Course Syllabus

1. **Program of Study** Bachelor of Science (Computer Science)
   Faculty/Institute/College Mahidol University International College
   Mahidol University

2. **Course Code** ICCS 455 **Course Title** Virtual Reality

3. **Number of Credits** **4 (Lectures/lab)** (4 - 0)

4. **Prerequisite(s)** ICCS 315, ICCS 316

5. **Type of Course** Elective

6. **Trimester / Academic Year** Trimester I / Year 2005 - 2006

7. **Course Description**
   The concepts of virtual reality, using Virtual Reality Modeling Language (VRML); hands-on experience by developing applications

8. Course Objective(s)
By the end of the course students should be able to:
- Build several basic and complex shapes, such as extrusions and elevations
- Understand shape transformations, such as translation, rotation, and scaling
- Use light, textures, and sounds to enhance the immersive effect
- Develop a simple virtual reality application

9. Course Outline

Week	Topic		Instructor
	Lecture	**Hour**	
1	Introduction	4	Dr. Udom Silparcha
2	Input Devices	4	
3	Output Devices	4	
4	Computing Architectures for Virtual Reality	4	
5	Modeling	4	
6	Programming: WorldToolKit, Java3D	4	
7	Programming: GHOST, PeopleShop	4	
8	Human Factors in Virtual Reality	4	
9	Traditional Virtual Reality Applications	4	
10	Emerging Virtual Reality Applications	4	
11	Student Presentations	4	
	Total	44	

10. Teaching Method(s)
Lectures, in-class practical exercises, discussion, and self-study

11. Teaching Media
Text and teaching materials, Powerpoint, and handouts

12. Measurement and Evaluation of Student Achievement

Assessment made from stated criteria: students with 85% obtain grade A

13. Course Evaluation

1. Participation	5%	4. Mid-term exam	20%
2. Assignments (×5)	35%	5. Final exam	20%
3. Project	20%		

14. Reference(s)

Burdea, G.C. and P. Coiffet, 2003. Virtual Reality Technology-2nd ed. Wiley-IEEE Press.

Sherman, W.R. & A. Craig, 2003. Understanding Virtual Reality: Interface, Application, and Design. Morgan Kaufmann, San Francisco, CA.

15. Instructor(s)

Dr. Udom Silparcha

16. Course Coordinator

Dr. Udom Silparcha