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

Year offered: 2010
Admissions: Yes
Course duration (part-time): 2 semesters (1 year) (Internal and External)
Domestic fees (indicative): 2010: Full fee tuition $7,250 (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

Overview
The Graduate Certificate in Lighting (PH62) is designed primarily for people working in all areas of the lighting industry and engineers or architects whose work includes some aspects of lighting.

The Graduate Certificate in Lighting (PH62) provides an overview of all aspects of lighting, including light measurement, lamp properties and luminaire design, design of lighting installations, daylighting and the human factors associated with lighting.

The Graduate Diploma (PH72) then provides, through electives, the opportunity for some degree of specialisation appropriate to the student's needs and interests.

Finally the Master of Lighting (PH82) 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) Demonstrated minimum of 3 years of relevant experience in the lighting industry and successful completion of one or more recognised Introductory Courses in Lighting as determined by the Course Coordinator. (Note: Students entering without a Bachelor degree can only enrol initially in PH62, and must successfully complete this program before they can enrol in PH72 or PH82.)

Note: Students with relevant experience in the lighting industry or recognised educational qualifications in lighting may be granted credit in PH62/PH63 to a maximum of 24 credit points.

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.

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

Course structure - Part-time

<table>
<thead>
<tr>
<th>Year 1, Semester 2 (July to October)</th>
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<tbody>
<tr>
<td>PCN121 Vision Colour and Photometry</td>
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<tr>
<td>PCN124 Lamps and Luminaires</td>
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<table>
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<tr>
<th>Year 2, Semester 1 (February to June)</th>
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<tr>
<td>PCN122 Lighting Design</td>
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<td>PCN123 Sustainability and Human Factors</td>
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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; luminance; reflectance; transmittance; diffuse surfaces; inverse square law; cosine law; Munsell and CIE Colour System; chromaticity coordinates X, Y, U, 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: 2010 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: 2010 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: 2010 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; luminance 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: 2010 SEM-2