UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
COURSE OUTLINE

1. **Course:** CPSC 453, Introduction to Computer Graphics -- Fall 2017

   Lecture 01: (MWF, 11:00-11:50 in SA104)

Instructor Name	Email	Phone	Office	Hours
Usman Alim	ualim@ucalgary.ca	(403) 220-4362	MS 636	MW 2 - 3 pm, or by appointment

   Course Site:

   D2L: CPSC 453 L01-(Fall 2017)-Introduction to Computer Graphics

   Department of Computer Science: ICT 602, 403 220-6015, cpsc@cpsc.ucalgary.ca

2. **Prerequisites:**

   See section 3.5.C in the Faculty of Science section of the online Calendar.

   > One of Computer Science 319 or 331, one of Mathematics 211 or 213, and one of Mathematics 253, 267, 277, 283 or Applied Mathematics 219.

3. **Grading:**

   The University policy on grading and related matters is described in F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Component(s)	Weighting %
Assignments	40
Midterm Exam (in-class Mon. Oct. 30th)	30
Final Exam	30

   Each of the above components will be given a letter grade using the official University grading system. The final grade will be calculated using the grade point equivalents weighted by the percentages given above and then converted to a final letter grade using the official University grade point equivalents.

4. **Missed Components of Term Work:**

   The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in Section 3.6. It is the student's responsibility to familiarize himself/herself with these regulations. See also Section E.3 of the University Calendar

5. **Scheduled out-of-class activities:**

   There are no out-of-class activities scheduled for this course.

6. **Course Materials:**

   Required Textbook(s):

   Steve Marschner, Peter Shirley, Fundamentals of Computer Graphics (4th edition), CRC Press

7. **Examination Policy:**

   Students are allowed a one-sided letter-sized cheat sheet for the midterm examination.

Students are allowed a two-sided letter-sized cheat sheet for the final examination.

Students are allowed to use a basic scientific calculator for the midterm and final examinations.

Students should also read the Calendar, Section G, on Examinations.

8. **Approved Mandatory and Optional Course Supplemental Fees:**

   There are no mandatory or optional course supplemental fees for this course

9. **Writing across the Curriculum Statement:**

   See Section E.2 of the University Calendar.

10. **Human studies statement:**

    Students will not participate as subjects or researchers in human studies.

11. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**

    a. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under Section K. Student Misconduct to inform yourself of definitions, processes and penalties.

    b. **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points.

    c. **Academic Accommodation Policy:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at procedure-for-accomodations-for-students-with-disabilities_0.pdf.

       Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Undergraduate Affairs of the Department of Computer Science, Nathaly Verwaal by email nmverwaa@ucalgary.ca or phone 403-220-8485.

    d. **Safewalk:** Campus Security will escort individuals day or night (www.ucalgary.ca/security/safewalk/) . Call 403-220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

    e. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see also www.ucalgary.ca/legalservices/foip.

    f. **Student Union Information:** VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep. Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca; Student Ombudsman, Email: suvpaca@ucalgary.ca

    g. **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy, you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

    h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these Surveys.

    i. **SU Wellness Center:** The Students Union Wellness Centre provides health and wellness support for students including information and counselling on physical health, mental health and nutrition. For more information, see www.ucalgary.ca/wellnesscentre or call 403-210-9355.

Department Approval: Electronically Approved **Date:** 2017-09-08 08:28

Course Outcomes

1. By the end of the course, students should be able to recognize applications of computer graphics techniques appearing in film, print, interactive computer systems, and other forms of media.
2. By the end of the course, students should be able to explain how light, colour, and visual imagery is perceived through the human visual system.
3. By the end of the course, students should be able to describe how digital images are formed and represented within a computer system.
4. By the end of the course, students should be able to construct geometric and mathematical representations of two- and three-dimensional shapes, and real-world objects.
5. By the end of the course, students should be able to create data structures to store properties of virtual objects in computer memory, and to design algorithms that efficiently traverse these data structures.
6. By the end of the course, students should be able to explain how light interacts with different types of surfaces and materials to create distinctive appearances.
7. By the end of the course, students should be able to create computer programs that synthesize digital images by simulating the projection of light through an image capture system (e.g. eye, lens, camera).
8. By the end of the course, students should be able to write mathematical equations that describe and control the relative sizes, positions, and orientations of objects in a virtual three-dimensional scene.
9. By the end of the course, students should be able to create interactive computer programs that simulate the motion of objects within a three-dimensional scene in response to user input.