



### Course Syllabus

Last updated: Jan 29, 2021 Noon

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Students who attend class face-to-face are expected to comply with [OSU face covering and social distancing guidelines](#) while in the building and in the classroom.

#### Instructor

Blayne E Mayfield

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Office: 232 MSCS

Skype: Blayne\_OK

Web Page: <http://computerscience.okstate.edu/~bem>

Office hours: TuTh 1:00 – 2:30 PM Central Time, and by appointment

#### Teaching Assistants

Stevens Johnson

Email: [sjohn53@ostatemail.okstate.edu](mailto:sjohn53@ostatemail.okstate.edu)

Office hours: MWF 10:30 – 11:30 AM

Skype: live:.cid.1a5880e7ac395e7f

#### Meeting Logistics

Class sessions take place: TuTh 9:00 – 10:15 AM

Classroom: 114 CLB

You may participate live by attending sessions face-to-face or online. **We will do our best to assure that live, online sessions are available, but technical difficulties beyond our control could prevent any given session from being broadcast online.**

We plan to record and post sessions on the course Canvas site for those times you cannot participate live. **We will do our best to assure that recorded sessions are available, but technical difficulties beyond our control could prevent any given session from being recorded.**

We are using [Microsoft Teams](#) to stream the class sessions live for students who choose not to attend face-to-face. MS Teams apps are available for Windows, macOS, Linux, iOS/iPadOS, and Android.

While students can participate without installing the Teams app, you will have a smoother, more robust experience with the app. (And the instructor will not have to pause and admit students into the sessions one at a time, as they arrive!) You are strongly encouraged to access the live stream through the app.

See the *Announcements* section of the course canvas page for the link to the live stream.

## Optional Textbooks and Papers

- *Virtual Reality Technology & Applications* by Mihelj, Novak, and Beguš (freely available for download through the [OSU library](#)).
- *C# Programming Yellow Book* by Rob Miles, 2019 edition (a.k.a., the “Cheese” edition); Department of Computer Science, University of Hull ([freely available for download](#))
- Extended reality, Unity, or other eBooks available at the [OSU Library site](#).
- Other papers, books, or book chapters as specified during the semester.

## Canvas

You can access the course Canvas site by signing in to <https://canvas.okstate.edu> and looking for the course *CS 4743-5743 Extended Reality Combined - Spring21*. (All CS4743 and CS5743 sections have been combined on Canvas.) All materials for the course will be available through Canvas.

## Prerequisites

Object-oriented programming experience.

## Course Objectives

Survey the history, state-of-the-art, and future of extended reality (XR), a.k.a VAMR (virtual, augmented, and mixed realities), a.k.a. immersive computing. Learn to use appropriate tools and techniques to develop for a variety of target platforms. Examine the human physiological factors that affect the design and development of XR systems. Investigate the relationship between XR and IoT (Internet-of-Things). Learn about the construction of virtual environments and tracking between real and virtual objects. Study the applications of XR to solve real-world problems.

## Assignments

Individual assignments .....	up to 130
Group participation assignments .....	up to 50
Team assignments .....	up to 120
Exams (2 @ 100) .....	<u>200</u>
	<b>Undergraduate Credit Total Points: up to 500</b>
Project for Graduate Credit .....	<u>50</u>
	<b>Graduate Credit Total Points: up to 550</b>

## Honors Section

Students enrolled in the Honors section will meet with the instructor as a group for one extra hour per week (weekday and time to be determined) and must complete an extra project that will be graded as pass/fail with respect to the Honors requirements.

## Due Dates & Assignment Logistics

The due date and time for each assignment is specified on its assignment handout posted on the course Canvas site. Solutions must be submitted via drop boxes on the same site. Solutions that consist of multiple files must be zipped into a single file for submission. (NOTE: zip is the only form of aggregation/compression accepted.)

Group participation assignments occur during our class sessions and involve a group of students gathering to discuss certain concepts or questions. Each of these assignments is worth 5 points and there is no possibility of making up those points if you are absent (physically or online) that day. These assignments are not announced in advance, so it is vitally important that you attend sessions live (physically or online) whenever possible.

## Late Work Policy

Individual assignments may be turned in late, but they lose a percentage of their graded point values for each class day that they are late, according to the following schedule:

On time:	0%
Up to 1 class day late:	10%
Up to 2 class days late:	30%
Up to 3 class days late:	60%
More than 3 class days late:	100%

All other types of assignments are worth zero points if turned in late.

## Grading policy

Semester grades will be assigned based on point totals as follows:

100% to 90%:	A
90% to 80%:	B
80% to 70%:	C
70% to 60%:	D
60% to 0%:	F

In addition, each student must earn at least half of the points for individual assignments to receive a passing grade for the course.

## Exam Logistics

Exams will administered online. There may be a nominal charge to your Bursar account for taking an exam.

Unless an announcement is made to the contrary, the following details regarding the exam will hold true:

- Practice exam: 1 hour in length. This exam consists of just 2 or 3 questions; the purpose of the exam is twofold: (1) to verify that your hardware software configuration is correct for completing the other exam online, and (2) to let you see the types of questions that could appear on the other exams. The practice exam is worth 10 bonus points that are earned simply by completing the exam online. The practice exam will be available for you to take in any single, one-hour timespan within a multi-day window a few days before the mid-term exam. (Exact dates will be announced later.)
- Mid-Term exam: 1 hour in length; the exam will be available for you to take in any single, one-hour timespan from Tuesday, March 9 @ Noon through Thursday, March 11 @ 11:59 AM CST (i.e., a 48-hour window to take the exam).
- Final Exam: 2 hours in length; the exam will be available for you to take in any single, two-hour timespan from Tuesday, May 4 @ Noon through Thursday, May 6 @ 11:59 AM CDT (i.e., a 48-hour window to take the exam).

### Software/Hardware requirements

- *A computer running Windows 10 or macOS Catalina or Big Sur.* You are encouraged to have a laptop computer available during our sessions.
- *A fairly up-to-date mobile device.* (See [this page](#) for more details.)
  - Android running v 7.0 (Nougat) or later.
  - Apple running iOS 11 or later.
- *Internet access* and an HTML5-compatible Web browser.
- *A headset, or speakers and a microphone.* (Optional, but encouraged.)
- [Unity Hub](#), which manages the versions of Unity you have installed and serves as the Unity launching page.
  - *Unity 2020.2* – I suggest you install this from within *Unity Hub*.
- [SourceTree](#) *GIT GUI client* (freeware) or a similar GIT client.
- [GIMP](#) 2D image editor (freeware).
- [InkScape](#) 2D vector image editor (freeware).
- [SketchUp Free](#) 3D Modeling system (web-based freeware).
- [Blender](#) 3D modeling system (freeware).
- [Audacity](#) audio capture and edit utility (freeware)
- [7-Zip](#) (freeware) or some other zip utility. (Optional, since our operating systems have built-in zip capabilities.)
- Other hardware and software as specified during the semester.

### Collaboration policy

*Individual assignments:* Discussion of concepts, ideas, and techniques is acceptable.

After discussion, each student must write up his/her own solution. Copying another person's work, in part or in whole, is not allowed. Giving another student your

work, in part or in whole, is considered cheating as well. If you are unsure whether your collaboration is acceptable, speak with the instructor in advance. Take care that your solutions are not exposed to or by other students.

*Team assignments:* Sharing of work among students on a project team is acceptable. Inter-team discussion of concepts, ideas, and techniques is acceptable, but inter-team sharing of work is not permitted. If you are unsure whether your collaboration is acceptable, speak with the instructor in advance.

*Examinations:* During an examination period, no communication of any kind about the exam (except with the instructor or proctor) is allowed.

**Students who do not comply with the collaboration policies described above will be assigned sanctions in accordance with OSU policy 2-0822 (*Academic Integrity*). Depending on the circumstances of the violation, the sanctions may result in a score of zero on an assignment, a final grade of *F!* for the course, or dismissal from OSU. In all instances, the violation will be reported to the appropriate institutional officials.**

## **Syllabus attachment**

Other useful information, such as important dates throughout the semester, can be found on the [OSU-Stillwater syllabus attachment](#).

## **Office of Student Accessibility Services**

If you think you have a qualifying disability and need accommodations, contact the Office of Student Accessibility Services as soon as possible to start the registration process and to ensure timely implementation of appropriate accommodations. More information can be found in the [syllabus attachment](#).

While we recognize the need for safety precautions during the current health crisis, we also understand that wearing face masks might be difficult for some students with disabilities or other health conditions. Students requesting an accommodation to OSU's face covering requirement will work with Student Accessibility Services (SAS) to identify reasonable accommodations to the face covering requirement.

## **Other Important Resources**

The OSU community is here for you and wants to provide all the tools and resources to best support your mental health. If you or someone close to you is having a difficult time, our [mental health resources](#) are available to help. Whether it's mental or physical health, we have [student wellness resources](#) to ease the stress of college life.

Reach out to your advisor or instructor if you need support or help in your courses and utilize the many [academic resources](#) available on campus. Our faculty's goal is to assist you, whatever the circumstances might be.

We are working to ensure that your time at Oklahoma State is both safe and formative, and many times that begins with your mental wellbeing.

### **Wellness Days**

OSU has declared three *wellness days* for the semester. There are no classes on these days, and no exams on the day following a wellness day. The dates are:

- Wednesday, Feb 3
- Thursday, Mar 4
- Tuesday, Apr 13

Only the March and April dates affect our class; there will be no class sessions on those dates.