(60−549) **Virtual Reality**

Semester:	Winter, 2011
Classroom:	Erie Hall 1115
Time:	1:00pm–2:20pm, Mondays and Wednesdays
Instructor:	Dr. Xiaobu Yuan
	(LT 8104, ext. 3790, xyuan@uwindsor.ca[1])
Office-hour:	2:20pm–3:20pm, Mondays and Wednesdays

◇ ***Calendar Description*** :[2]

This course introduces the fundamental concepts, advanced techniques, and the most recent practices of virtual reality research and applications. Topics include: web-based virtual interfaces design, object and behavior modeling, animation and physical simulation, 3D human-computer interaction, real-time rendering of multi-sensory feedback, and virtual reality tools and applications.

– Prerequisite: B.Sc. (Hons., Computer Science) or permission of instructor.

◇ ***Course Objectives*** :[3,4]

To gain knowledge in advanced Human/Computer Interaction, and to develop proficiency in research related to the application of Virtual Reality. By means of practice, students are anticipated to acquire skills in:

Window-Based Virtual Reality

– Java programming with scene-graphs and scene-graph APIs,

– Interactive 3D applications using Java3D API; and

Scientific Research or Technical Investigation

– Selection of focused topics

– Information gathering and organization

– Critical evaluation of information

– Systematic analysis of strength and weakness

– Proposal for the development or use of technique(s)

– Design of proof-of-concept or implementation

– Writing of scholarly or technical documentation

– Presentation of work

◇ ***Representative Workload*** :[5,6,7]

[1]Only email originating from a valid University of Windsor student account will be accepted from students wishing to contact the instructor through email.

[2]No student is allowed to take a course more than two times without permission from the Dean.

[3]Students with various documented disabilities attend University with success. Student Disability Services provides a variety of services and supports to students with documented disabilities (including: learning disabilities, attention deficit/hyperactivity disorder, acquired brain injuries, vision, hearing and mobility impairments, chronic medical conditions and psychiatric issues), who have registered with SDS. If you have, or think you may have a disability, you may wish to visit Student Disability Services to learn how best to meet your academic goals. The SDS office is located in Room 117, Dillon Hall, (519) 253-3000 ext. 3288 or online at www.uwindsor.ca/disability.

[4]Student Evaluation of Teaching (SET) forms will be administered in the last two weeks of the class.

[5]All exercises must be done individually. Assignments and exercises must be completed before the due time, and will be checked in each of the classes. Half of the marks will be deducted if no later than 24 hours, or no marks at all after 24 hours. Late submission must be supported by proper (medical) documentation (see footnote 7).

[6]All communications during evaluation procedures must be in English.

[7]With the support of Student Medical Certificate filled in and signed by a qualified physician, the weight of missed exercise/assignment will be added to other exercises/assignments.

Exercises	10×2%	(to be checked in the weeks after the 1^{st} week)
Assignments	5×2%	(to be checked in class on the dates as in course schedule)
Proposal/Report	70%	(12:00pm on April 13, 2010)

◇ ***Evaluation*** :

– *Research Investigation*:

Every student is required to complete, individually or in a small group[8] with the permission of instructor, the conduction of either scientific research or technical investigation on a selected subject of virtual reality.

- Students working on scientific research must submit a proposal that contains a 50-word abstract, a ten-page report (excluding title page, table of content, abstract, references, and appendices), and a bibliography of about 15 referenced papers.
- Students working on technical investigation must submit electronically a report that contains details of techniques under investigation, design, and implementation codes, plus a manual of installation and user guide.

– *Evaluation Criteria*:

All submissions will be evaluated based upon presentation and, most importantly, quality. A submission that is well-written and contains sufficient information will be assigned to marks in the **B**−range. To receive marks in the **A**−range, the submission must also contain insightful discussions and demonstrate creativity. Otherwise, submissions in lower than required basic quality will be assigned marks in the **C**−range or lower. Failing marks will be assigned to poor-quality, missed, or late submissions.

– *Weights*:

	structure	*presentation*	*review*	*method/design*	*proof*	*overall*
scientific	5	10	20	20	5	10
technical	5	10	10	15	20	10

– *Grading Scheme*:

$100 \geq A^+ \geq \mathbf{93} > A \geq \mathbf{86} > A^- \geq \mathbf{80} > B^+ \geq \mathbf{77} > B \geq \mathbf{73} > B^- \geq \mathbf{70} > C^+ \geq 67 > C \geq 63 > C^- \geq 60 > F \geq 35 > F^-$

◇ ***Online Materials*** :

– Course Website: *www.cs.uwindsor.ca/∼xyuan/549index.htm*

◇ ***Policy on Cheating and Plagiarism*** :

Academic honesty requires the attribution of every idea with proper quotation to its source. References to other work should be explicit. Direct quote from other documents should be between quotes ("...") and the source clearly attributed. It is not acceptable to present writings of others as your own by collecting or rephrasing others' work. Your reports should reflect your own understanding and critical review of the literature by yourself.

The instructor will report any suspicion of cheating to the Director of the School of Computer Science. If sufficient evidence is available, the Director will begin a formal process according to the University Senate Bylaws. The instructor will not negotiate with students who are accused of cheating but will pass all information to the Director of the School of Computer Science.

The School of Computer Science Policy requires that the consequences of cheating and plagiarism be worse than the consequences of not submitting the requirement. Such actions may result in failing the course and further disciplinary actions by the University.

[8]The submission of group work must be accompanied with a contribution table, signed by all members, that clearly states each member's contribution in the group work.