



Syllabus for CMST 116:

Virtual Reality Design and Communication

Winter Quarter, 2019

Bellevue College
Communication Studies

Course Instructors

Bruce Wolcott
E-Mail: bwolcott@bellevuecollege.edu

James Riggall
E-Mail: james.riggall@bellevuecollege.edu

OFFICE/PHONE:	Emergencies only: Leave messages with department staff Arts and Humanities / Communication Studies (R230) (425) 564-2341
OFFICE HOURS:	by appointment
TEXTBOOK:	No required textbook: Optional reference text: <i>The VR Book: Human-Centered Design for Virtual Reality</i> , Jason Jerald
COURSE MEETS:	Tuesday 3PM-5:10PM (D140), Thursday 3PM-5:10PM (D140, Multimedia Theater)

Course Description:

In this course, learn all about virtual reality (VR) and the variety of virtual worlds you can experience using this technology. We'll cover the history of VR, the relationship between VR and other mixed reality technologies, design considerations, communications, hands-on projects as well as social and ethical implications of immersive technologies. While this course is focused on VR and virtual worlds, it is primarily a communication as well as a design theory course, so no prior technical experience is required.

The course will include guest speakers, lectures, readings, case studies, online demos, exploration of virtual reality platforms, and time applied to creating, analyzing and experiencing virtual reality.

A capstone team project will be required to investigate a technical, design, aesthetic, or cultural topic related to virtual worlds communications. Teams will be required to present their projects for peer review, and for subsequent archiving in the course online knowledge base.

Please note: Students in this course will have access to a range of virtual reality and augmented reality technologies throughout the course. If you also have your own headset at home you might find that to be useful as well, but there is no requirement for students to own (or have experience with) virtual reality equipment before starting this course.

Also note:

While we don't require that you buy a textbook to participate in this course, we have used one in the process of developing a lot of the course materials. You will be provided with weekly readings which will be the subject of our discussions in the workshop sessions each week.

If you'd like to get a copy of that textbook (either by purchasing it, or borrowing it from the library) here are the details:

The VR Book: Human-Centered Design for Virtual Reality by Jason Jerald. ISBN: 978-1-97000-112-9

You can buy it online from [Amazon](#) or the [Book Depository](#) (it's available in other places as well).

Online Components:

Virtual Reality Design and Communication is a class which meets one day on campus for lectures, demonstrations, and guest presentations and is scheduled on a second day each week for discussions and hands-on lab exercises. Support materials as well as organized content for the class are available online on the class Canvas site and on the Virtual Worlds website. Weekly objectives are posted on the Canvas website, and students are responsible for keeping up to date with this material and all reading

assignments in preparation for in-class discussions, demonstrations, hands-on exercises, and other in-class activities.

An online Canvas course site will also be used as a supplemental information resource summary for the Virtual Reality class outside of regular classroom hours. On the Canvas Virtual Reality web site, students can also contact the instructor, track their grades, submit assignments, and check the calendar for announcements and deadlines.

Once you are enrolled in the class and the quarter has begun, Bellevue College students will be able to log onto the Canvas class website at <http://bellevuecollege.edu/canvas>. If you need logon assistance, check out <http://depts.bellevuecollege.edu/helpdesk/students/canvas/>

Occasionally, technical problems can block you from accessing the course site. Try switching browsers and if you still can't get onto our site, call the Help at (425) 564-HELP (4357) to troubleshoot your connection issue.

PLEASE NOTE: Other social networking tools will be introduced as needed during the semester to enhance course collaboration.

Virtual Reality Design and Communication Course Outcomes

- Define a variety of key terms associated with virtual reality technologies (such as AR, VR, XR, mixed reality)
- Describe the origin of virtual reality technology and identify its unique features as compared with earlier communications media.
- Analyze, differentiate, and evaluate the differences between current virtual reality devices as well as their respective environments, uses, perils, and promise
- Identify various practical applications for virtual reality technologies in human interaction/communication
- Explain the importance of understanding the relationship between human cognition, perception, interaction, and virtual reality technology
- Analyze social and ethical implications of virtual reality technology
- Describe future of virtual reality technologies and considerations needed for creating, maintaining, and interacting with such technologies

Course Schedule:

The course sections listed below approximately correspond to the weeks of the quarter, but are subject to modification in order to flexibly meet the scheduling requirements of this hybrid learning class. Consequently, this schedule may need to be adjusted or modified as the quarter progresses. The instructor may alter the course to accommodate curriculum and schedule changes, as needed.

More detailed information can be found on the class Virtual Reality Design and Communication open access site (virtual-worlds.squarespace.com).

Weekly Schedule:

Tuesdays, 3:00PM to 5:10PM

Classes will meet in the Bellevue College Library XR Lab space (D140) for lectures, films, discussions, and guest presenters related to the week module topic. The following week's reading and viewing will be assigned.

Thursdays, 3:00PM to 5:10PM

Classes will meet in the Bellevue College Library XR Lab space (D140). During this period students will be involved with hands-on projects, demos, discussions, planning sessions and team collaborations. Required assignments, as well as weekly reading and viewing will be reviewed.

Weekly Discussion Posting:

Students will be required to post three takeaway ideas for each week's in-class discussions. These discussion topic ideas will be taken from a variety of class resources – the lecture, guest presenters, missions and reading covered within that week's subject matter. These ideas will become part of live in-class discussions. Your progress and participation in these discussions will be reviewed throughout the quarter.

MODULE SECTIONS

WEEK 1: WHAT IS VIRTUAL REALITY?

TOPICS:

- LECTURE: Introduction to Virtual Reality
- Virtual reality concepts and definitions – AR, VR, XR, Mixed Reality
- Discussion: VR as an "empathy machine"

WEEK 2: THE HISTORY OF VIRTUAL REALITY

TOPICS:

- LECTURE: History of Virtual Reality, from Greek theater to immersive worlds
- Virtual reality concepts and definitions – AR, VR, XR, Mixed Reality

WEEK 3: IMMERSION AND PRESENCE**TOPICS:**

- LECTURE: Immersion and Presence in VR

WEEK 4: UNDERSTANDING PERCEPTION**TOPICS:**

- LECTURE: Understanding Human Perception in virtual environments
- The science and theory of human sensory and cognitive systems
- Multi-sensory interactions with virtual environments

WEEK 5: INTERFACES AND INTERACTION**TOPICS:**

- LECTURE: Virtual Reality Interfaces and Interaction
- Definitions and fundamental principles of interaction with virtual environments
- User interface design
- Interface devices

WEEK 6: SOCIAL WORLDS**TOPICS:**

- LECTURE: Social Worlds and Virtual Communities
- Lessons learned from early online social worlds: Habitat, WorldsChat, AlphaWorld, Second Life and multiuser games (MMOGs)
- Player/User types: Achievers, Playerkillers, Socializers, Explorers
- New VR social worlds: Facebook, Rec Room, Pluto VR, Ugen, Ubisoft StarTrek
- Flat screen versus immersive VR experiences and social interactions

WEEK 7: STORYTELLING IN VIRTUAL WORLDS**TOPICS:**

- LECTURE: Storytelling in Virtual Worlds
- Unique features of VR storytelling versus narrative in films, books or TV
- Story structures: linear, branching, alternative endings
- The role of POV in virtual storytelling
- Guiding user interactions and experiences through environmental storytelling
- The role of artificial intelligence in VR storytelling

WEEK 8: SERIOUS APPLICATIONS OF VIRTUAL REALITY

TOPICS:

- LECTURE: VR for entertainment versus applied communications
- Simulations for training, pain diversion, treatment of phobias, marketing, manufacturing, remote viewing and other applications
- Collaborative multi-participant idea spaces
- VR/AR in education – the long distance learning lab

WEEK 9: SOCIAL AND ETHICAL CONSIDERATIONS

TOPICS:

- LECTURE: The promise and peril of advanced virtual reality technologies
- VR social issues: addiction, surveillance, bullying, social isolation, propaganda
- Social and ethical considerations for VR experience design

WEEK 10: THE FUTURE OF VIRTUAL REALITY

- LECTURE: Future trends in virtual reality technologies
- Artificial intelligence, human-computer evolution and the Singularity
- VR as a tool for global team collaborations and problem solving
- Career opportunities in virtual reality design – where do I go from here?

Week 11: CAPSTONE TEAM PROJECTS

Team-based Capstone Project Presentations

Week 11 Content: Final Project grade criteria

- Following specifications
- Working in teams
- Project presentation delivery

ASSESSMENTS

This course has three major assessment components, including attending classes and actively participating in class discussions and activities, completing weekly missions that are based on the theme and content materials for each week, as well as completing a major VR design project in which you will develop documentation for a virtual world of your own design. This section provides a very brief overview of each assessment task. Additional detail can be found on the course open access website (virtual-worlds.squarespace.com).

01.

Course Participation and Discussion Posting (20%)

Points for course participation will be awarded for attending classes and actively participating in class discussions and activities. To effectively participate in class discussions, you will also need to do the course readings and required viewing each week. Each week, three take-away ideas from course weekly topic materials or presentations will be posted to a discussion board.

02.

Weekly Missions (60%)

Each week you will have a choice of among a number of missions that you can complete for course credit. You will need to do one of these missions each week to receive the maximum number of points for this component of the course.

03.

Major Project (20%)

The final assessment task for this course is a capstone project in which you will create a self-directed project, either on your own or within a team, on a topic related to virtual or augmented reality. This assignment will consist of three parts: A 1) written paper or virtual reality project, 2) a presentation, and 3) a self-reflection document. You can submit your assignment as a document, or a video, a prototype, or in some other form.

Guest speakers

During our 2-hour lecture blocks, we'll regularly invite guest speakers into the classroom to participate in interviews or give a guest presentation. These talks will include a number of successful people who are currently working in VR or virtual world design, predominantly in the US and Australia.

International connections

This course is a kind of experiment, where we are connecting classrooms across international borders. While our core group of students will be those who are enrolled in the course at Bellevue College in Washington State, USA, we'll also have a number of students participating in the course from the University of Tasmania and Launceston

College in Tasmania, Australia. Throughout this course, you will have a chance to meet and interact with students from another part of the world (albeit virtually/using technology).

Course Policies and Procedures:

SYLLABUS CHANGES:

Contents of this syllabus as well as course policies and procedures may be changed at any time during the quarter at the instructor's discretion.

ONLINE AND CLASSROOM ETIQUETTE

Just as in any public environment, disruptions and impoliteness are not tolerated; neither will they be tolerated within the confines of our online "classroom." Students are to show respect towards each other and their instructor, which includes respect and tolerance for each other's ideas. Any sort of disrespect will, at the very least, impact negatively on your class participation grade.

Unless you are working on class-related projects or taking notes, classroom computer monitors are to be turned off. Also leave cell phones and music players turned off during class periods.

This course adheres to the following policy guidelines:

Cheating, stealing and plagiarizing (using the ideas or words of another as one's own without crediting the source) and inappropriate/disruptive classroom behavior are violations of the student code of conduct. Examples of unacceptable behavior include, but are not limited to: talking out of turn, arriving late or leaving early without a valid reason, allowing cell phones/pages to ring, and inappropriate behavior toward the instructor or classmates.

If you are found to have cheated or copied for any assignment or exam you will forfeit your grade for the assignment, and possibly a failing grade. Cheating includes copying other people's work, with or without their permission, and using content from a Web site, book, or other source without quoting that content or citing sources. For additional information review the **Policies and Procedures** page.

(*If you are accused of Cheating, Stealing Exams, and/or Plagiarism, there is a Bellevue College Discipline and Appeals Procedure (the right to due process) which you may pursue. Contact the Business Division Chair in Business Division office (A242), or the Dean of Student Services (B231A), or the Associated Student Body offices (above the Cafeteria) for information regarding the appeals process.)

GRADING

Course grades will be assigned based on the percentage of the total points a student receives for their missions, discussions, and team projects.

It is a Communication Studies Program policy that any grade lower than C- is not considered adequate for completion of the class as a Program Degree or Certificate requirement or as a prerequisite for any other program courses.

CLASS ATTENDANCE:

Attendance at all scheduled class meetings is mandatory. This requirement is particularly meant to apply to courses that are designated for classroom delivery, although distance education courses may also have certain attendance requirements. This requirement is intended 1) to prevent instructors from having to adjudicate individual excuses, and 2) to recognize that excuses are ultimately irrelevant both here at Bellevue College and in the workplace.

A roll call will be taken at the beginning of each class. If you aren't present when your name is called, you will be marked absent for that day. More than three unexcused absences during the quarter will result in your final grade being marked down one letter grade. Example: a B- would be marked down to a C-. For more information regarding my attendance policy, check the Getting Started section called *About Writing Essays, Attendance, and Plagiarism*.

If you are absent for a class or need to leave early, you need to let me know the reason for your absence either verbally or by Canvas email before the class begins, or it will be counted as an unexcused absence.

SYLLABUS CHANGES:

Contents of this syllabus may be changed at any time during the quarter at the instructor's discretion.

GRACE PERIOD for PROJECTS:

A grace period of two days is given for each assignment except the final project. No assignment will be accepted after the two day grace period has expired, unless explained unexpected circumstances are provided to warrant an extended deadline. For more information regarding expectations for assignment writing and content, review the **Assignments and Writing** page.

COURSE WITHDRAWAL:

College policy states that students must formally withdraw from a class by the end of the seventh week of the quarter. (For assistance contact the Registration Office in B125). If a student has not withdrawn by that date, an appropriate letter grade will be assigned for the course.

CLASS EVALUATION

During the quarter, you may receive instructions on providing feedback about the class you are taking. This evaluation will only take a few moments of your time. Please ask the instructor any questions you may have about this process.

STUDENT SERVICES

The project work submitted this quarter will make use of your presentation, and writing skills to assess your understanding of the class content. If you need help with your writing skills, please make use of the Writing Lab in D-204 (425-564-2400). If you have (or think you might have) a disability that will have an impact on your learning, please take the time to register with Disability Resource Center in B132 (425-564-2498) within the first week of the quarter. In that way, you can properly notify your instructor of your disability and meet to discuss its implications on your class work or attendance.

For more information, visit the Student Services Information Page.

MEETINGS WITH THE INSTRUCTOR

By appointment only.

Additional Information

Virtual Reality Design and Communications (Item# 0717) is a fully accredited special topics class which meets on campus on Tuesdays and Thursdays from 3:00PM to 5:10PM in the Bellevue College Collaboratory space (D140). For more information contact Bruce Wolcott – bwolcott@bellevuecollege.edu