BOSTON UNIVERSITY METROPOLITAN COLLEGE
COMPUTER SCIENCE DEPARTMENT

MET CS532 D1 Computer Graphics Syllabus

Instructor:
Zlatko Vasilkoski
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Office hours: by appointment

Class Time: Thursday 6-9pm, FLR 265 (808 Comm Ave. PC labs)
Semester Starts: Tuesday, September 2. The last day of classes is Wednesday, December 10, 2014. Final exams date will be assigned between Monday, December 15th and Friday, December 19th.

Prerequisites:
Any programming knowledge of C, C++, Matlab etc. and some linear algebra, trigonometry, basic statistics and basic calculus.

Course Objectives: - Stronger focus on the scientific and algorithmic aspects of:
- Computer graphics basics
- OpenGL basics
- Image processing basics
- Get acquainted with basic graphical models and algorithms
- Learn applied math for computer graphics & image processing
- Practical and scientific applications
- Visualizing complex multidimensional data, computer vision, bio-inspired algorithms etc.

Textbooks:
Not required. Most of the algorithmic aspects and techniques covered in class are freely available and also can be found in many textbooks on the subject. For some specific algorithms papers with their application will be given in class.

Some of the textbooks that you can refer to:
Computer Graphics: Principles and Practice in C
by Foley, van Dam, Feiner, Hughes
Publisher: Addison-Wesley Professional; 3 edition (August 4, 1995)
ISBN-10: 0201848406

Any book on OpenGL such as
OpenGL Programming Guide: The Official Guide to Learning OpenGL
by OpenGL Architecture Review Board, Shreiner, Woo, Neider, Davis

Publisher: Addison-Wesley Professional; 6 edition (July 30, 2007)
ISBN-10: 0321481003

The OpenGL SuperBible: Comprehensive Tutorial and Reference (5th Edition)
Publication Date: August 2, 2010 | ISBN-10: 0321712617 | ISBN-13: 978-0321712615 |
Edition: 5

Tentative Outline (changes are possible):

Week 1: Overview
Week 2: 1D Drawing (homework 1)
Week 3: 2D Drawing & Transformations (lab assignment 1)
Week 4: 3D Drawing (home work 2)
Week 5: Curves and Surfaces (home work 3)
Week 6: Review algorithms, Q/A, Final Project Assigned
Week 7: Midterm
Week 8: Image Processing, (project proposals due)
Week 9: Filtering, segmentation, tracing, (lab assignment 2)
Week 10: Review algorithms (cont.)
Week 11: Visualization of complex data (lab assignment 3)
Week 12: Bio-inspired algorithms
Week 13: TBA
Week 14: Final Project Presentations

Grading:
Assignments: 30%
      Home work: 10%
      Labs: 20%
Midterm: 20%
Final Exam: 25%
Final Project: 25%

Academic Honesty:
The course is governed by the Academic Conduct Committee policies regarding plagiarism (any attempt to represent the work of another person as one's own). This includes copying (even with modifications) of a program or segment of code. You can discuss general ideas with other people, but the work you submit must be your own. Collaboration is not permitted.

Policies:
- No late homework is accepted
- Each missed class after 2nd absence will result in 3% deduction from final grade
- BU academic honesty is described here:
http://www.bu.edu/met/metropolitan_college_people/student/resources/conduct/