Graduate Diploma in Lighting (off-shore) (PH73)

Year offered: 2010  
Admissions: No  
Course duration (external): 4 semesters part-time (Hong Kong)  
Domestic fees (indicative): Off-shore Course  
International Entry: September  
Total credit points: 96  
Standard credit points per part-time semester: 24  
Course coordinator: Associate Professor Ian Cowling  
Campus: City University of Hong Kong

Overview  
The Graduate Diploma in Lighting (PH73) is designed primarily for people working in all areas of the lighting industry and engineers or architects whose work includes some aspects of lighting.

All students in the Graduate Diploma (PH73) will have undertaken the 4 units of the Graduate Certificate in Lighting (PH63), providing an overview of all aspects of lighting, including light measurement, luminaire design, design of lighting installations, sustainability, daylighting and the human aspects associated with providing good lighting.

The Graduate Diploma (PH73) then provides, through electives, the opportunity for some degree of specialisation appropriate to the student's needs and interests.

Finally the Master of Lighting (PH83) provides the opportunity for graduates of the above programs to undertake a Masters in the form of a project with some coursework.

Entry Requirements  
(a) Bachelor level degree in an appropriate field

OR

(b) Successful completion of PH62/PH63 Graduate Certificate in Lighting or equivalent.

Note: Students with relevant experience in the lighting industry or recognised educational qualifications in lighting may be granted credit to a maximum of 36 credit points.

Course Design  
Graduate Diploma students will undertake 24 credit points (two units) of advanced lighting design and applications studies and two other units (24 credit points) which could include at least one unit in Project Management, Project Cost and Risk Management or Quality.

Contact Details  
Course Coordinator  
Associate Professor Ian Cowling  
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Email: i.cowling@qut.edu.au

Course structure - Part-time

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<td>PCZ121 Vision Colour and Photometry</td>
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<td>PCZ124 Lamps and Luminaires</td>
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NOTES: PH73 is offered part-time in a combination of face-to-face lecture/tutorial/practical format, and on-line. Some units will have a computer-design type component and all units will incorporate learning through assignment work, all of which will be incorporated into the assessment program. Except for the fourth semester, the two units offered each semester will be presented sequentially. The face-to-face teaching component will be offered in block form over a weekend, usually on the first weekend of the teaching period assigned to that unit. There will then be a follow-up face-to-face session about three weekends later. In the fourth semester both units will commence at the start of the semester.

Students in the Graduate Diploma in Lighting (PH73) wishing to continue their studies in the Master of Lighting (PH83), on successful completion of 96 credit points, are required to seek admission using an International Student Degree Program Application (F) Form.

Students in the Graduate Diploma in Lighting (PH73) wishing to exit with the Graduate Certificate in Lighting (PH63) are required to submit an Application to Graduate Early with an Approved Exit Course (SRX) Form in their...
is a need to fully understand the issues involved in designing for these applications and to be able to build a design that satisfies the requirements with quality and efficient lighting solutions.

**Credit points:** 12  
**Campus:** City University of Hong Kong

**PCZ124 LAMPS AND LUMINAIRES**
This unit includes the development of light sources, the practical requirements of light sources including tubular fluorescent lamps, various high and low pressure discharge lamps. Practical lamps are discussed in terms of luminous efficacy, spectral output, colour rendering, life, supply requirements, control gear, cost, etc. The unit also addresses the design, manufacture, testing and the provision of data on luminaires methods of light control; the properties of optical systems; refractors; reflectors and diffusers; luminaire control techniques; manufacture of luminaires and auxiliaries; codes and provision of photometric data for indoor and outdoor luminaires; the calculation of utilisation factors; luminaire luminances; computerised testing.

**Corequisite(s):** PCZ121  
**Credit points:** 12  
**Campus:** City University of Hong Kong

**PCZ222 ADVANCED LIGHTING DESIGN**
This unit includes the latest developments in lamp technologies and sources (including LEDs and lasers), lighting in the mesopic range, a review of factors influencing lighting design; discomfort and disability glare; illuminance and glare scale, methods for the assessment of tasks and environments; in-depth studies of colour, form, pattern and space, issues relating to the perception and comprehension of the environment; the practical effects of daylight, introduction to the integration of daylight and electric lighting. This is a very hands-on unit with a large component of computer design work, group discussions and site visits and evaluations.

**Credit points:** 12  
**Campus:** City University of Hong Kong

**Teaching period:** 2010 SUM

**PCZ223 LIGHTING APPLICATIONS**
This unit builds on the material covered in PCN122 and looks in more depth at some of the applications covered in

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**UNIT SYNOPSES**

**PCZ121 VISION COLOUR AND PHOTOMETRY**

This unit includes the following: measurement of luminous flux; luminous intensity; illuminance; luminance; reflectance; transmittance; diffuse surfaces; inverse square law; cosine law; Munsell and CIE Colour System; chromaticity coordinates X, Y, Z, L*A*B*, Luv, correlated colour temperature, colour rendering indices; the integrating sphere; goniophotometry; distribution photometry; graphical representation of photometric data; measuring instruments; accuracy; repeatability; the physiology of the eye and light detection; contrast sensitivity; color vision; adaptation; brightness and lightness; image detection and recognition including edge detection; lightness determination; the association of the characteristics of patterns.

**Credit points:** 12  
**Campus:** City University of Hong Kong

**PCZ122 LIGHTING DESIGN**

This unit includes the following: definition of the visual field; the extension of threshold studies to practical task situations; the evaluation of visual tasks; the development of measures of discomfort and disability glare; illuminance and glare scales; methods for the assessment of tasks and environments; experimental techniques of evaluation. It also includes the perception of colour, form, pattern and space, and issues relating to the perception and comprehension of the environment; aesthetics, perception and emotion; the practical methods available for predicting illuminances from daylight and uniform arrays of luminaires; the prediction of discomfort; appraisals; codes of practice; economics; maintenance; integration of daylight and electric light.

**Credit points:** 12  
**Campus:** City University of Hong Kong

**Teaching period:** 2010 SEM-1

**PCZ123 SUSTAINABILITY AND HUMAN FACTORS**

This unit will not cover all areas of specialised lighting, but rather will concentrate on the more important and general public lighting situations. Topics covered include emergency lighting requirements, road lighting, pedestrian lighting and sports lighting, with particular reference to standards for specialised lighting situations, equipment, required light distributions and calculation and design techniques. There is a need to fully understand the issues involved in designing for these applications and to be able to build a design that satisfies the requirements with quality and efficient lighting solutions.
that unit, namely street lighting and public access lighting, as well as other areas not covered in that unit, including general floodlighting requirements and equipment, light distributions, calculation methods, area floodlighting, building floodlighting, pedestrian lighting, tunnel lighting, vehicle lighting, traffic signals, airport lighting, navigation lighting, display lighting, and advertising.

Credit points: 12    Campus: City University of Hong Kong
Teaching period: 2010 SEM-2

PCZ224 APPLIED LIGHTING

There is no set material for this unit. Students undertake an approved project over a semester on any topic relevant to their interest in lighting. The project may be predominantly a reading course, reviewing, comparing or analysing material on a specific topic, or it may be a practically oriented project involving manufacture, measurement or analysis of a particular lighting product or installation. The project may be taken within the person's place of employment.

Credit points: 12    Campus: City University of Hong Kong