

# CGRA408 (2017) - Computer Graphics Rendering

## Prescription

This course will introduce a physically based photo-realistic rendering pipeline including radiometry, reflectance models, lighting, scene acceleration structures, ray tracing, path tracing and other global illumination algorithms.

## Course learning objectives

Students who pass this course should be able to:

1. Understand and use the computer graphics pipeline to generate photo realistic rendering images
2. understand core structures of photo-realistic renderer for implementing rendering algorithms
3. understand important concepts and theory of physically based rendering algorithms and be able to construct programs that use the algorithms

## Course content

This course will introduce a physically based photo-realistic rendering pipeline including radiometry, reflectance models, lighting, scene acceleration structures, ray tracing, path tracing and other global illumination algorithms.

## Withdrawal from Course

Withdrawal dates and process:

<http://www.victoria.ac.nz/students/study/course-additions-withdrawals>

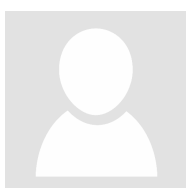
## Lecturers



**Taehyun Rhee (Coordinator)**

taehyun.rhee@vuw.ac.nz | 04 4635233 ext 7088

330 Cotton, Kelburn



**Andrew Chalmers**

chalmeandr@myvuw.ac.nz

# Teaching Format

During the trimester there will be three lectures per week. Some lecture time may be used for tutorials, presentations and guest lectures.

## Dates (trimester, teaching & break dates)

- Teaching: 17 July 2017 - 20 October 2017
- Break: 28 August 2017 - 08 September 2017
- Study period: 24 October 2017 - 26 October 2017
- Exam period: 27 October 2017 - 18 November 2017

## Class Times and Room Numbers

### 17 July 2017 - 27 August 2017

- **Tuesday** 11:00 - 11:50 – 109A, 14 Kelburn Pde, Kelburn
- **Friday** 11:00 - 12:50 – 109A, 14 Kelburn Pde, Kelburn

### 11 September 2017 - 22 October 2017

- **Tuesday** 11:00 - 11:50 – 109A, 14 Kelburn Pde, Kelburn
- **Friday** 11:00 - 12:50 – 109A, 14 Kelburn Pde, Kelburn

## Set Texts and Recommended Readings

### Required

There are no required texts for this offering.

## Mandatory Course Requirements

In addition to achieving an overall pass mark of at least 50%, students must:

- Both the practical work and an understanding of the concepts and principles of rendering are essential to the course. Therefore, there is a mandatory requirement that you obtain at least 40% on the total of the three projects.  
Passing CGRA 408

To pass CGRA 408, you must satisfy the mandatory requirements and gain at least a **C-** grade overall.

*If you believe that exceptional circumstances may prevent you from meeting the mandatory course requirements, contact the Course Coordinator for advice as soon as possible.*

## Assessment

This course will be internally and externally assessed through project assignments, final project and paper presentation.

## Workload

In order to maintain satisfactory progress in CGRA 408, you should plan to spend an average of at least 10 hours per week on this paper. A plausible and approximate weekly breakdown for these hours would be:

- Lectures and tutorials: 2.5 hours
- Readings and presentations: 3.5 hours
- Projects: 4 hours

## Teaching Plan

## Links to General Course Information

- Academic Integrity and Plagiarism: <http://www.victoria.ac.nz/students/study/exams/integrity-plagiarism>
- Academic Progress: <http://www.victoria.ac.nz/students/study/progress/academic-progress> (including restrictions and non-engagement)
- Dates and deadlines: <http://www.victoria.ac.nz/students/study/dates>
- Grades: <http://www.victoria.ac.nz/students/study/progress/grades>
- Special passes: Refer to the Assessment Handbook, at <http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>
- Statutes and policies, e.g. Student Conduct Statute: <http://www.victoria.ac.nz/about/governance/strategy>
- Student support: <http://www.victoria.ac.nz/students/support>
- Students with disabilities: [http://www.victoria.ac.nz/st\\_services/disability/](http://www.victoria.ac.nz/st_services/disability/)
- Student Charter: <http://www.victoria.ac.nz/learning-teaching/learning-partnerships/student-charter>
- Terms and Conditions: <http://www.victoria.ac.nz/study/apply-enrol/terms-conditions/student-contract>
- Turnitin: <http://www.cad.vuw.ac.nz/wiki/index.php/Turnitin>
- University structure: <http://www.victoria.ac.nz/about/governance/structure>
- VUWSA: <http://www.vuwsa.org.nz>

**Offering CRN:** [28327](#)

**Points:** 15

**Prerequisites:** COMP 308 or at least B- in CGRA 401 and 402 (or COMP 471 and 472 in 2014-15);

**Restrictions:** COMP 408

**Duration:** 17 July 2017 - 19 November 2017

**Starts:** Trimester 2

**Campus:** Kelburn