Computer Graphics – CISC 3620

Course Information:

Instructor Information:

- Tzipora Halevi
- Ingersall Hall room 2156A
- halevi@sci.brooklyn.cuny.edu
- Office hours: Tuesdays, Thursdays 3.30 pm – 4.30 pm and by appointment.

Online Course Webpage: *http://thalevi.github.io/CISC3620*

Hours and location:

Tues, Thurs 5.05 – 6.20 pm	5301 IH

Course Description:

Fundamentals of computer graphics programming. Graphics hardware and software standards. 2D geometric primitives and raster images. 3D object representations. Data structures, algorithms, and the graphics pipeline. Graphical user interfaces. Underlying concepts in computer graphics systems, including games, animation, modeling, rendering, and paint systems.

Course Requirements:

Course Textbooks (required):

- J. Dirksen. Learn Three.js: Programming 3D Animations And Visualizations For The Web With HTML5 And WebGL, 3rd Edition. Packt Publishing, 2018. ISBN: 978-1788833288

Additional textbooks (optional):
- E. Angel and D. Shreiner. Interactive Computer Graphics With WebGL, 7th Edition. Pearson, 2016. ISBN:978-0133574845.
- P. Shirley and S. Marschner. Fundamentals of Computer Graphics, 3rd Edition. CRC Press, 2009.
- F. Dunn and I. Parberry. 3D Math Primer for Graphics and Game Development, 2nd Edition. CRC Press, 2011.

Course Overview:

Course Topics
1. Canvas drawing
2. WebGL, Three.js
3. User controls and color
4. HLS and triangle interpolation
5. Instance transforms, Composite objects, Nested transforms
6. Cameras
7. Materials and lighting
8. Texture mapping
9. Animation
10. Bezier surfaces, Lathe, Extrude, Tube geometries
11. Interaction
12. Transparency and text
13. Shadows and anti-aliasing
14. Blowing cloth, sprites, points

Course Structure:

Homework:
There will be frequent assignments during the semester covering the topics discussed in class, from the textbook or on-line searches. Homework solutions must be legible; Difficult-to-read solutions may be marked off or may not be graded entirely. Typing homework is recommended. **No late homework accepted.**

Exams: There will be a midterm and a final exam.

Online Resources:
Slides, assignments, and readings will be posted on the course blackboard site. The course will also have a blackboard site with a dropbox for each assignment, grades, and announcements.

Class Grading:
Participation / attendance 10%
Homework 20 %
Midterm 30%
Final exam 40%

University Policy on Academic Integrity:

The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the Brooklyn College procedure for policy implementation can be found at www.brooklyn.cuny.edu/bc/policies. If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member MUST report the violation. Students should be aware that faculty may use plagiarism detection software.

Center for Student Disability Services:

The Center for Student Disability Services (CSDS) is currently working remotely. In order to receive disability-related academic accommodations students must first be registered with CSDS. Students who have a documented disability or suspect they may have a disability are invited to schedule an interview by calling (718) 951-5538 or emailing testingcsds@brooklyn.cuny.edu. If you have already registered with CSDS, email Josephine.Patterson@brooklyn.cuny.edu or testingcsds@brooklyn.cuny.edu to ensure the accommodation email is sent to your professor.

Non-Attendance because of religious beliefs:

The New York State Education Law provides that no student shall be expelled or refused admission to an institution of higher education because he or she is unable to attend classes or participate in examinations or study or work requirements on any particular day or days because of religious beliefs. Students who are unable to attend classes on a particular day or days because of religious beliefs will be excused from any examination or study or work requirements. Faculty must make good-faith efforts to provide students absent from class because of religious beliefs equivalent opportunities to make up the work missed; no additional fees may be charged for this consideration.

If classes, examinations, or study or work requirements occur on Friday after 4 p.m. or on Saturday, similar or makeup classes, examinations, or study or work requirements will be made available on other days, where possible and practical. The faculty and the administration will not allow any adverse or prejudicial effects to accrue to students availing themselves of this regulation. If students have complaints about the application of this policy, they are entitled to bring action or a proceeding for enforcement of their rights in the Supreme Court of Kings County.

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More information can be found at:
http://www.brooklyn.cuny.edu/web/off_registrar/2020-2021_Undergraduate_Bulletin.pdf

Student Bereavement Policy:

Students who experience the death of a loved one must contact the Division of Student Affairs, 2113 Boylan Hall, 718.951.5352, studentaffairs@brooklyn.cuny.edu, if they wish to implement either the Standard Bereavement Procedure or the Leave of Absence Bereavement Procedure (see below). The Division of Student Affairs has the right to request a document that verifies the death (e.g., a funeral program or death notice).

Typically, this death involves that of a family member, in parallel to the bereavement policy for faculty and staff. However, it is up to the discretion of the Division of Student Affairs to determine if a death outside of the immediate family warrants implementation of the student bereavement policy.

Immediate family shall be defined as spouse; natural, foster, or step parent; grandchild; mother-in-law; father-in-law; natural, foster, or stepbrother; natural, foster, or stepsister, natural, foster, or stepchild or any relative residing in the same household, the domestic partner of the student and a child or parent of the domestic partner or any other relative of the domestic partner living in the same household.

More information can be found at:
http://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php

Important Dates:

Friday, January 29	First day of Spring 2021 classes
Thursday, February 4	Last day to add a course
Monday, May 17	Last day to withdraw from a course with a "W" grade
Tuesday, May 18	Reading Day
Wednesday, May 19	Final Examinations Begin
Tuesday, May 25	Final Examinations End / End of Spring Semester