Master of Lighting (on-shore) (PH82)

Year offered: 2011
Admissions: Yes
CRICOS code: 058287A
Course duration (full-time): 3 semesters (1.5 years) (Internal only)
Course duration (part-time): 6 semesters (3 years) (Internal and External)
Domestic Fees (indicative): 2011: Full fee tuition $7,375 (indicative) per semester
International Fees (indicative): 2011: $11,500 (indicative) per semester
Domestic Entry: July
International Entry: July
Total credit points: 144
Standard credit points per part-time semester: 24
Course coordinator: Associate Professor Ian Cowling
Campus: Gardens Point

Course Design
Masters students will undertake a 24 credit point research project, which may be based within their place of employment and two units (24 credit points) of coursework which may be reading topics associated with their project or other electives taken from any relevant units within the University, on approval of the Course Coordinator.

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
For further information about this course, please contact:

Ian Cowling
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Course structure - Full-time

Year 1, Semester 2 (July to October)
PCN121 Vision Colour and Photometry
PCN123 Sustainability and Human Factors
PCN124 Lamps and Luminaires

Year 2, Semester 1 (February to June)
PCN122 Lighting Design
PCN221 Best Practices in Lighting
PCN321 Reading Topic 1
PCN322 Reading Topic 2

Year 2, Semester 2 (July to October)
PCN224 Applied Lighting
PCN123 Sustainability and Human Factors

Year 3, Semester 1 (February to June)
PCN222 Advanced Lighting Design
PCN223 Lighting Applications
PCN320 Lighting Project

Year 3, Semester 2* (July to October)
PCN321 Reading Topic 1
PCN322 Reading Topic 2

Year 4, Semester 1* (February to June)
PCN320 Lighting Project

* The Fifth and Sixth semesters can be taken concurrently in full-time mode.

PH82 is offered full-time internally and part-time internally and externally. The course comprises a lecture/tutorial format, and where appropriate practical and field work. Some
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 XyY, LA*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; 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: 2011 SEM-2

PCN221 BEST PRACTICES IN LIGHTING
Electrical energy usage and subsequent energy analysis techniques, advantages and disadvantages of choosing low energy lamps and luminaries, compromising low energy sources and quality lighting, sensors and sensing techniques for lighting control, energy conservation through dimming and lamp switching, daylighting techniques, potential for energy savings through daylighting, daylighting design and calculations.
Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1
PCN222 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: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

PCN223 LIGHTING APPLICATIONS
This unit builds on the material covered in PCN122 and looks in more depth at some of the applications covered in 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: Gardens Point  Teaching period: 2011 SEM-2

PCN224 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 at QUT or within the person's place of employment.

Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

PCN320 LIGHTING PROJECT
This unit will be a project in some area of lighting in keeping with the student's interest. The project may be undertaken at QUT or within the student's place of employment and may be a project of direct interest and value to the student's employer.

Credit points: 24  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

PCN321 READING TOPIC 1
The make-up of this unit will be determined on a student-by-student basis, taking account of the student's interest, their proposed Master’s project, and the availability of appropriate units. The units may be drawn from existing QUT units (including from PH72 GradDipLighting) or units from other universities in Australia.

Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

PCN322 READING TOPIC 2
The make-up of this unit will be determined on a student-by-student basis, taking account of the student's interest, their proposed Master’s project, and the availability of appropriate units. The units may be drawn from existing QUT units (including from PH72 GradDipLighting) or units from other universities in Australia.

Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2