch Analysis technique. While there are no hard prerequisites for this course, learners with basic knowledge of chemical industry processes, mass and energy balance will find it easier to understand.

This is Part 3 of the 'Process Integration' Microcredential series, focussing on energy targeting using Composite Curves. The 4-hour video course, which includes a working session, covers the basic concept of heat exchange and Heat Pinch Analysis. Participants will learn how to achieve the minimum energy target by using the Composite Curves tool. The course also covers the significance of Composite Curves and how to determine the minimum temperature difference. Additionally, a special case of Composite Curves, the threshold case, will be covered.



## Course Learning Outcome

- ✓ Target the minimum energy target by using Composite Curves, and understand its significance.



## Credit Hours

- ✓ 3 Hours



## Pre-requisite

- ✓ Some background in mass and energy balance and chemical industry



## Course Mode

- ✓ Online



## Credit Transfer

- ✓ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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# Process Integration: Energy Targeting using Problem Table Algorithm

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM200**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3Oi0Bww>



Do you want to make a major impact on your industry's energy consumption, resource utilisation, and emissions?

This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, and chemical and energy engineering students that would like to learn the Heat Pinch Analysis technique.

Join us in Part 4 of the 'Process Integration' Microcredential series, focussing on energy targeting using Problem Table Algorithm. The 2-hour video course, which includes a working session, covers an alternative Pinch Analysis tool to target the minimum energy known as the Problem Table Algorithm.

180 "If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The 'Process Integration' Microcredential series is particularly beneficial for industries that are highly energy-intensive and reliant on thermal energy, as it can help them reduce their energy consumption, resource usage, and emissions. This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, chemical and energy engineering students that would like to learn Heat Pinch Analysis technique. While there are no hard prerequisites for this course, learners with basic knowledge of chemical industry processes, mass and energy balance will find it easier to understand.

This is Part 4 of the 'Process Integration' Microcredential series, focussing on energy targeting using Problem Table Algorithm. The 2-hour video course, which includes a working session, covers an alternative Pinch Analysis tool to target the minimum energy known as the Problem Table Algorithm. The tool is easier to calculate and gives more accurate results compared to Composite Curves. You will also learn how to determine the energy savings from the Problem Table Algorithm.



## Course Learning Outcome

- ✓ Target the maximum energy recovery based on the Problem Table Algorithm.



## Credit Hours

- ✓ 2 Hours



## Pre-requisite

- ✓ Some background in mass and energy balance and chemical industry



## Course Mode

- ✓ Online



## Credit Transfer

- ✓ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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# Process Integration: Heat Exchanger Network Design for Maximum Energy Recovery

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM150**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3Q0rciO>



This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, and chemical and energy engineering students that would like to learn the Heat Pinch Analysis technique.

Join us in Part 5 of the 'Process Integration' Microcredential series, focussing on heat exchanger network design for maximum energy recovery. The 3-hour video course, which includes a working session, covers the design of a heat exchanger network to achieve the targeted maximum energy recovery (MER) by using Grid Diagram and Pinch Design Method (PDM).

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".

## HEAT EXCHANGER NETWORK DESIGN FOR MAXIMUM ENERGY RECOVERY

**Course Synopsis**

The 'Process Integration' Microcredential series is particularly beneficial for industries that are highly energy-intensive and reliant on thermal energy, as it can help them reduce their energy consumption, resource usage, and emissions. This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, chemical and energy engineering students that would like to learn Heat Pinch Analysis technique. While there are no hard prerequisites for this course, learners with basic knowledge of chemical industry processes, mass and energy balance will find it easier to understand.

This is Part 5 of the 'Process Integration' Microcredential series, focussing on heat exchanger network design for maximum energy recovery. The 3-hour video course, which includes a working session, covers the design of a heat exchanger network to achieve the targeted maximum energy recovery (MER) by using Grid Diagram and Pinch Design Method (PDM). Participants will also learn how to transfer the result of the grid diagram back into a block flow diagram.

**Course Learning Outcome**

- ✓ Design the heat exchanger network that achieves the minimum energy target by using Pinch Design Method

**Credit Hours**

- ✓ 3 Hours

**Pre-requisite**

- ✓ Some background in mass and energy balance and chemical industry

**Course Mode**

- ✓ Online

**Credit Transfer**

- ✓ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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# Process Integration: Stream Splitting

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM150**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/43oalcV>



This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, and chemical and energy engineering students that would like to learn the Heat Pinch Analysis technique.

Join us in Part 6 of the 'Process Integration' Microcredential series, focussing on heat exchanger network design with stream splitting. The 2-hour video course, which includes a working session, covers an advanced heat exchanger network design technique to achieve the maximum energy recovery target in Heat Pinch Analysis considering stream splitting.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The 'Process Integration' Microcredential series is particularly beneficial for industries that are highly energy-intensive and reliant on thermal energy, as it can help them reduce their energy consumption, resource usage, and emissions. This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, chemical and energy engineering students that would like to learn Heat Pinch Analysis technique. While there are no hard prerequisites for this course, learners with basic knowledge of chemical industry processes, mass and energy balance will find it easier to understand.

This is Part 6 of the 'Process Integration' Microcredential series, focussing on heat exchanger network design with stream splitting. The 2-hour video course, which includes a working session, covers an advanced heat exchanger network design technique to achieve the maximum energy recovery target in Heat Pinch Analysis considering stream splitting. Stream splitting is used when designing the heat exchanger network using the original streams is not sufficient to achieve the maximum energy recovery target without violating any thermodynamic rules.



## Course Learning Outcome

- ✓ Design the heat exchanger network that achieves the minimum energy target by using Pinch Design Method with stream splitting.



## Credit Hours

- ✓ 3 Hours



## Pre-requisite

- ✓ Some background in mass and energy balance and chemical industry



## Course Mode

- ✓ Online



## Credit Transfer

- ✓ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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# Process Integration: The Minimum Number of Units Target

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM100**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/46PAxQw>



This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, and chemical and energy engineering students that would like to learn the Heat Pinch Analysis technique.

Join us in Part 7 of the 'Process Integration' Microcredential series, focussing on determining the minimum number of units target. The 2-hour video course, which includes a working session, covers how to determine the minimum number of heat exchanger units when designing a heat exchanger network.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The 'Process Integration' Microcredential series is particularly beneficial for industries that are highly energy-intensive and reliant on thermal energy, as it can help them reduce their energy consumption, resource usage, and emissions. This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, chemical and energy engineering students that would like to learn Heat Pinch Analysis technique. While there are no hard prerequisites for this course, learners with basic knowledge of chemical industry processes, mass and energy balance will find it easier to understand.

This is Part 7 of the 'Process Integration' Microcredential series, focussing on determining the minimum number of units target. The 2-hour video course, which includes a working session, covers how to determine the minimum number of heat exchanger units when designing a heat exchanger network. Participants will also learn to identify separate systems and the number of loops in the heat exchanger network that lead to a higher number of heat exchanger units.



## Course Learning Outcome

- ✓ Determine the minimum number of heat exchanger units and the number of loops available in the system.



## Credit Hours

- ✓ 3 Hours



## Pre-requisite

- ✓ Some background in mass and energy balance and chemical industry



## Course Mode

- ✓ Online



## Credit Transfer

- ✓ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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# Process Integration: Reducing The Number of Units Through Relaxation Technique

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM150**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3DhwKhl>



This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, and chemical and energy engineering students that would like to learn the Heat Pinch Analysis technique.

Join us in Part 8 of the 'Process Integration' Microcredential series, focussing on reducing the number of units through energy relaxation. The 3-hour video course, which includes a working session and an assignment, covers the energy relaxation technique that can be used to design heat exchange networks that achieve the minimum number of heat exchanger units by breaking the loop.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".

REDUCING THE NUMBER OF UNITS THROUGH RELAXATION  
TECHNIQUE**Course Synopsis**

The 'Process Integration' Microcredential series is particularly beneficial for industries that are highly energy-intensive and reliant on thermal energy, as it can help them reduce their energy consumption, resource usage, and emissions. This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, chemical and energy engineering students that would like to learn Heat Pinch Analysis technique. While there are no hard prerequisites for this course, learners with basic knowledge of chemical industry processes, mass and energy balance will find it easier to understand.

This is Part 8 of the 'Process Integration' Microcredential series, focussing on reducing the number of units through energy relaxation. The 3-hour video course, which includes a working session and an assignment, covers the energy relaxation technique that can be used to design heat exchange networks that achieve the minimum number of heat exchanger units by breaking the loop.

**Course Learning Outcome**

- ✓ Design a heat exchanger network with a minimum number of units.

**Credit Hours**

- ✓ 3 Hours

**Pre-requisite**

- ✓ Some background in mass and energy balance and chemical industry

**Course Mode**

- ✓ Online

**Credit Transfer**

- ✓ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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# Process Integration: The Minimum Network Area Energy and Capital Optimisation

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM150**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3pPj0qW>



This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, and chemical and energy engineering students that would like to learn the Heat Pinch Analysis technique.

Join us in Part 9 of the 'Process Integration' Microcredential series, focussing on minimum network area, energy and capital cost optimisation. The 3-hour video course, which includes an assignment, evaluates the economics of the heat exchanger network to know if it is economically feasible.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The 'Process Integration' Microcredential series is particularly beneficial for industries that are highly energy-intensive and reliant on thermal energy, as it can help them reduce their energy consumption, resource usage, and emissions. This course is aimed at energy consultants, process and utility engineers, energy managers, HSE engineers, plant designers, site managers, chemical and energy engineering students that would like to learn Heat Pinch Analysis technique. While there are no hard prerequisites for this course, learners with basic knowledge of chemical industry processes, mass and energy balance will find it easier to understand.

This is Part 9 of the 'Process Integration' Microcredential series, focussing on minimum network area, energy and capital cost optimisation. The 3-hour video course, which includes an assignment, evaluates the economics of the heat exchanger network to know if it is economically feasible. In this course, participants will learn the method to determine the heat exchanger capital and operating cost, as well as payback period after completing the heat exchanger network design in Heat Pinch Analysis. The course also explains how to determine the optimal minimum temperature difference.



## Course Learning Outcome

- ☒ Evaluate the economics of the heat exchanger network.



## Credit Hours

- ☒ 3 Hours



## Pre-requisite

- ☒ Some background in mass and energy balance and chemical industry



## Course Mode

- ☒ Online



## Credit Transfer

- ☒ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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# Process Integration: Assessment

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

**COST:**

**RM500**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/46RFQyH>



Ready to take your Process Integration knowledge to the next level? Look no further than MC10: The Process Integration Assessment. This special Micro credential is designed to assess your proficiency in the core concepts of process integration.

MC10 is an essential assessment for candidates applying for credit transfer for Process Integration courses under the UTM Master Undergraduate Program, including MSc. Energy Management and M.Eng (Chemical) programs, as well as undergraduate electives.

In order to enrol for this MC 10, candidates will need to obtain Digital Badges for MC1 to MC9 of the Process Integration MC Series as pre-requisites.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

'MC10: The Process Integration Assessment' is a special Micro credential under the Process Integration Micro Credential Series.

This MC is the essential assessment for candidates applying credit transfer for Process Integration equivalent course under the UTM Master Undergraduate Program: MSc. Energy Management, M.Eng (Chemical) and undergraduate elective.

In order to enrol for this MC 10, candidates will need to obtain Digital Badges for MC1 to MC9 of the Process Integration MC Series as pre-requisites.

The assessment is divided into four parts. The first part will involve solving an industrial case study project that will require candidates to apply the knowledge learned in MC1 to MC9. Candidates will then need to submit a project report and do a live online presentation to complete this part. In the second part, candidates are required to perform literature review of other resource integration techniques and come up with a peer teaching video and an excel calculation file. In the final two parts candidates are required to take an online Test and a Final Exam at assigned dates.



## Course Learning Outcome

- ✓ Review state-of-the art resource recovery process integration methods and its application.
- ✓ Evaluate and complete a process integration industrial case study.
- ✓ Reproduce a resource integration calculation by using excel.
- ✓ Test their knowledge in basic process integration application.



## Credit Hours

- ✓ 15 Hours



## Pre-requisite

- ✓ Some background in mass and energy balance and chemical industry



## Course Mode

- ✓ Online



## Credit Transfer

- ✓ Master in Energy Management – MSc. Energy Management

Website: <https://fkt.utm.my/msc-energy-management-2/>

Subject: Energy Integration and Resource Conservation (METE1233)

\*Requirement for transfer credit:

1. Learners need to complete Process Integration Series MC#1 to MC#10, with Digital Badges. Submit the proof and the credit transfer form during your registration to UTM Master of Science (MSc.) Energy Management.

\*Credit transfer fees may apply.



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# Non-Destructive Testing– Ultrasonic Inspection

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3FD5pHI>

**COST:**

**RM100**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Eager for more? We've got you covered! Unearth the laws and standards related to Ultrasonic methods, and understand application criteria that are significant for specific requirements.

Additionally, this course guarantees that you learn a great deal about ethics, job safety, and key ideas like metallurgical processes and flaws.

So why wait? Explore the intriguing world of ultrasonic inspection and non-destructive testing.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 7-hour long project-based course, you will learn the basics of Ultrasonic Inspections. This will be followed by discussions of their physical principles and general techniques used. Specific application techniques based on all of the methods mentioned will be discussed in further details. The discussion will focus on parameters affecting the outcome of the ultrasonic method. The codes and standards and their application to Ultrasonic methods will be discussed. Acceptance criteria applicable to specific requirements will also be discussed. Participants will also be exposed to the safety aspects in Non-Destructive Testing including work safety, work ethics, metallurgical processes & defects. There are no hard prerequisites and any competent computer user should be able to complete the project successfully.



## Course Learning Outcome

- ☒ Identify the principles of ultrasonic inspection methods.
- ☒ Differentiate the different methods for ultrasonic inspection.
- ☒ Evaluate the ultrasonic data using echodynamics pattern.



## Pre-requisite

- ☒ No credit transfer for this course



## Course Duration

- ☒ 7 Hours



## Course Mode

- ☒ Online



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# Kursus Pengaturcaraan PHP Tahap Lanjutan

**SIJIL:**

**Ada**

**IMBAS DI SINI UNTUK  
KETERANGAN LANJUT**



**HARGA  
LENCANA:**

**RM10**

<https://bit.ly/3tUb0Xp>

Kursus ini bertujuan untuk memperluaskan pengetahuan anda dalam penggunaan PHP untuk membangunkan laman web yang lebih dinamik dan cekap.

Kursus ini berlangsung selama 2 hari, anda akan mempelajari bagaimana membina pangkalan data hubungan dengan menggunakan SQL untuk menyelesaikan masalah. Anda juga akan belajar menggunakan Bahasa Penskripan Pelayan (server scripting language).

Selain itu, anda juga akan diajar bagaimana untuk menyediakan laporan pangkalan data selain untuk menyelesaikan ralat-ralat yang biasa didapati semasa proses pengkodan. Anda juga akan didedahkan dengan konsep asas dalam pengaturcaraan Javascript.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp Sahaja)".



## Course Synopsis

Dalam kursus selama 2 hari ini, anda akan mempelajari bagaimana membina pangkalan data hubungan dengan menggunakan SQL untuk menyelesaikan masalah. Anda juga akan belajar menggunakan Bahasa Penskripan Pelayan (server scripting language) untuk membangunkan laman web yang unik bagi setiap pengguna. Selain itu, anda juga akan diajar bagaimana untuk menyediakan laporan pangkalan data selain untuk menyelesaikan ralat-ralat yang biasa didapati semasa proses pengkodan. Anda juga akan didedahkan dengan konsep asas dalam pengaturcaraan Javascript.



## Hasil Pembelajaran Kursus

- ✓ Membina Pangkalan Data menggunakan perisian phpMyAdmin.
- ✓ Menulis kod php lanjutan.
- ✓ Meningkatkan kecekapan pemprosesan data menggunakan AJAX.
- ✓ Menambah aspek interaktif ke dalam bahasa pengaturcaraan yang di bina.
- ✓ Menghasilkan Laporan dan Menyelesaikan masalah berkaitan syntax pengaturcaraan.



## Jam Kredit

- ✓ 48 Jam



## Pre-requisite

- ✓ Menguasai silabus Sains Komputer Tingkatan 4 dan Tingkatan 5 mengikut Dokumen Standard Kurikulum Pelajaran Kementerian Pelajaran Malaysia.
- ✓ Mempunyai kemahiran asas bahasa pengaturcaraan



## Course Mode

- ✓ Blended



## Collaborations

- ✓ Jabatan Pendidikan Negeri Johor (JPNJ) dan Institut Pendidikan Kampus Temenggung Ibrahim (IPGTI)



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# Differentiation and its Applications 1

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/49bzGe6>

**COST:**

**RM50**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Did you know differentiation is used in real life too? This course will show you plenty of practical applications that exist around you every day.

And it doesn't stop there. You'll also learn how to differentiate functions using the MATLAB software. If you're not familiar with MATLAB, it's a super useful tool for data analysis, building models, and visualizing data.

This course is great starting point for future Engineering Mathematics studies, especially if you're interested in advanced differentiation. Don't worry if you're not math whiz - there are no hard prerequisites. As long as you can use a computer, you're good to go!

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-1987971621 (WhatsApp only)".



## Course Synopsis

In this 5-hour course, you will learn the basics of differentiation for algebraic and some transcendental functions. The applications of differentiation in real life are also covered in this course. You will also learn how to differentiate functions using Matlab software. MATLAB is a programming and numeric computing platform that are used to analyze data, develop algorithms, create models, and visualize data. This course is aimed at learners who will learn advanced differentiation in Engineering Mathematics course. There are no hard prerequisites, and any competent computer user should be able to complete the course successfully.



## Course Learning Outcome

- ☒ Solve the differentiation of algebraic and some transcendental functions.
- ☒ Solve the real life application using differentiation.
- ☒ Solve differentiation using Matlab.



## Pre-requisite

- ☒ Minimum SPM level Additional Mathematics.



## Course Duration

- ☒ 5 Hours



## Course Mode

- ☒ Online



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**MC** *Micro*  
Credentials

# 5G Technology Fundamentals

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/45QEh2o>

**PRICE:**

**Class of 2025 Batch 5: RM80**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Are you curious about the evolution of mobile communication technology? Our online course on 5G Technology Fundamentals is intended for engineers, researchers, and students who want to learn more about this dynamic sector.

Our 5G technology fundamentals course offers a comparative review of 2G, 3G, and 4G systems, giving you a thorough grasp of how 5G is altering the industry. The course also discusses crucial concepts such as the worldwide 5G standard - IMT-2020 - and the various frequencies used in the 5G spectrum.

The course also covers essential topics like 5G multiple access and 5G backhaul, allowing you to learn about the many approaches used to deliver high-speed, low-latency connections.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-2007971621 (WhatsApp only)".



## Course Synopsis

This course is aimed for engineers, researchers or students who would like to learn the evolution of mobile communication technology. In this online course, you will learn the fundamentals of 5G technology. The comparisons of the underlying technology from the 2G, 3G, 4G and 5G systems are also discussed. We introduce the IMT-2020 for the 5G standard and also the 5G spectrum employed across the globe. This course also highlights the 5G radio access networks including the new radio as well as the core networks. We also discuss the 5G multiple access and also the 5G backhaul. The prerequisite is to have a basic wireless communication knowledge.



## Course Learning Outcome

- ✓ Define 5G Standardisation in IMT-2020 and its Spectrum.
- ✓ Explain High Level Architecture from 2G to 5G.
- ✓ Explain 5G New Radio.
- ✓ Explain 5G Backhaul and Core Networks.



## Pre-requisite

- ✓ Basic Telecommunication



## Course Duration

- ✓ 2 Hours



## Course Mode

- ✓ Online



## Target Audience

- ✓ Telecom network engineers, Test Engineers, Researchers and Students.



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# Azolla: Sumber Baja Alternatif

**IMBAS DI SINI UNTUK  
KETERANGAN LANJUT**



<https://bit.ly/49hgyLV>

**HARGA:** **RM40**

**DURASI  
KELAS:** **Fleksibel**

**SIJIL:** **Ada**



Kini, anda berpeluang mempelajari kaedah penyediaan biobaja Azolla yang terbukti berkesan melalui kursus berasaskan projek selama 2 jam ini. Dalam kursus ini, anda akan didekahkan dengan cara membiak tumbuhan akuatik ini dengan menggunakan sumber baja hijau yang inovatif.

Kursus ini khusus ditawarkan kepada peserta yang berminat menggunakan bahan organik sebagai asas baja dan mengurangkan penggunaan bahan kimia dalam amalan ladang. Tanpa memerlukan prasyarat yang sukar, kursus ini terbuka kepada semua pengamal pertanian yang ingin mempelajari asas biobaja dengan berjaya.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp Sahaja)".



## Sinopsis Kursus

Dalam kursus berasaskan projek selama 2 jam ini, anda akan mempelajari penyediaan asas biobaja Azolla. Kami akan menjalankan kursus ini dengan membiak tumbuhan akuatik dan menggunakannya sebagai baja hijau. Biobaja Azolla boleh menjadi alternatif baharu sumber nitrogen. Anda boleh belajar cara merumuskan biobaja dengan menggunakan Azolla. Kursus ini bertujuan untuk peserta yang ingin menggunakan tumbuhan organik sebagai bahan asas baja dan mengurangkan penggunaan bahan kimia dalam amalan ladang. Tiada prasyarat yang sukar, dan mana-mana pengamal pertanian yang cekap dan sesiapa sahaja yang ingin mengetahui tentang biobaja asas seharusnya dapat mengikuti projek ini dengan jayanya.



## Hasil Pembelajaran Kursus

- ✓ Menerangkan berkaitan biobaja.
- ✓ Menerangkan kaedah penghasilan Azolla.
- ✓ Menghasilkan biobaja daripada Azolla.



## Jam Kredit

- ✓ 2 Jam



## Pra-syarat

- ✓ Pengetahuan asas tentang baja, pengurusan penanaman.



## Mod Kursus

- ✓ Bersemuka (Face to Face)



## Sasaran

- ✓ Lulusan sekolah, lepasan baru, pekerja pertengahan kerjaya, pengamal pertanian.



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# Asas Pensijilan myGAP

**IMBAS DI SINI UNTUK  
KETERANGAN LANJUT**



<https://bit.ly/49d1izo>

**HARGA:** **RM50**

**DURASI  
KELAS:**

**Fleksibel**

**SIJIL:**

**Ada**

 Apa itu myGAP? myGAP (Malaysia Good Agricultural Practice/Skim Amalan Pertanian Baik Malaysia) adalah satu skim pensijilan komprehensif yang menggantikan Skim Amalan Ladang Baik Malaysia (SALM) pada tahun 2002 berpandukan Malaysian Standard MS 1784:2005 Crop Commodities – Good Agricultural Practice (GAP).

Kursus ini diadakan secara fizikal selama 2 hari. Selain itu, kursus ini akan memberi anda peluang untuk mengkaji dan berkongsi pengalaman sebenar dari Ladang Penyelidikan ICA UTM Kampus Pagoh dalam mendapatkan dan mematuhi pensijilan myGAP. Anda akan belajar dari pakar industri yang berpengalaman dan mendapatkan panduan praktikal untuk melaksanakan pensijilan myGAP di ladang anda.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp Sahaja)".



## Course Synopsis

Dalam kursus fizikal selama 2 hari ini, para peserta akan mempelajari asas elemen dan prosedur dalam pensijilan myGAP. Kursus ini akan melibatkan kajian dan perkongsian pengalaman sebenar Ladang Penyelidikan ICA UTM Kampus Pagoh dalam mendapatkan dan mematuhi pensijilan myGAP. myGAP (Malaysia Good Agricultural Practice/Skim Amalan Pertanian Baik Malaysia) merupakan satu skim pensijilan yang menggantikan Skim Amalan Ladang Baik Malaysia (SALM) pada tahun 2002 berpandukan Malaysian Standard MS 1784:2005 Crop Commodities – Good Agricultural Practice (GAP). myGAP merupakan skim pensijilan komprehensif yang mengiktiraf ladang yang mengamalkan amalan pertanian yang baik dengan konsep pemeliharaan alam sekitar, menjamin kebajikan dan keselamatan pekerja bagi menghasilkan produk segar yang berkualiti dan selamat dimakan. Kursus ini ditujukan kepada individu, syarikat dan agensi yang berhasrat untuk memohon pensijilan myGAP. Tiada prasyarat sebelum kursus namun peserta harus mempunyai pemilikan yang sah dari segi undang-undang ke atas tanah yang diusahakan, ladang telah mula bertanam dan mengeluarkan hasil, dan hasil keluaran bertujuan untuk pasaran domestik atau eksport.



## Hasil Pembelajaran Kursus

- ✓ Menghuraikan asas elemen dan prosedur myGAP berpandukan piawaian Malaysian Standard MS 1784:2005 Crop Commodities – Good Agricultural Practice (GAP).
- ✓ Menerapkan amalan pertanian baik dalam pelbagai aspek pengurusan ladang.
- ✓ Mengemukakan permohonan pensijilan myGAP kepada Pejabat Pertanian Daerah bagi tujuan pra-audit.



## Jam Kredit

- ✓ 16 Jam (2 Hari)



## Pra-syarat

- ✓ Tiada



## Mod Kursus

- ✓ Bersemuka (Face to Face)



## Sasaran

- ✓ Individu, syarikat dan agensi yang berhasrat untuk memohon pensijilan myGAP melalui Pejabat Pertanian Daerah masing-masing.



## Kerjasama

- ✓ Rakan strategik utama adalah Pejabat Pertanian Daerah Muar dan Tangkak. Tiada MoA setakat ini namun pelbagai program telah dijalankan secara bersama.



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**MC** *Micro*  
Credentials

# Introduction to Business

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/40d0yq5>

**COST:**

**Public: RM 500**

**AHIBS's MBA/DBA students: RM 250**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

This course is ideal for those who wish to gain valuable information and abilities in the exciting field of business studies.

You will be introduced to essential management concepts that are critical for company success during this course. From leadership and resource management to organisational structure and workplace communication, you will grasp the fundamental concepts that drive efficient and profitable businesses.

This course will also cover basic accounting tasks, preparing you to manage corporate finances. Prepare to embark on an exciting educational journey that will lead to a successful career in the fast-paced world of business.

206 "If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

The course serves as an introductory course that prepares students to gain knowledge and skills related to business studies. In this course, students will be introduced to essential management concepts such as leadership, managing resources, organization structure, and workplace communication. The students will also learn on basic accounting functions, including managing business finance.



## Course Learning Outcome

- ☒ Apply the managerial function in organisational business environment.
- ☒ Integrate contemporary issues in managing organization and human behaviour.
- ☒ Display competencies in presenting current global organizational and business trends.



## Pre-requisite

- ☒ None



## Course Duration

- ☒ 12 Hours



## Course Mode

- ☒ Online



## Target Audience

- ☒ Students, Working Adults



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Credentials

# Mesh Refinement Study for CFD

SCAN HERE TO  
FIND OUT MORE



**COST:**

**RM49**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**

<https://bit.ly/3uK7a3J>



Ready to elevate your CFD skills?

Our Mesh Refinement Study for CFD course is tailored for engineers and postgraduates, offering advanced numerical simulation techniques to set you apart.

Say goodbye to hefty computational loads! Learn to optimize mesh refinement effectively and minimize numerical errors, ensuring precision in your simulations.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this course, you will learn the advanced technique of numerical simulation specifically designed for engineers and postgraduates to differentiate themselves from the beginners. You will learn how to perform mesh refinement study using an advanced method. This technique is significant to avoid using huge computational loads as compared to other conventional methods. This technique is not only able to find the optimum mesh size but can correlate with the extrapolated error by comparing with ideal mesh size. In other words, this method can quantify the numerical error until you achieve desired acceptable limit. Besides, you will learn how to select the right turbulence models so that you can further minimize discretization errors to the minimum. Apart from technical perspective, you will be equipped with a professional way to present your result or finding using the right contour plots and line graph. This skill will help you produce a professional and impressive journal, conference, and dissertation report that is a way better than the beginner. This course is aimed at intermediate learners of numerical simulation to advance their skills and technique with data analysis. I am sure, you will be confident once you have all these skills and knowledge to apply right after taking this course. There are no hard prerequisites, and any competent computer user should be able to complete the project successfully.



## Course Learning Outcome

- ✓ Explain the concept of discretization errors and perform mesh refinement study.
- ✓ Demonstrate how to select the right turbulence models for CFD study comparing with real data.
- ✓ Understand 2 common techniques to validate your numerical CFD data.
- ✓ Present the professional way to select the right contour plot result and line graph.



## Course Mode

- ✓ Online



## Target Audience

- ✓ Undergraduate (FYP), Postgraduate, Researcher, and R&D Engineer



## Pre-requisite

- ✓ Programming, Fluid Mechanics, Computational Fluid Dynamics(CFD), Numerical Simulation



## Course Duration

- ✓ 9 Hours 12 Minutes



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# Kursus Kecerdasan Buatan (AI) dalam Pendidikan

**HARGA:**

**Percuma**

**IMBAS DI SINI UNTUK  
KETERANGAN LANJUT**



**DURASI KURSUS:**

**Fleksibel**

**SIJIL:**

**Ada**

<https://rb.gy/ljamp0>



Kursus Kecerdasan Buatan (AI) dalam Pendidikan direka khas untuk pendidik dan pelajar yang ingin memanfaatkan teknologi canggih dalam pembelajaran. Melalui tiga modul komprehensif, anda akan didedahkan kepada konsep asas AI, penggunaan AI dalam pendidikan, dan aplikasi AI yang praktikal.

Bayangkan anda mampu mengintegrasikan teknologi AI dalam bilik darjah, meningkatkan pengalaman pembelajaran dan pengajaran anda! Selain penerangan teori, kursus ini juga menawarkan demonstrasi teknikal untuk memastikan anda benar-benar faham dan boleh mengaplikasikannya. Anda juga akan mempelajari tentang isu etika yang berkaitan, memastikan penggunaan AI anda sentiasa beretika dan bertanggungjawab.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm.my](mailto:utm-mooc@utm.my) atau 012-7971621 (WhatsApp sahaja)".



## Sinopsis Kursus

Kursus Kecerdasan Buatan (AI) dalam Pendidikan dibangunkan untuk memberi pendedahan kepada pendidik dan pelajar dalam menggunakan teknologi ini bagi pembelajaran dan pengajaran. Ia mengandungi tiga modul iaitu Pengenalan kepada Kecerdasan Buatan, Penggunaan Kecerdasan Buatan dalam Pendidikan, dan Aplikasi Kecerdasan Buatan dalam Pendidikan. Melalui modul ini peserta dapat mengenalpasti penggunaan kecerdasan buatan dalam pendidikan, menggunakan kecerdasan buatan dalam pendidikan secara beretika dan mengaplikasi penggunaan kecerdasan buatan dalam pendidikan. Selain penerangan secara teori melalui video pembelajaran, peserta juga akan didedahkan dengan demonstrasi teknikal bagi penggunaan beberapa aplikasi berdasarkan kecerdasan buatan dalam pendidikan. Di akhir kursus ini, peserta dapat memahami serta menggunakan kecerdasan buatan dalam pendidikan secara beretika



## Hasil Pembelajaran Kursus

- ☒ Mengenalpasti penggunaan kecerdasan buatan dalam pendidikan.
- ☒ Menggunakan kecerdasan buatan dalam pendidikan secara beretika.
- ☒ Mengaplikasi penggunaan kecerdasan buatan dalam pendidikan



## Jam Kredit

- ☒ 5 Jam



## Pra-syarat

- ☒ Tiada.



## Mod Kursus

- ☒ Dalam Talian (Online)



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**MC** *Micro*  
Credentials

# Linear Programming

SCAN HERE TO  
FIND OUT MORE



<http://bit.ly/4fVI4kV>

**COST:**

**RM50**

**COURSE  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Discover the power of linear programming to solve optimization problems!

Master techniques using graphs and Excel Solver, with no prerequisites required. This online course is ideal for undergraduates and postgraduates.

Get certified and enhance your skills for only RM50! Credit transfer is available for selected UTM courses.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 3-hour long course, you will learn the technique of linear programming. We will focus on how to formulate both maximizing and minimizing problems and solve the problems using graphs and Excel Solver. There are no prerequisites needed for this course, and you should be able to complete the course successfully.



## Course Learning Outcome

- ☒ Understand the technique of linear programming.
- ☒ Solve any linear programming problem that has two or more variables by both the corner point and Excel Solver.



## Course Mode

- ☒ Online



## Target Audience

- ☒ Undergraduate
- ☒ Postgraduate



## Pre-requisite

- ☒ None



## Course Duration

- ☒ 3 Hours



## Credit Transfer

- ☒ Decision Modelling FRSB/H 2843
- ☒ Decision Modelling and Analytics MRTE 2613/ Decision Modelling MRSE 2613



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# Regression Analysis

SCAN HERE TO  
FIND OUT MORE



<https://bit.ly/4ga7ATO>

**COST:**

**RM50**

**CLASS  
DURATION:**

**Flexible**

**CERTIFICATION:**

**Yes**



Unlock the secrets of Regression Analysis with our hands-on Micro-Credential course, specially designed for aspiring researchers and professionals like you!

Master the art of developing mathematical equations, forecasts, and prediction lines using Microsoft Excel. This comprehensive 3-hour course is perfect for both undergraduate and postgraduate learners looking to elevate their analytical skills.

Gain the expertise to create regression models and analyze data effectively. No prerequisites are required—just your curiosity and drive to learn. Plus, earn certification and enjoy credit transfer options to boost your academic or career credentials!

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 3-hour long course, you will learn the technique of regression analysis. We will focus on how to develop mathematical equations/forecast/prediction lines using Microsoft Excel. There are no prerequisites needed for this course, and you should be able to complete the course successfully.



## Course Learning Outcome

- ☒ Understand the technique of regression analysis.
- ☒ Develop a mathematical equation/regression model showing how variables are related using regression analysis.



## Course Mode

- ☒ Online



## Target Audience

- ☒ Undergraduate
- ☒ Postgraduate



## Pre-requisite

- ☒ None



## Course Duration

- ☒ 3 Hours



## Credit Transfer

- ☒ Decision Modelling FRSB/H 2843
- ☒ Decision Modelling and Analytics MRTE 2613/ Decision Modelling MRSE 2613



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# Kursus Profesional Perancangan Harta Pusaka

**IMBAS DI SINI UNTUK  
KETERANGAN LANJUT**



<https://bit.ly/3OLlq1x>

**HARGA:** **RM300**

**SIJIL:** **Ada**



**Rancang Masa Depan Anda dengan Bijak!**

Sertai Kursus Profesional Perancangan Harta Pusaka untuk memahami pengurusan harta pusaka yang teratur dan patuh syariah.

Mod pembelajaran blended dan harga hanya RM300, anda akan mempelajari proses pembahagian harta Islam, kontrak perundangan, serta teknik praktikal untuk merancang masa depan keluarga.

"Jika anda berminat untuk mendaftar kursus, sila hubungi kami di [utm-mooc@utm](mailto:utm-mooc@utm). my atau 012-7971621 (WhatsApp Sahaja)".



## Sinopsis Kursus

Kursus Profesional Perancangan Harta Pusaka ini memberikan pemahaman komprehensif kepada peserta tentang aspek-aspek kunci dalam Perancangan Harta Pusaka Islam dan Bukan Islam, termasuk proses Pentadbiran Harta Pusaka Islam dan Bukan Islam, Jenis Harta Pusaka dan Turutan Pusaka Mengikut Prinsip Syariah, serta konsep Faraid, Akta Pembahagian 1958, Wasiat, Hibah, dan Amanah. Dengan fokus pada pengajaran prinsip-prinsip perancangan pusaka yang efisien dan patuh syariah, kursus ini bertujuan untuk meningkatkan profesionalisme dalam merancang harta pusaka, memastikan keberkatan dalam penyelesaian harta pusaka, dan menyediakan peserta dengan pengetahuan dan kemahiran yang diperlukan dalam bidang ini. Kursus ini dijalankan dalam tempoh 16 jam.



## Hasil Pembelajaran Kursus

- ☒ Menerangkan etika dan profesionalisme dalam perancangan harta pusaka.
- ☒ Menerangkan proses pengurusan dan pembahagian harta pusaka.
- ☒ Menjelaskan kontrak-kontrak dalam perancangan harta pusaka.



## Jam Pembelajaran

- ☒ 2 Hari



## Pra-syarat

- ☒ Tiada



## Mod Kursus

- ☒ Pembelajaran Bersepadu (Blended)



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**MC** *Micro*  
Credentials

# Systems Verification with SystemVerilog

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/sys-tem-verification-veril->



Master skill for Systems Verification with SystemVerilog – the essential and verification professionals!

Learn how to design and verify digital systems using SystemVerilog and explore advanced topics like self-checking testbenches and DPC co-simulation.

Gain 14 credit hours, official certification, and practical expertise that you can apply directly to your career. Flexible class schedules make it easier to learn at your pace.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course introduces the SystemVerilog (SV) Hardware Description Language (HDL) for hardware systems design and verification. Fundamentals of SV are first described, followed by basic and advanced constructs including data declaration and definition, operators and expression, parameterization, and memory design. Following this, SV for testbench design is introduced for systems verification. Topics include self-checking testbench, test vectors, and interface construct. The course also covers the C/RTL co-simulation methodology using SystemVerilog DPI-C.



## Course Learning Outcome

- ☒ Design and analyze digital systems specified in SystemVerilog.
- ☒ Write SystemVerilog testbench to verify digital systems.
- ☒ Utilize DPI-C to verify systems specified in C and SystemVerilog.



## Credit Hours

- ☒ 14 Hours



## Pre-requisite

- ☒ Basic knowledge in digital systems



## Course Mode

- ☒ Synchronous



## Credit Transfer

- ☒ MKEL 1283 Hardware and Software Co-Design



## Target Audience

- ☒ Postgraduate students and professionals working in the electrical and electronics industry.



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# Systems Design Optimization with SystemVerilog

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/system-design-optimization>



**Boost Your Digital Design Skills with SystemVerilog!**

Learn how to optimize digital systems, improve performance, and master data pipelining—all in one flexible course.

Stand out by gaining practical skills in RTL system design. Perfect for professionals looking to enhance their expertise.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course introduces digital design optimization techniques for minimizing design timing and area. Topics covered include loop unrolling, flow graph models for performance estimation, and data pipelining. RTL design trade-offs for area and latency are also discussed for serial, concurrent, and serial-concurrent processing datapath. Design optimization using pipelining techniques are described for task and loop pipelining with analysis for performance.



## Course Learning Outcome

- ✓ Optimize digital systems specified in SystemVerilog using graph models.
- ✓ Analyze complex RTL systems in terms of performance, power, and area.
- ✓ Utilize data pipelining techniques to optimize RTL systems specified in SystemVerilog.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ Basic knowledge in digital systems



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL 1283 Hardware and Software Co-Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry.



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Credentials

# Systems Design with High-level Synthesis

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/high-level-synthesis>

**Revolutionize Your Hardware Systems Design Skills!**



Discover the power of High-Level Synthesis in this cutting-edge course designed for hardware enthusiasts and professionals. Learn C-to-RTL synthesis, testbench design, and optimization techniques for practical real-world applications.

Stand out in the competitive tech industry by mastering advanced topics like loop unrolling, pipeline architecture, and algorithm synthesis. Gain hands-on experience with case studies, boosting your expertise and career prospects.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course introduces hardware systems design methodology using High-level synthesis. Basics of the C-synthesis program is explained, followed by the testbench design for verification. Algorithm and interface synthesis are also described with analysis of the generated code. High-level design optimization techniques are covered next for loop unrolling, pipelining, array partitioning, resource, allocation, and latency. The final topic covers practical design case studies for dot-product computation unit, FIR digital filter, and matrix multiplication.



## Course Learning Outcome

- ✓ Synthesize C programs to RTL for hardware implementation.
- ✓ Apply optimization techniques to the C programs for improved RTL design



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ Basic knowledge in digital systems



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL 1283 Hardware and Software Co-Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry.



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**MC** *Micro*  
Credentials

# Chip Layout: Partitioning & FloorPlanning Automation

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/partitioning-placement>



Master chip layout design with ease!

Learn cutting-edge partitioning and floorplanning techniques in this hands-on course. Perfect for advancing your career in electrical engineering!

Perfect for postgraduate students and professionals in electrical and electronics industries

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course introduces hardware systems design methodology using High-level synthesis. Basics of the C-synthesis program is explained, followed by the testbench design for verification. Algorithm and interface synthesis are also described with analysis of the generated code. High-level design optimization techniques are covered next for loop unrolling, pipelining, array partitioning, resource, allocation, and latency. The final topic covers practical design case studies for dot-product computation unit, FIR digital filter, and matrix multiplication.



## Course Learning Outcome

- ✓ Demonstrate fundamental knowledge in physical design.
- ✓ Analyse and apply partitioning and floorplanning techniques in physical design.
- ✓ Utilize optimization techniques relevant to partitioning and / or floorplanning.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ No pre-requisites are required for enrollment, and it is open to all electrical engineering graduates.

However, experience in a programming language, especially C/C++ is beneficial.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL 1273 / MEEH 1273 VLSI Design Automation



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry.



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# Chip Layout: Placement & Routing (I) Automation

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/place-ment-routing-i>



Master the art of chip design! Learn advanced placement and routing automation in our cutting-edge course.

Discover essential techniques like global placement, optimization algorithms, and routing paths that boost chip performance, reduce delays, and improve efficiency.

Gain valuable skills in physical design with real-world tools—perfect for professionals in electronics or students eager to lead innovation.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course focuses on two critical phases of VLSI physical design automation: cell placement and global routing. Participants will learn essential methodologies and algorithms that ensure efficient and optimized chip layout processes. The course begins with cell placement strategies, including global and detailed placement, exploring optimization approaches for reducing wirelength and improving timing. This is followed by an introduction to global routing, covering key algorithms for routing multiple nets across chip regions while considering routing capacity and congestion.



## Course Learning Outcome

- ✓ Demonstrate fundamental knowledge in physical design.
- ✓ Analyse and apply partitioning and floorplanning techniques in physical design.
- ✓ Utilize optimization techniques relevant to partitioning and / or floorplanning.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ No pre-requisites are required for enrollment, and it is open to all electrical engineering graduates.

However, experience in a programming language, especially C/C++ is beneficial.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL 1273 / MEEH 1273 VLSI Design Automation



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry.



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# Chip Layout: Routing (II) Automation to Timing Closure

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/routing-automation-ii>



Enroll in UTM's Chip Layout – Routing (II): Automation to Timing Closure micro-credential course and gain essential VLSI design expertise.

Get hands-on experience with real tools while learning detailed routing, clock tree synthesis (CTS), and static timing analysis (STA).

Perfect for postgraduates and professionals in electrical/electronics. No prior experience needed—just motivation to grow.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course focuses on three integral aspects of VLSI physical design automation: detailed routing, clock tree synthesis (CTS), and static timing analysis (STA). Participants will delve into the detailed routing phase, learning about key methodologies such as channel and switchbox routing. This is followed by a brief introduction to clock tree synthesis, highlighting its role in synchronization and managing clock skew. The course also includes a session on static timing analysis to assess timing violations and ensure design performance. The aim is to equip learners with practical, hands-on skills for the complete backend IC design flow using industrial tools.



## Course Learning Outcome

- ✓ Demonstrate advanced knowledge of detailed routing methodologies, clock tree synthesis and static timing analysis in IC design.

Apply detailed routing and clock tree concepts in IC design

Utilize the knowledge in IC design automation for an integrated IC design project using industrial tools.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ No pre-requisites are required for enrollment, and it is open to all electrical engineering graduates.

However, experience in a programming language, especially C/C++ is beneficial.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL 1273 / MEEH 1273 VLSI Design Automation



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry.



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# Instruction Set Extension and Datapath Design

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/instruction-set>



Boost your tech career! Master modern computer architecture and processor design with this powerful, industry-relevant online micro-credential course.

Discover the inner workings of processors—pipelining, instruction sets, data paths, and performance tuning—taught through hands-on, expert-guided sessions.

Stand out in the electrical and electronics field by mastering advanced CPU design, parallelism, hazard handling, and instruction scheduling.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course introduces the fundamentals of computer architecture focusing on the instruction set architecture and data path design. Fundamentals of processor design, bandwidth, latency and performance are first described. Then, participants are introduced to processor data path design, instruction set encoding, pipelining, hazards including instruction-level parallelism. Participants will learn how to handle hazards and perform loop unrolling for multiple issue processor. The course is conducted as synchronous online learning with a meeting time of 14 hours. The intended audience for this course is postgraduate students and professionals working in the electrical and electronics industry. Students who wish to enrol this course must have fundamental knowledge of the workings of microprocessor-based systems and C programming language. At the end of this course, students will be able to describe the fundamentals of quantitative design and analysis of processor architectures including instruction set architecture, analyse instruction execution in a pipelined processor, handle hazards, analyse multiple issue processors and apply techniques to expose instruction level parallelism and instruction scheduling.



## Course Learning Outcome

- ✓ Describe the fundamentals of quantitative design and analysis of processor architectures.
- ✓ Develop and analyse C code and assembly code targeting the RISC-V instruction set architecture.
- ✓ Describe instruction execution in a pipelined processor and apply techniques to handle hazards.
- ✓ Apply techniques to expose instruction level parallelism and instruction scheduling for multiple issue processors.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ Students who wish to enrol this course must have fundamental knowledge of the workings of microprocessor-based systems and C programming language.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL1183      Advanced      Computer  
Architecture



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry.



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# Memory Architecture

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
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<https://bit.ly/memory-architecture>



Struggling to understand how memory works in modern computers? Discover the secrets behind memory performance in just 14 hours now.

This course unpacks cache memory, parallelism, virtual memory, and system performance, essential knowledge for tech-savvy professionals in electronics and computing.

Master cache design, prediction, blocking, loop unrolling, and more. Gain confidence in analyzing memory systems using real processor-based examples.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course introduces the fundamentals of computer architecture focusing on memory architecture. Fundamentals of memory hierarchy is first described. Then, participants are introduced cache memory and cache performance metrics. This course will also cover virtual memory concepts, instruction level parallelism and data level parallelism (vector, SIMD and GPU architectures). Participants will learn how to design and analyse cache memory. The course is conducted as synchronous online learning with a meeting time of 14 hours. The intended audience for this course is postgraduate students and professionals working in the electrical and electronics industry. Students who wish to enrol this course must have fundamental knowledge of the workings of microprocessor-based systems and C programming language. At the end of this course, students will be able to describe the fundamentals of quantitative design and analysis of cache memory, virtual memory, analyse processors with instruction level parallelism and data level parallelism.



## Course Learning Outcome

- ✓ Design and analyze direct mapped and associative cache.
- ✓ Describe the concepts of way prediction and blocking to optimize memory access.
- ✓ Apply look unrolling and register renaming concepts to expose instruction level parallelism and reduce stalls.
- ✓ Describe data level parallelism techniques and processor performance limits using roofline model.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ Students who wish to enrol this course must have fundamental knowledge of the workings of microprocessor-based systems and C programming language.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL1183      Advanced      Computer  
Architecture



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry.



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# Contemporary Computer Architecture

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/contemporary-computer>



Unlock the power behind modern processors. Dive into the core of today's computing with our Contemporary Computer Architecture course.

Explore multithreading, MIMD, cache coherency, synchronization, and protocols that power high-performance systems in real-world electronics applications.

Master thread-level and request-level parallelism, warehouse-scale computers, and domain-specific architectures in just 14 hours of online learning.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course introduces the fundamentals of computer architecture focusing on contemporary computer architecture. First, students are introduced to multithreading, simultaneous multi-threading and MIMD. Issues such as cache coherency is then introduced. Concepts of synchronization, locks, snoopy protocol and directory protocol are covered. Then participants are introduced to request level parallelism, and warehouse scale computers. Finally, this course will also cover domain specific architectures. The course is conducted as synchronous online learning with a meeting time of 14 hours. The intended audience for this course is postgraduate students and professionals working in the electrical and electronics industry. Students who wish to enrol this course must have fundamental knowledge of the workings of microprocessor-based systems and C programming language. At the end of this course, students will be able to describe the fundamentals of thread level parallelism, request level parallelism and domain specific architectures.



## Course Learning Outcome

- ✓ Describe thread level parallelism, and cache coherency
- ✓ Describe request level parallelism and warehouse scale computers.
- ✓ Analyse applications and propose suitable domain specific architectures



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ Students who wish to enrol this course must have fundamental knowledge of the workings of microprocessor-based systems and C programming language.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL1183      Advanced      Computer  
Architecture



## Target Audience

- ✓ Postgraduate students and  
professionals working in the  
electrical and electronics industry.



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# Introduction to Modern Embedded System

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

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<https://bit.ly/mod-ern-embedded>



Curious about how modern gadgets work? Discover the brains behind smart devices through our engaging embedded systems micro-credential course today.

Learn binary, hexadecimal, floating-point math, and digital operations while mastering ARM-based architecture, especially the advanced Cortex-M4 processor family.

Through lectures, activities, and projects, you'll understand registers, memory maps, bit-banding, and the load-store mechanism in real scenarios.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course provides a foundational understanding of digital systems, microprocessor fundamentals, and ARM-based processor architecture, focusing on the Cortex-M4 series. Over 12 to 14 hours, through blended learning (lectures, in-class activities, and project-based assignments), learners will explore key topics, such as binary and hexadecimal number representations, floating-point and fixed-point numbers, and digital arithmetic operations. The course also covers processor architecture and organization, load-store mechanism, ARM Cortex series, and ARM Cortex-M architecture in detail (that includes registers set, memory maps, and bit-banding). This course is aimed at learners who are looking to enhance their expertise in ARM-based embedded systems.



## Course Learning Outcome

- ✓ Describe thread level parallelism, and cache coherency
- ✓ Describe request level parallelism and warehouse scale computers.
- ✓ Analyse applications and propose suitable domain specific architectures



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ Basic knowledge of digital system and microprocessor



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEH 1123 Advanced Microprocessor System



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# ARM Architecture & Programming - Part 1

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



[https://bit.ly/architec-  
ture-programming](https://bit.ly/architecture-programming)



Ever wondered how smart devices work? Learn ARM Cortex M assembly and uncover the foundation of modern embedded systems today.

Explore ALU operations, memory access, stack usage, and subroutines. Gain hands-on experience writing, executing, and debugging low level assembly code.

Perfect for learners eager to enhance embedded system skills. Master efficient coding, optimize performance, and build smarter microcontroller based applications.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course provides a fundamental understanding of ARM Cortex-M assembly language programming, covering essential topics such as the ARM instruction set, ALU operations, memory access operations, stack operations, program control, and subroutines. Delivered through lectures, hands-on, assignments, and assessments, students will learn to write and execute assembly programs, debug code, perform efficient memory access, manage stack operations, and implement modular programming with subroutines. By engaging in practical exercises, they will develop skills in low-level programming, performance optimization, and embedded system development. This course is aimed at learners who are looking to enhance their expertise in embedded system design and ARM-based microcontroller programming.



## Course Learning Outcome

- ✓ Understand and utilize the ARM instruction set.
- ✓ Perform ALU operations for arithmetic and logical processing
- ✓ Implement memory access operations for efficient data handling.
- ✓ Apply program control techniques and manage subroutines for modular programming.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ Basic knowledge of digital system and microprocessor



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEH 1123 Advanced Microprocessor System



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# ARM Architecture & Programming – Part 2

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/architecture-part-2>



Boost your skills with STM32 ARM C programming! Learn essential techniques to control hardware and build powerful embedded systems projects.

Master GPIO programming, interrupt handling, and serial communication. Work with LEDs, switches, buttons, and seven-segment displays in real-world applications.

Gain hands-on experience through labs and projects. Learn UART, SPI, and I2C using polling and interrupt-based data transmission methods.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course provides a comprehensive introduction to STM32 ARM C programming, covering GPIO programming, interrupt handling and serial communication. Students will learn to configure and control STM32 GPIOs for input and output operations, implement pull-up and pull-down resistors, and interact with peripherals like LEDs, seven segments, switches, buttons, and etc. The course also explores interrupt programming, including NVIC, external and internal interrupts, and writing efficient interrupt service routines (ISRs). Additionally, students will gain hands-on experience with serial programming, configuring UART, SPI, and I2C for data transmission and reception using both polling and interrupt-based methods. Through lectures, practical lab exercises, and projects, students will develop skills in low-level peripheral control, embedded C programming, and debugging. By the end of the course, participants will be able to write efficient STM32 programs, handle real-time events, and implement reliable communication interfaces. This course is ideal for students, engineers, and embedded system enthusiasts looking to build expertise in STM32 microcontroller programming.



## Course Learning Outcome

- ✓ Understand and utilize the ARM instruction set.
- ✓ Perform ALU operations for arithmetic and logical processing
- ✓ Implement memory access operations for efficient data handling.

Apply program control techniques and manage subroutines for modular programming.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ Basic knowledge of digital system and microprocessor



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEH 1123 Advanced Microprocessor System



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# Digital Circuit Modeling Using Hardware Description Language

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/digital-circuit>



Curious about how digital systems work? Learn to design them with ease using Hardware Description Language (HDL) in this course.

In just 14 hours, master Verilog, modeling styles, logic design, memory systems, and testbenches. No prior experience is required.

Imagine confidently building and verifying circuits. Gain practical skills for career growth in electronics, embedded systems, and digital design industries.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 14-hours long course, this micro-credential course introduces the Hardware Description Language (HDL) for hardware systems design and verification. Fundamentals of HDL are first described, followed by basic and advanced constructs including data declaration and definition, operators and expression, parameterization, and memory design. Following this, HDL for testbench design is introduced for systems verification. Topics include basic Verilog modeling styles, parameterization and combinational logic block design with the verification using testbench. There are no hard prerequisites and any participant should be able to complete the course successfully.



## Course Learning Outcome

- ✓ Understand and utilize the ARM instruction set.
- ✓ Perform ALU operations for arithmetic and logical processing
- ✓ Implement memory access operations for efficient data handling.
- ✓ Apply program control techniques and manage subroutines for modular programming.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ No pre-requisite required for students, and all electrical engineering students can enrol in this program. However, experience in programming language, especially Verilog HDL is valuable.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL 1173 Advanced Digital System Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# Register-Transfer Level Modeling of Sequential Circuits

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



[https://bit.ly/model-  
ing-sequential](https://bit.ly/modeling-sequential)



Master the foundation of digital systems by learning Verilog for modeling essential sequential components like registers, counters, and flip-flops.

Explore the internal operations of shift registers and edge-triggered circuits through practical examples and guided RTL design simulations in Verilog.

Unlock the secrets of finite state machines—gain the skills to design, analyze, and implement FSMs for real-world digital applications.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 14-hours long course, this micro-credential course offers an in-depth exploration of advanced digital design using Verilog, focusing on the modeling of sequential logic blocks such as edge-triggered flip-flops, registers, shift registers, and counters, enabling students to understand their functionality and implementation. Additionally, participants will explore the modeling of finite state machines (FSM), covering FSM-based design and analysis to create efficient sequential machines. Other topics include Register Transfer Level (RTL) design concepts, emphasizing RTL operations, timing considerations, and the complete design flow from specification to verification. There are no hard prerequisites and any participant should be able to complete the course successfully.



## Course Learning Outcome

- ✓ Design basic sequential circuits using Verilog code.
- ✓ Model finite state machine in Verilog
- ✓ Utilize RTL design methodology in designing complex digital circuits.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ No pre-requisite required for students, and all electrical engineering students can enrol in this program. However, experience in programming language, especially Verilog HDL is valuable.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL 1173 Advanced Digital System Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# Register-Transfer Level Modeling of Complex Sequential Circuits

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/complex-sequential>



Designing digital systems just got easier! Learn Verilog for complex circuits with hands-on RTL modeling in this powerful course.

Explore real-world RTL projects using FSM and datapath methods. Understand FSM modeling and enhance your Verilog logic circuit skills fast!

Master critical path delay, optimize clock speed, and apply High-Level Synthesis (HLS) using scheduling and data flow graph techniques.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 14-hours long course, this micro-credential course offers a comprehensive exploration of Verilog modeling for complex sequential logic blocks, emphasizing case studies that integrate Register Transfer Level (RTL) designs using both finite state machines (FSM) and datapath (FSM + D) method versus finite state machines (FSM) with datapath (FSMD) method. Participants will engage in detailed projects that illustrate these methods, while also performing performance analyses, including critical path delay and clock speed, to enhance design efficiency. Additionally, the course covers high-level synthesis (HLS) concepts to explore alternative designs, focusing on using data flow graphs, scheduling, and allocation to streamline the design process. The last topic covers RTL design examples that apply these HLS principles. There are no hard prerequisites and any participant should be able to complete the course successfully.



## Course Learning Outcome

- ✓ Construct complex digital circuit using RTL design methodology (FSM + D technique)
- ✓ Construct complex digital circuit using RTL design methodology (FSMD technique)
- ✓ Utilize high level synthesis for exploring design trade-offs and optimization



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ No pre-requisite required for students, and all electrical engineering students can enrol in this program. However, experience in programming language, especially Verilog HDL is valuable.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEL 1173 Advanced Digital System Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# Semiconductor Junction Devices and Electrical Behaviour

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



[https://bit.ly/semicon-  
ductor-junction](https://bit.ly/semicon-<br/>ductor-junction)



Curious about how electronics truly work? Discover the essential building blocks behind modern tech in this focused micro-credential course.

Explore semiconductor materials, charge carriers, and energy band structures—core elements that determine how all electronic devices behave and operate.

Master PN junctions, Schottky diodes, ohmic contacts, and heterojunctions to deeply understand structure, characteristics, and cutting-edge real-world applications.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course provides an in-depth exploration of semiconductor physics and junction device technologies, which form the foundation of modern electronic systems. It covers concepts related to semiconductor materials, charge carriers, and energy band structures, which are crucial for understanding the behavior and operation of semiconductor devices. The course focuses on key semiconductor junctions, including PN junctions, Schottky barrier diodes, metal-to-semiconductor ohmic contacts, and heterojunctions. Participants will gain insights into their structural properties, electrical characteristics, and applications.

At the end of this course, students will be able to describe the physical principles underlying semiconductor materials, including charge carriers, energy band structures, and carrier transport mechanisms. They will be able to analyze the operation of PN junctions, Schottky barrier diodes, metal-to-semiconductor ohmic contacts, and heterojunctions. Additionally, they will be able to evaluate the electrical characteristics, performance limitations, and potential advancements of these semiconductor devices in modern electronic applications.



## Course Learning Outcome

- ✓ Describe the fundamental properties of semiconductor materials, including charge carriers, energy band structures, and carrier transport mechanisms.
- ✓ Analyze the structure, operation, and electrical characteristics of PN junctions, Schottky barrier diodes, metal-semiconductor contacts, and heterojunctions.
- ✓ Evaluate the performance, limitations, and potential advancements of semiconductor junction devices in modern electronic applications.



## Credit Hours

- ✓ 14 Hours



## Course Mode

- ✓ Synchronous



## Pre-requisite

- ✓ No prerequisites are required for students, and all electrical engineering students can enroll in this program. However, experience in electronic devices and semiconductor fundamentals is valuable for a deeper understanding of the course content.



## Credit Transfer

- ✓ MKEL 1113 Nanoelectronic Devices



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# Metal–Oxide– Semiconductor Field– Effect Transistor (MOSFET) Principles and Operation

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/metal-oxide>



Unlock the secrets behind your everyday devices—master how MOSFETs power modern electronics in just 14 hours of learning!

Explore energy bands, depletion effects, and MOS structures with visuals, simulations, and clear explanations from expert instructors in real time.

Gain the confidence to analyze, design, and improve MOSFET-based systems—boosting your knowledge, career prospects, and technical credibility instantly.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only).



## Course Synopsis

This micro-credential course provides a focused exploration of Metal–Oxide–Semiconductor Field-Effect Transistor (MOSFET) principles, essential for modern electronics. It covers energy bands, depletion effects, and two-terminal MOS structures, including energy-band diagrams and work function differences. The course examines MOSFET threshold voltage, flat-band voltage, and capacitance-voltage (C-V) characteristics, with emphasis on ideal behavior and frequency effects. Students will also learn the MOSFET structures, current-voltage relationships, transconductance, and substrate bias effects.

By the end, participants will be able to describe MOSFET operation, analyze semiconductor device behavior, and evaluate performance limitations and advancements in electronic applications. Designed for postgraduate students and professionals, this 14-hour synchronous online course enhances expertise in semiconductor technology.

The course is conducted through synchronous online learning over 14 hours and is designed for postgraduate students and professionals in the electrical and electronics industry.



## Course Learning Outcome

- ✓ Explain the fundamental principles of MOSFET operation, including energy bands, depletion effects, and two-terminal MOS structures.
- ✓ Analyze MOSFET threshold voltage, flat-band voltage, and capacitance-voltage (C-V) characteristics, considering ideal behavior and frequency effects.
- ✓ Evaluate MOSFET performance, including current-voltage relationships, transconductance, and substrate bias effects, in modern electronic applications.



## Credit Hours

- ✓ 14 Hours



## Course Mode

- ✓ Synchronous



## Pre-requisite

- ✓ No prerequisites are required for students, and all electrical engineering students can enroll in this program. However, experience in electronic devices and semiconductor fundamentals is valuable for a deeper understanding of the course content.



## Credit Transfer

- ✓ MKEL 1113 Nanoelectronic Devices



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# Advanced MOSFET Technologies and Nonideal Effects

**COURSE DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO FIND OUT MORE**



<https://bit.ly/3Wn8TGk>



Unlock the secrets of Advanced MOSFET Technologies! Master nonideal effects, short-channel challenges, and scaling issues with expert guidance.

Discover how to solve real semiconductor problems, enhance device reliability, and strengthen your professional edge in electrical and electronics.

Stand out with advanced knowledge, certification, and practical skills. Perfect for postgraduate students and professionals aiming for higher achievement.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This micro-credential course explores Advanced MOSFET Technologies and Nonideal Effects, focusing on the challenges and innovations in modern semiconductor devices. Participants will study transport limitations and nonideal conduction, including subthreshold conduction, channel length modulation, mobility variation, velocity saturation, and ballistic transport. The course also covers scaling effects and short-channel challenges, such as constant-field scaling, threshold voltage approximations, small device geometries, and the impact of short-channel and narrow-channel effects.

Additionally, the course examines breakdown mechanisms and threshold voltage engineering, including breakdown voltage, Lightly Doped Drain (LDD) transistors, and threshold adjustment via ion implantation. It also addresses reliability concerns like radiation effects and hot electron effects, and their impact on device performance and longevity.

By the end of the course, participants will gain advanced knowledge of MOSFET technologies, enabling them to analyze nonideal behaviors, address scaling challenges, and implement solutions to enhance device reliability and performance. Designed for postgraduate students and professionals in the electrical and electronics industry, this course provides essential expertise in advanced semiconductor technologies.



## Course Learning Outcome

- ✓ Analyze nonideal conduction effects in MOSFETs, including subthreshold conduction, channel length modulation, and velocity saturation.
- ✓ Evaluate scaling challenges and short-channel effects in advanced MOSFET technologies, such as constant-field scaling and narrow-channel effects.
- ✓ Assess reliability concerns, including breakdown mechanisms, radiation effects, and hot electron effects, to improve device performance and longevity.



## Credit Hours

- ✓ 14 Hours



## Course Mode

- ✓ Synchronous



## Pre-requisite

- ✓ No prerequisites are required for students, and all electrical engineering students can enroll in this program. However, experience in electronic devices and semiconductor fundamentals is valuable for a deeper understanding of the course content.



## Credit Transfer

- ✓ MKEL 1113 Nanoelectronic Devices



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# Analog CMOS Integrated Circuit Design: Fundamentals

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/4gPJn6l>



Upgrade your expertise with Analog CMOS Integrated Circuit Design: Fundamentals, a 2-day professional course designed for engineers and students.

Explore MOS transistor principles, CMOS circuit analysis, and DC biasing techniques. Gain valuable insights to design efficient, reliable integrated systems.

Achieve certification, earn credit hours, and strengthen your career profile. Practical knowledge and expert guidance make learning impactful and rewarding.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course offers a foundational exploration of analog CMOS circuit design, focusing on the theoretical and practical principles required to analyze and implement key building blocks of analog integrated circuits. Participants will apply the theoretical principles of MOS transistors to CMOS analog design, analyze circuit behavior using both large-signal and small-signal models, and design appropriate biasing circuits to meet analog performance requirements. Through a combination of conceptual learning and practical application, the course equips learners with essential skills for understanding and designing fundamental analog CMOS systems.

At the end of this course, participants will be able to apply the theoretical principles of MOS transistors in the design of CMOS analog circuits. They will be able to analyze analog circuits using large-signal and small-signal CMOS models to predict circuit behavior and performance. Additionally, they will be able to design appropriate DC biasing circuits for analog CMOS applications, selecting suitable techniques to meet given specifications.

The course is conducted through synchronous online learning over 14 hours and is designed for postgraduate students and professionals in the electrical and electronics industry.



## Course Learning Outcome

- ✓ Apply the theoretical principles of MOS transistors in the design of CMOS analog circuits.
- ✓ Analyze analog circuits using large-signal and small-signal CMOS models to predict circuit behavior and performance.
- ✓ Design appropriate DC biasing circuits for analog CMOS applications, selecting suitable techniques to meet given specifications.



## Credit Hours

- ✓ 14 Hours



## Course Mode

- ✓ Synchronous



## Pre-requisite

- ✓ No prerequisites are required for students, and all electrical engineering students can enroll in this program. However, experience in semiconductor fundamentals and basic electrical circuit analysis is valuable for a deeper understanding of the course content.



## Credit Transfer

- ✓ MKEL1193 – Analog CMOS Design
- ✓ MKEC1193 – Advanced Analog CMOS IC Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# Analog CMOS Integrated Circuit Design: CMOS Amplifiers

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/3KwR8lo>



Advance your expertise with Analog CMOS Amplifier Design—a crucial skill driving smartphones, IoT devices, and modern electronic systems.

Through engaging online learning, discover amplifier fundamentals, trade-offs, and real-world performance analysis tailored for engineers and professionals.

Equip yourself with certification and knowledge that set you apart in the competitive electronics industry. Invest smartly in your future.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course focuses on the design and analysis of basic CMOS amplifier circuits commonly used in analog integrated circuit design. Participants will explore single-stage amplifier topologies, including common-source, common-drain (source follower), and common-gate amplifiers, with emphasis on both large-signal and small-signal behavior. Key design techniques, trade-offs, and performance constraints will be examined in depth. The course also introduces frequency response analysis using MOS capacitance models and high-frequency equivalent circuits. Through a problem-solving approach, students will gain the analytical and design skills necessary to evaluate and construct fundamental amplifier circuits in CMOS technology.

At the end of this course, participants will be able to evaluate the performance of single-stage CMOS amplifiers based on large-signal and small-signal analysis. They will be able to select appropriate topologies to enhance circuit performance parameters of CMOS amplifiers. Additionally, they will be able to analyze the frequency response of CMOS amplifiers using small-signal circuits and MOS capacitance approximations for high-frequency behavior.

The course is conducted through synchronous online learning over 14 hours and is designed for postgraduate students and professionals in the electrical and electronics industry.



## Course Learning Outcome

- ✓ Evaluate the performance of single-stage CMOS amplifiers based on large-signal and small-signal analysis.
- ✓ Select appropriate topologies to enhance circuit performance parameters of CMOS amplifiers.
- ✓ Analyze the frequency response of CMOS amplifiers using small-signal circuits and MOS capacitance approximations for high-frequency behavior.



## Credit Hours

- ✓ 14 Hours



## Course Mode

- ✓ Synchronous



## Pre-requisite

- ✓ No prerequisites are required for students, and all electrical engineering students can enroll in this program. However, experience in semiconductor fundamentals and basic electrical circuit analysis is valuable for a deeper understanding of the course content.



## Credit Transfer

- ✓ MKEL1193 – Analog CMOS Design
- ✓ MKEC1193 – Advanced Analog CMOS IC Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# Analog CMOS Integrated Circuit Design: CMOS Op-Amps

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/46HSxhT>



Unlock the secrets of Analog CMOS Integrated Circuit Design! Learn CMOS Op-Amps in just 2 days with expert guidance.

Master amplifier structures, stability considerations, and design trade-offs. Gain practical insights with hands-on learning for real-world electrical engineering challenges.

Boost your career with industry-relevant skills. Learn to evaluate CMOS circuits, design multi-stage amplifiers, and enhance performance through robust techniques.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

This course provides an in-depth exploration of CMOS operational amplifier (op-amp) circuit design, emphasizing differential amplifier structures, multi-stage architectures, and stability considerations. Students will begin by examining the differential approach and its implementation in CMOS using basic telescopic and active current mirror loads. The course then expands into two-stage and advanced op-amp architectures such as cascode and folded cascode designs, focusing on performance analysis and design trade-offs. Finally, participants will study the principles of frequency compensation and system stability, including pole placement, phase margin, and compensation techniques. Through critical analysis and design exercises, participants will develop the skills needed to evaluate and implement robust CMOS op-amp circuits.

At the end of this course, participants will be able to evaluate the impact of differential amplifier topologies in CMOS op-amp designs. They will be able to design multi-stage CMOS op-amps by applying systematic design techniques and balancing performance trade-offs. Additionally, they will be able to evaluate the frequency stability of CMOS op-amp circuits and appropriate compensation techniques to ensure robust performance.

The course is conducted through synchronous online learning over 14 hours and is designed for postgraduate students and professionals in the electrical and electronics industry.



## Course Learning Outcome

- ✓ Evaluate the performance of single-stage CMOS amplifiers based on large-signal and small-signal analysis.
- ✓ Design multi-stage CMOS op-amps by applying systematic design techniques and balancing performance trade-offs.
- ✓ Evaluate the frequency stability of CMOS op-amp circuits and appropriate compensation techniques to ensure robust performance.



## Credit Hours

- ✓ 14 Hours



## Course Mode

- ✓ Synchronous



## Pre-requisite

- ✓ No prerequisites are required for students, and all electrical engineering students can enroll in this program. However, experience in semiconductor fundamentals and basic electrical circuit analysis is valuable for a deeper understanding of the course content.



## Credit Transfer

- ✓ MKEL1193 – Analog CMOS Design
- ✓ MKEC1193 – Advanced Analog CMOS IC Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# VLSI Circuits and Design Part 1: Modeling MOSFET and CMOS Inverter

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

**SCAN HERE TO  
FIND OUT MORE**



<https://bit.ly/48Jg03m>



Ready to explore the future of microelectronics? Master MOSFET and CMOS inverter design with UTM's expert-led VLSI program!

In just 2 days, unlock practical circuit skills, real engineering insights, and a recognized certification to strengthen your expertise.

Stand out in semiconductor industries! This course gives you a competitive edge, credibility, and confidence in advanced circuit design.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 14-hour course, the participants will learn about Very Large-Scale Integration (VLSI) design, with an emphasis on designing circuits to meet certain performance criteria. Important issues in VLSI circuit design are discussed. Metal Oxide Semiconductor (MOS) transistors are reviewed, including their characteristics, structure, operations under different regions, MOSFET current-voltage characteristics, MOSFET scaling: constant field and constant voltage scaling, MOSFET capacitance, switch-level behavior, and current equation. The inverter circuit is studied in detail and features the design of standard logic gates and compound logic gates using transistor configurations. The course will also include the static and dynamic characterization of CMOS inverters to meet timing specifications and determine the power consumption in logic gates, considering the noise margin and threshold voltage of inverters and the propagation delay. There are no hard prerequisites and any participant should be able to complete the course successfully.



## Course Learning Outcome

- ☒ Explain VLSI processing technologies and design issues.
- ☒ Analyze electrical and logical properties of CMOS VLSI circuits.
- ☒ Develop optimized circuits for speed or power requirements.



## Credit Hours

- ☒ 14 Hours



## Pre-requisite

- ☒ No pre-requisite is required for students, and all electrical engineering students can enroll in this program. However, experience in a SPICE simulation is valuable.



## Course Mode

- ☒ Synchronous



## Credit Transfer

- ☒ MKEC 1163/ VLSI Circuits and Design



## Target Audience

- ☒ Postgraduate students and professionals working in the electrical and electronics industry



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# VLSI Circuits and Design Part 2: Design of CMOS Digital Logic Circuits

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

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FIND OUT MORE**



<https://bit.ly/48u56P9>



Step into the world of advanced VLSI design. Learn CMOS digital logic circuits that power today's fastest, most efficient technologies.

This course blends theory with practice—covering Boolean algebra, transistor networks, timing analysis, and optimization techniques essential for high-performance circuits.

Open to students and professionals! Build practical expertise through real design exercises, without prerequisites. Prior SPICE experience adds extra advantage.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 14-hour course, participants will learn about Very Large-Scale Integration (VLSI) circuit design using transistor networks to meet specific performance criteria. The course emphasizes static and dynamic combinational circuits for digital systems, covering fundamental concepts such as logic gates, Boolean algebra, and optimization techniques for power, speed, and area efficiency. Participants will explore CMOS-based combinational circuits, including drawing complementary CMOS networks, identifying logic graphs, determining Euler paths, and drawing stick diagrams, to gain hands-on experience in transistor-level design. In addition, this course covers the principles of ratioed logic design, pass transistor logic, transmission gate, dynamic logic design, and domino logic in high-performance circuits. The course also includes timing analysis, clock distribution, and synchronization techniques to ensure reliable operation in high-speed designs. There are no hard prerequisites, and any participant should be able to complete the course successfully.



## Course Learning Outcome

- ✓ Apply VLSI design principles in static and dynamic CMOS logic design.
- ✓ Analyze Circuit Performance to perform delay analysis on the various circuits.
- ✓ Develop optimized circuits in drawing transistor network diagrams, stick diagrams, and Euler paths.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ No pre-requisite is required for students, and all electrical engineering students can enroll in this program. However, experience in a SPICE simulation is valuable.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEC 1163/ VLSI Circuits and Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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# VLSI Circuits and Design Part 3: Optimization of CMOS Digital Logic Circuits

**COURSE  
DURATION:**

**2 Days**

**CERTIFICATION:**

**Yes**

**COST:**

**RM600**

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<https://bit.ly/3KPAAFi>



Want to master CMOS digital logic circuit optimization? Join a power-packed 2-day course designed for real-world engineering challenges!

Explore interconnects, transistor sizing, and delay analysis. Learn advanced VLSI techniques to boost speed, performance, and energy efficiency.

Gain valuable skills with 14 hours of expert-led training. No prerequisites needed—just your passion for electronics and innovation.

"If you are interested to enroll the course, please contact us at [utm-mooc@utm.my](mailto:utm-mooc@utm.my) or 012-7971621 (WhatsApp only)".



## Course Synopsis

In this 14-hour course, the participants will learn and explore advanced design techniques for optimizing CMOS circuits, focusing on performance, power, and area trade-offs in modern VLSI systems. This course includes interconnect, transistor sizing, logic restructuring, and interconnect optimization to enhance speed and energy efficiency. The logical effort analysis is introduced to explain how to design a fast circuit. Similarly, the effect of input signal transitions on power dissipation is explained. The application of CMOS technology-specific layout rules for proper placement and routing of transistors and interconnects, ensuring manufacturability and reliability, is also implemented. Functional verification, timing analysis, power estimation, and parasitic extraction are discussed to validate circuit behavior under real-world conditions. There are no hard prerequisites, and any participant should be able to complete the course successfully.



## Course Learning Outcome

- ✓ Explain the principles of VLSI design optimization, including interconnect, delay and power.
- ✓ Analyze circuit optimization techniques to improve speed, logical effort, and minimize path delay.
- ✓ Develop VLSI circuits for power optimization, input transition effects, and multiple threshold techniques in VLSI design.



## Credit Hours

- ✓ 14 Hours



## Pre-requisite

- ✓ No pre-requisite is required for students, and all electrical engineering students can enroll in this program. However, experience in a SPICE simulation is valuable.



## Course Mode

- ✓ Synchronous



## Credit Transfer

- ✓ MKEC 1163/ VLSI Circuits and Design



## Target Audience

- ✓ Postgraduate students and professionals working in the electrical and electronics industry



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