

# **Course Syllabus: CS 38101 Introduction to Game Programming**

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## **Course Information**

### **Course Description**

This course provides an introduction to game engine scripting, event driven and data driven programming, game engine data structures, basic game related graphics and AI concepts. It is the first course in a sequence of game programming related courses leading to a concentration in game programming. It also counts as an upper division elective for the BS, BA, and minor degrees in computer science.

The concepts developed in this course are part of the broader area of virtual environment programming that allows individuals to collaborate in games, education, device simulation, and business activities in a natural way without being in the same physical location. Quoting Wikipedia:

Virtual environment software can be purposed for any use, from advanced military training in a virtual environment simulator to virtual classrooms. Many Virtual Environments are being purposed as branding channels for products and services by enterprise corporations and non-profit groups.

Currently, [virtual event](#) and [virtual tradeshow](#) have been the early accepted uses of virtual event services. More recently, virtual environment software platforms have offered choice to enterprises – with the ability to connect people across the Internet. Virtual Environment Software enables organizations to extend their market and industry reach while reducing (all travel-related) costs and time.

This course is organized into 1-2 week modules that include tutorials, documentation, and assignments on game programming topics such as game graphics, rendering, game physics, game networking, and game AI.

### **Course Times and Location**

This is an online, 15 week course. There will be no face-to-face meetings. All assignments have due

dates; please refer to the course schedule located within the course.

### **Prerequisites**

CS 23001 or equivalent.

### **Course Goals**

By the end of this course, you will:

1. Understand event driven and data driven programming.
2. Understand game mathematics
3. Understand the fundamentals of game scene managers.
4. Understand the fundamentals of game lighting.
5. Understand the fundamentals of game physics.
6. Understand the fundamentals of game materials.
7. Understand the fundamentals of game networking.

### **Course Learning Outcomes**

By the end of the course, you will be able to:

1. Be able to program in a professional quality game engine.
2. Write programs for 2D and 3D games.
3. Debug event driven programs.
4. Program a game for a hand held device.

### **Learning Materials**

[The Unity 3D personal edition game engine \(free\)](#)

Please take note that I may tell you that you will need to use a specific version of Unity for some of your assignments. If I do, the assignment **MUST** be done using that version for it to either work, or for me to be able to run it. I will let you know a head of time which version you will need and where to find it.

### **Technology Requirements and Skills**

## **Computer Hardware and Software**

Students new to Kent State University should review Information Service's [Technology Guidebook](#). A personal computer with consistent, reliable Internet access is required:

1. A DSL or cable connection to the Internet; dial-up is not sufficient.
2. Laptop or desktop computer with a minimum of a 2 GHz processor and 2 GB of RAM

You should have one of the following computer operating systems and additional software applications installed on your computer:

1. Windows 7 system operating software or higher for PC computers OR Mac OS X 10.6 or 10.7 or higher for Apple Mac computers.
2. Microsoft Office Suite (Word, Excel, PowerPoint) [www.microsoftstore.com](http://www.microsoftstore.com).
3. A free version of Microsoft Office is available for students. Instructions and information can be found on [support.kent.edu](http://support.kent.edu).
4. Antivirus for Windows OS, Microsoft Security Essentials OR Antivirus for Mac OS, Sophos
5. A Blackboard Learn compatible browser, such as the latest version of Mozilla Firefox.

Blackboard also supports Chrome and Safari. Internet Explorer is NOT a supported browser and should not be used.

## **Technology Skills**

Programming at the level of a CS II including procedural and class programming and recursion. The ability to use an IDE to develop programming projects. The ability to use a search engine to find help and documentation on programming projects.

## **Blackboard (Bb) Learn**

This class will use Blackboard (Bb) Learn, the official learning management system (LMS) used by Kent State University to deliver course materials to university students. ALL course materials and activities will take place in Bb Learn.

In order to login to the online Bb Learn LMS, students will need a Kent State FlashLine User Name ID and password.

- Students can login to Bb Learn either through a student FlashLine account or via a direct link to the login page <http://learn.kent.edu/>

For help using the Blackboard (Bb) Learn system use the "Blackboard Help" link in the main navigation. Help can also be found on the Kent State Blackboard support website:

<http://www2.kent.edu/is/resources/elearning/student/tutorials/index.cfm>

In general, Bb Learn works best using the latest version of most major web browsers, including Firefox, Chrome and Safari. For a complete list of supported web browsers, please follow the link the to KSU Blackboard support web site:

<http://www2.kent.edu/is/resources/elearning/student/gettingstarted/index.cfm>

## **Technology Help Guidelines**

**A. 30-Minute Rule:** When you encounter struggles with technology, give yourself 30 minutes to 'figure it out.' If you cannot, then post a message to the discussion board; your peers may have suggestions to assist you. You are also directed to contact the KSU Helpdesk 24/7. As a last resort, contact me. However, do not expect an immediate reply, and I cannot guarantee that I will be able to help with any and all technology issues.

**B.** When posting or sending email requesting help with technology issues, whether to the Helpdesk or me, use the following guidelines:

1. Include a descriptive title for the subject field that includes 1) the name of course 2) the issue. Do NOT just simply type "Help" into the subject field or leave it blank.
2. List the steps or describe the circumstance that preceded the technical issue or error. Include the exact wording of the error message.
3. When possible, always include a screenshot(s) demonstrating the technical issue or error message.
4. Also include what you have already tried to remedy the issue (rebooting, trying a different browser, etc.).

## **Policies and Expectations**

### **Online Attendance Policy**

Online courses are conducted on the premise that regular attendance requires students to log into the Bb Learn learning management system (LMS). Attendance is measured both by virtual presence in the online course and student interaction with course learning materials and assignments. Students are expected to check their Kent State e-mail and to log into the system multiple times (at least every other day) during the week.

All actions by students in the Bb Learn LMS can be tracked. At any time during the course, an instructor may generate a report that indicates when and how long individual students have been logged into the LMS, or engaged with course materials or course tools.

Students who anticipate an absence from the online course due to technical or medical reasons should consult with the instructor individually. An absence due to illness or injury requires verification from a medical professional and should be presented to the instructor.

## **Communication Policy**

1. Email course questions and personal concerns, including grading questions, to me privately using your@kent.edu email. Do NOT submit posts of a personal nature to the discussion board.
2. Email will be checked at least twice per day Monday through Friday; Saturday and Sunday, email is checked once per day. During the week, I will respond to all emails within 24 hours; on weekends and holidays, allow up to 48 hours. If there are special circumstances that will delay my response, I will make an announcement to the class.
3. Student Forum/Q&A discussion boards will be checked twice per day Monday through Friday; Saturday and Sunday, these discussion boards will be checked once per day.
4. Due to Covid-19, unless for extreme reasons there will be no face to face office hours. All office hours will be by appointment. Once you email me I will set up a Google Hangouts call for the requested meeting time, or I will offer other times if the requested time is conflicting with my own schedule.
5. for questions related to University technology, please contact: 330-672-HELP for 24/7 support. Technical questions about Unity should be directed to the class discussion boards.

## **Online Student Conduct and (N) etiquette**

Communicating appropriately in the online classroom can be challenging. In order to minimize this challenge, it is important to remember several points of “internet etiquette” that will smooth communication for both students and instructors:

1. Read first, Write later. Read the ENTIRE set of posts/comments on a discussion board before posting your reply, in order to prevent repeating commentary or asking questions that have already been answered.
2. Avoid language that may come across as strong or offensive. Language can be easily misinterpreted in written electronic communication. Review email and discussion board posts BEFORE submitting. Humor and sarcasm may be easily misinterpreted by your reader(s). Try to be as matter-of-fact and professional as possible.
3. Follow the language rules of the Internet. Do not write using all capital letters, because it will appear as shouting. Also, the use of emoticons can be helpful when used to convey nonverbal feelings.
4. Consider the privacy of others. Ask permission prior to giving out a classmate's email address or other information.
5. Keep attachments small. If it is necessary to send pictures, change the size to an acceptable 250kb or less (one free, web-based tool to try is [picesize.com](http://picesize.com)).
6. No inappropriate material. Do not forward virus warnings, chain letters, jokes, etc. to classmates or

instructors. The sharing of pornographic material is forbidden.

**NOTE:** *The instructor reserves the right to remove posts that are not collegiate in nature and/or do not meet the Online Student Conduct and Etiquette guidelines listed above.*

### **University Use Of Electronic Email**

A university-assigned student e-mail account is the official university means of communication with all students at Kent State University. Students are responsible for all information sent to them via their university-assigned e-mail account. If a student chooses to forward information in their university e-mail account, he or she is responsible for all information, including attachments, sent to any other e-mail account. To stay current with university information, students are expected to check their official university e-mail account and other electronic communications on a frequent and consistent basis. Recognizing that some communications may be time-critical, the university recommends that electronic communications be checked minimally twice a week.

### **Assignments and Grades**

A detailed breakdown of course assignments and due dates by lesson module is available as a separate .pdf document that can be accessed in Bb Learn by clicking on the **Syllabus & Course Schedule** link in the course menu.

#### **Writing Assignments (42% of grade)**

Approximately 7 programming assignments and a programming project. See the course assignments on Bb for details. See class notes for instructions on submitting assignments.

#### **Discussion Boards (14% of grade)**

Approximately every other week you will be required to submit the answers to a set of posted question, and rate the answers of you classmates. Thoughtful answer whether correct or not will receive full credit. Careless answers or answers indicating lack of preparation will have points deducted.

#### **Class Project (44% of grade)**

#### **Tests and Quizzes**

None

#### **Assessment Feedback**

I will always try to have evaluation of a programming assignment posted on Bb 1-2 weeks after it is due. Due not rely on the Bd course percentage value to assess your current grade. Use the score on the assignment and the percentage weight to calculate you current grade.

I am a grad student, so work my own classes may push back the return of evaluations by a bit. Should this happen, an announcement will be made to the class.

### **Late and Make-up Work Policy**

Assignments more than one week late will not be graded unless you have arranged with the instructor to submit the assignment late. All late programs will have points (at least 10%) deducted from the final score.

### **Assignment of Grades**

Percentage of Earned Points	Grade
93% -100%	A
90%-92%	A-
88%-89%	B+
83%-87%	B
80%-82%	B-
78%-79%	C+
73%-77%	C
70%-72%	C-
68%-69%	D+
60%-67%	D
Under 60%	F

### **University Policies**

Students are required to be aware of and follow all general and academic policies established by Kent State University. A list of the general academic policies is listed on the online version of the <http://catalog.kent.edu/>. Specific policies related to the successful completion of this online course can be located and reviewed in your Blackboard Learn course. University policies are located in the Online Student Support Services & University Policies folder contained within the START HERE folder in your Blackboard Learn course.

### **Students with Disabilities:**

(Revised 6/01/07) University policy 3342-3-01.3 requires that students with disabilities be provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these through Student Accessibility Services (contact 330-672-3391 or visit [www.kent.edu/sas](http://www.kent.edu/sas) for more information on registration procedures).

Blackboard Learn accessibility statement:

<http://blackboard.com/Platforms/Learn/Resources/Accessibility/WebCT-Accessibility.aspx>

### **Course Enrollment and Withdrawal**

University policy requires all students to be officially registered in each class they are attending. Students who are not officially registered for a course by published deadlines should not be attending classes and will not receive credit or a grade for the course. Each student must confirm enrollment by checking his/her class schedule (using Student Tools in FlashLine) prior to the deadline indicated. If registration errors are not corrected by this date and you continue to attend and participate in classes for which you are not officially enrolled, you are advised now that you will not receive a grade at the conclusion of the semester for any class in which you are not properly registered. Also, it is your responsibility to check the withdrawal dates for each semester.

### **Plagiarism and Academic Integrity**

Students enrolled in the university, at all its campuses, are to perform their academic work according to standards set by faculty members, departments, schools and colleges of the university; and cheating and plagiarism constitute fraudulent misrepresentation for which no credit can be given and for which appropriate sanctions are warranted and will be applied.

For more information: <http://www.kent.edu/academics/resources/plagiarism/>

### **Subject to Change Statement**

The syllabus and course schedule may be subject to change. Changes will be communicated via email or the Blackboard Learn announcement tool. It is the responsibility of students to check email messages and course announcements to stay current in their online courses.