



Higher Diploma in Electrical Engineering

Course Highlights

In response to practical needs of professional development, CCE and CEM are decided to launch a higher diploma programme in electrical engineering. Students will learn how to design, configure and program modern power systems as well as sophisticated electronic and computer systems. It also attaches importance on both theories and practices, as it aims for good opportunities for jobs in electrical engineering industry.

On the completion of this programme, the students will be able to:

- Have the ability to think in a critical and evaluative manner and to consider a broad perspective, in order to solve generic technical and engineering problems;
- Perform a range of electrical engineering duties with minimum supervision.

This diploma is built on a broad-based foundation in electrical, electronic and power engineering. Students need to complete six 42-hour courses in part-time evening mode.

Course Details

Application Deadline	<u>2019/09/13</u>
Lecture Date (s) / Time	2019/09/19 — 2019/12/13, Tuesday, Wednesday, Thursday & Friday 19:00 — 22:00 2020/01/06 — 2020/05/20, Monday, Tuesday, Wednesday & Thursday 19:00 — 22:00
Requirement	Please refer to schedule page for details. Equivalent Diploma level with interview and screening
Assessment Method	The assessment is based on assignment and examination
Instructing Language	English, supplemented with Cantonese
Instructing Materials	English teaching materials
Lecture Hours	252
Tuition Fee	MOP24,000
Venue	University of Macau



Payment Information

Application Fee	MOP 100.00 (this fee refund and not included in the DSEJ Continuing Education Scheme, it can be settled by cheque, cashier' s order or VISA/MASTER card)
Payment Method	<ol style="list-style-type: none"> 1. By cheque/cashier' s order, payable to "University of Macau" 2. By VISA/MASTER card (online payment available) 3. By DSEJ Continuing Education Scheme (if applicable), applicant must present a valid Macau ID card for application in person
Documents required	<ol style="list-style-type: none"> 1. Application form 2. 1 copy of ID card/other appropriate identification documents 3. Academic Qualification
Address	The Centre for Continuing Education Ground Floor, BOC Centennial Building, University of Macau, E3, Avenida da Universidade, Taipa, Macau
Office Hours	Mon — Fri 10:00 — 20:00; Sat 10:00-17:00; Sun 10:00-13:00 (Closed on Macao Public Holidays)

【Application will be closed once all seats are filled】

For seat reservation, please fill out the online application form and you will be confirmed by email.

【Alumni and Retired Staff Privilege】Cardholders of "UM Alumni Card" or "Retired Staff Card" can enjoy a 20% discount on tuition fee. Quota for this offer is limited for each course and is available on a first-come-first-served basis. This privilege cannot be used with DSEJ Continuing Education Scheme. CCE reserves the right to make final judgment on the dispute and otherwise in respect of this offer. For any enquiries, please contact us.

Notice

1. Eligibility of DSEJ Continuing Education Scheme: Macao residents who are 15 years old or above, and are beneficiaries of DSEJ Continuing Education Scheme.
2. More information of DSEJ Continuing Education Scheme, please visit DSEJ' s website: www.dsej.gov.mo/pdac/2017/index.php or contact them at Tel: 2842 5199.
3. The Centre reserves the right to amend the course details.
4. The Centre reserves the right to postpone or cancel the course in case of insufficient enrolments. Refund information is available in our website: <https://cce.um.edu.mo/download/>.
5. Certificate: Certificate will be issued to those students who have attended 80% of the entire programme and got a passing grade in the examination of each course. If examination is exempted for the course, attendance certificate will be issued to those students who have attended 80% of the entire programme. If a student who is absent from class and applies for justifiable absence, he/she must provide valid reasons and supporting documents. Medical certificate is required for health reason. Applicant should submit the application form to the Centre within 10 days after the first day of class absence. Applications are subject to the approval of the Centre.
6. For voluntary withdrawal, applicants have to follow the withdrawal regulations of the Centre. More information is available in our website: <https://cce.um.edu.mo/download/>.

Course Description for the Higher Diploma in Electrical Engineering

Power System Analysis (42 hours)

The course provides students with essential knowledge in power systems required for its analysis. It includes per-unit system, line models, application of network matrices techniques, power flow calculation for the steady-state and analysis, power system fault analysis including: symmetrical components, symmetrical faults, and unsymmetrical faults and power system stability by introduction of swing equation.

Numerical Method and Computation (42 hours)

This course is an introduction to the concepts and methods of numerical methods. It covers most major topics in solving nonlinear equation, function interpolation, numerical calculus and linear regression. It is designed to develop the understanding the basic theory and to familiar with operations and Matlab programming of the subject.

Power Quality and Energy Saving (42 hours)

Power Quality and Energy Saving provides student with an overall understanding of power quality and energy saving measures. Topics include power quality terms and definitions, voltage distortion, harmonics and filtering, strategies for improving power quality, power quality monitoring and survey. It also includes the topics of energy efficiency, energy conservation, energy management in buildings and energy audit.

Signals and Systems (42 hours)

Power Quality and Energy Saving provides student with an overall understanding of power quality and energy saving measures. Topics include power quality terms and definitions, voltage distortion, harmonics and filtering, strategies for improving power quality, power quality monitoring and survey. It also includes the topics of energy efficiency, energy conservation, energy management in buildings and energy audit.

Power Electronics (42 hours)

Power electronics deals with the application of solid-state electronics for the control and conversion of electric power. Applications include electronic power supplies, aerospace and vehicular power systems, and renewable energy systems. The course is an introduction to switched-mode power converters. It provides a basic knowledge of circuitry for the control and conversion of electrical power with high efficiency. These converters can change and regulate the voltage, current, or power.

Project (42 hours)

Project will test the ability of the student to think in a critical and evaluative manner and to consider a broad perspective, in order to solve technical and nontechnical problems. Also the knowledge of fundamentals of math and science in electrical and electronics engineering and experience in engineering design will be examined.



Tentative Course Schedule

月份	日期						
2019	日	一	二	三	四	五	六
九月	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30					
十月			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
十一月						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
十二月	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				

月份	日期						
2020	日	一	二	三	四	五	六
一月				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	
二月							1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
三月	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
四月				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
五月						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	31						