Spring 2018: CIS 405 - Computer Graphics (3 Credits)

MWF 10:10-11:00. SN 338.

Instructor

Dr. Zhijun Wang.   Office: Byrd Science Center 309
Office Phone: (304) 876-5070   E-mail: zwang@shepherd.edu
Office Hours: MW 1-3, WF 9-10, or by appointment.

Course Description

From the Catalog – Basic concepts such as graphics systems, modeling, and pipelines are introduced. Students also will learn to program in a popular graphics library, such as OpenGL or DirectX. Topics include basic 2-D and 3-D graphics programming, basic animation and controls, texture mapping, lights, and materials. Prerequisites: CIS 302.

Mandated Goals/Learning Outcomes

- LEAP goal – Intellectual and practical skills throughout the curriculum.
- Learning outcomes – Critical thinking and creative thinking.

Specific Course Goals

- Understand basic concepts of 2D and 3D computer graphics.
- Get familiar with current graphics libraries including OpenGL, DirectX, and extensions.
- Design and implement 2D/3D graphics scenes using Three.js, a 3D library for the Web.

Tentative Schedules

- Exam 1 – 2/21. Exam 2 – 3/28. Final project – Due by 11pm on 4/23.
- Week 1 – 4. Graphics concepts and libraries. 3D scenes and essential components.
- Week 5 – 7. Camera and views. Lights, materials, and 2D/3D geometries.
- Week 8 – 12. Advanced geometries and meshes. Scene animations. Moving the camera.
- Week 13 – 15. Textures. 3D web projects. Custom shaders/render/physics/sound if time.
- For detailed schedules and assignments with due dates etc., please visit
  http://cs.planetapps.com/405.html

Textbook

- "Learning Three.js: The JavaScript 3D Library for WebGL - Second Edition" by Jos Dirksen, Packt Publishing, 2015. ISBN-13: 978-1784392215.
- Other relevant book and web references will be posted on the course webpage.

Evaluations

- Assignments/Projects – 50%
  No late assignment/project will be accepted without a documented excusable reason. Due dates are posted on the course website. Please start early.

- Two Midterm Exams – 20%
  The first missing midterm exam can be excused with an excusable reason such as an absence with a doctor's written notice. In this case the final project carries its weight.
- Final 3D Graphics Team Project – 30%
  The final project includes a presentation/demonstration of the team project features as well as submission of project file(s).
- Final Grade – A ≥ 90%, B ≥ 80%, C ≥ 70%, D ≥ 60%, F < 60%.

Federally, HEPC, and Shepherd Mandated Policies

Disability Support Services
Disability Support Services at Shepherd University believes that every student should succeed, and works closely with students to meet their needs. Students requesting any disability related accommodation should contact the Disability Coordinator at 304-876-5122. This includes students with learning disabilities needing classroom accommodations, students requesting specific housing accommodations for health-related reasons, and all other disability accommodations. Accommodations need to be documented and provided to instructors. Please see http://www.shepherd.edu/disability for more information.

Academic Integrity
Each student in this course is expected to abide by the Shepherd University Academic Integrity Procedures in the Student Handbook – http://www.shepherd.edu/conduct.

Class Attendance
You must attend your classes regularly and engage in the requirements for each class; otherwise, your financial aid may be revoked either partially or in full. This would result in an amount due by you to the University immediately. Please refer to http://www.shepherd.edu/financialaid for more details.

Shepherd and CME Suggested Policies and Information

Free tutoring scheduling. Please refer to the academic support center's website at http://www.shepherd.edu/academic-support/.

Cell Phone and Text Messaging Policy – Please turn your cell phone off or put it in the silent mode. Please talk outside of the classroom if needed. No texting please.

Students in athletics – It is your responsibility to provide a letter signed by your coach listing all of the days in which you will be absent. Accommodations will be made only if the letter is received from your coach no later than the end of the first week of class.

The instructor reserves the right to update this syllabus, but only when necessary. In this case students will be notified in a reasonable and timely fashion.