Graduate Certificate in Lighting (on-shore) (PH62)

Year offered: 2011
Admissions: Yes
Course duration (part-time): 2 semesters (1 year) (Internal and External)
Domestic Fees (indicative): 2011: Full fee tuition $7,375 (indicative) per semester
Domestic Entry: July
Total credit points: 48
Standard credit points per part-time semester: 24
Course coordinator: Associate Professor Ian Cowling
Campus: Gardens Point

Course Design
Graduate Certificate students will undertake four units (12 credit points each) covering the perception, specification and measurement of light, lamp and luminaire design, lighting design, sustainability issues and human factors.

Limits on grades of 3
A new policy concerning grades of 3 came into effect from 1 January 2009 (QUT MOPP C/5.2). With effect from this date grades of 3 are no longer considered a conceded or low pass but are classified as a fail grade. Any grades of 3 awarded prior to 1 January 2009 retain the conceded pass status and will be counted for graduation purposes up to the maximum number of grades of 3 permitted for your course. Grades of 3 incurred in units that commence after 1 January 2009 will not count towards your degree. Further information is available on the Student Services website.

Further Information
Course Coordinator

Associate Professor Ian Cowling
Phone: +61 7 3138 2592
Email: i.cowling@qut.edu.au

Course structure - Part-time

Year 1, Semester 2 (July to October)
PCN121 Vision Colour and Photometry
PCN124 Lamps and Luminaires

Year 2, Semester 1 (February to June)
PCN122 Lighting Design
PCN123 Sustainability and Human Factors

NOTES: PH62 is offered part-time comprising a lecture/tutorial format, and where appropriate practical and field work. Some units will have a significant computer-design type component and all units will incorporate learning through assignment work, all of which will be incorporated into the assessment program. Most units in the internal mode will be offered in block format on weekends.

Domestic students in the Graduate Certificate in Lighting (PH62) will be invited, on successful completion of 48 credit points, to continue with studies in the Graduate Diploma in Lighting (PH72), or can enrol directly in Master of Lighting (PH82).

International students wishing to change courses should consult International Student Business Services.

Potential Careers:

UNIT SYNOPSES

PCN121 VISION COLOUR AND PHOTOMETRY
This unit includes the following: measurement of luminous flux; luminous intensity; illuminance; reflectance; transmittance; diffuse surfaces; inverse square law; cosine law; Munsell and CIE Colour System; chromaticity coordinates Yxy, 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; colour 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: Gardens Point  Teaching period: 2011 SEM-2

PCN122 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:** Gardens Point  **Teaching period:** 2011 SEM-1

**PCN123 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.

**Credit points:** 12  **Campus:** Gardens Point  **Teaching period:** 2011 SEM-1

**PCN124 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.

**Credit points:** 12  **Campus:** Gardens Point  **Teaching period:** 2011 SEM-2