Summer 2019 Course Syllabus

Part 1: Course Information

Instructor Information

- **Instructor:** Forest Peterson
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Course Description

Introduction to the Virtual Design and Construction Workflow organization, processes, and technology.

Total contact hours: 54

Units: 3

Meets weekly June 4 to July 27 at Yerba Buena High School

- Tuesday and Thursday classes are from 9 am to 10:35 am
- Saturday classes are from 9 am to 11:50 am
- Additional team independent collaboration hours as needed

Course Materials

As a project-based learning format, this course does not use textbooks. Content is available as needed and students are expected to source information from the internet as needed. The instructor will make material available as needed.

Course Requirements

- Internet connection (DSL, LAN, or cable connection desirable)
- Laptop with webcam, microphone, and speakers
- Access to Zoom video conferencing
- Transportation to Yerba Buena High School

Online Course Structure

This is a partially-online course. At designated times throughout the semester, you will participate in a blend of self-paced and group-paced activities. The core learning activities can be completed on your own time. Note that this syllabus, along with course assignments and due dates are subject to change. It is your responsibility to check email announcements for corrections or updates to the syllabus.

Part 2: Student Learning Outcomes & Objectives

Student Learning Outcomes

- Describe project delivery methods.
- Evaluate VDC team roles and responsibilities.
- Estimate a cost to benefit tradeoff of VDC.
- Define and set up a shared file transfer site.
- Develop a VDC execution plan.

Course Objectives

- Introduction to Virtual Design and Construction (VDC)
  - Technology
    - Processes
    - Roles and responsibilities
    - Education
    - Budgeting
  - The iRoom
  - Transferring "work packages"
  - Standardization of technologies
  - Technology platform alignment and coordination across teams
  - File sharing sites
- Building Information Modeling (BIM) (3D)
  - Software choices
  - Related services
  - 3D Processes
  - Software interoperability
- Clash Detection
  - Software choices
  - Identifying and resolving clashes between trades
  - Documenting who will move what
  - Collaborating virtually

- Scheduling (4D)
  - Software choices
  - Integration of 3D model and schedule
  - Define activities and applied resources by means and methods of trades
  - Clash detection of workspace
- Cost Estimating (5D)
- Cost Control, Quality Control (QC), and Quality Assurance (QA) (6D)
  - Systems set up between accounting and the project
  - Budget cost vs. actual costs
  - Industry adoption of technology
  - Plans and specifications
  - Field technologies, such as tablets
  - QA and QC Inspections
- Facility Management
  - Software tools for collecting and managing data
  - Integration of building operations with technologies and access to data
  - Set up, configuration, requirements, and integration plan

You will meet the outcomes listed above through a combination of the following activities in this course:
- Attend lectures
- Complete the virtual design and planning of a project
- Participate in project-based collaboration and virtual mentoring sessions
- Participate in presentations of your project

Part 3: Topic Schedule

Important Note: Activity details are explained within each week's corresponding learning module. If you have questions, please contact your instructor.

- **Week 01: Production management**
  - Welcome
  - Goal and course success metrics
  - VDC Introduction
  - Production management principles
  - Production management applications
- **Week 02**
  - **Part A: Performance metrics**
    - Construction performance metrics
    - Product, organizations, process metrics
  - **Par B: Design modeling**
    - Building energy metrics
    - Energy modeling

- **Week 03: Project-based learning for design**
- **Week 04: Project planning and control**
  - Scope (3D), Schedule (4D), Cost (5D), and Controls (6D)
  - Integrated Concurrent Engineering
  - Computational design optimization for safety and environment
- **Week 05**
  - **Part A: Application of BIM over the lifecycle**
  - **Part B: Project-based learning for planning**
- **Week 06: Social justice**
  - VDC in social justice
  - VDC integration
- **Week 07: Project-based learning for social justice**
- **Week 08: Implications, limitations, and final presentations**

Part 4: Grading Policy

Letter Grade Assignment

Final grades assigned for this course are based on a percentage of total points earned out of total possible and are assigned as follows:

Letter Grade	Performance out of total possible points	Performance
A	90-100%	Likely to get you into graduate school
B	80-89%	Helps to get a higher paying job
C	70-79%	Satisfies major requirements
D	60-69%	Does not satisfy major requirements, limited units allowed to count as total units, and too many means you cannot transfer to a State University
F	0-59%	Does not satisfy any requirements

Important note: For more information about grading at Evergreen Valley College, visit the academic policies and grading section of the university catalog.

Part 5: Course Policies

Participation

In addition to the quality of your work, you are graded on your participation. You must participate in all presentations to deliver your project scope of work. Presentations will be weekly and this is your opportunity to demonstrate your collaboration with your team and within the construction community.

Build Rapport

If you have trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. Building rapport with others is key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that they can help you find a solution.

Complete Assignments

If you cannot submit an assignment by the deadline then you need to obtain permission from the instructor *before the due date*.

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider disenrolling from a course. Refer to the EVC Course Schedule for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons include: (1) documented and significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Incomplete Policy

Due to the project-based learning format of this course, an incompletion is not possible.

Inform Your Instructor of Any Accommodations Needed

If you have a disability and would like to request accommodations, please contact the instructor during the first week of the semester so that your accommodations may be provided in a timely manner. Disabilities Support Program (DSP) provides assistance in determining and facilitating appropriate accommodations for students with verified disabilities. The DSP office is located on the first floor of the Student Services building (SC 120).

Evergreen Valley College's Student Code of Conduct

Student conduct is governed by rules designed to preserve both individual and community freedoms. The individual student, in order to learn and grow, must enjoy freedoms of expression and action. The academic community, if it is to properly serve the student, must enjoy freedom from disruption. Students enrolling in the College assume an obligation to conduct themselves in a manner compatible with the College's function as an educational institution, and in accordance with the Student Code of Conduct.

The project-based learning format of this virtual design and construction course limits the opportunities for plagiarism and cheating. That said, for clarity, plagiarism and cheating are defined here as well as consequences of plagiarism and cheating.

Plagiarism

It is important to acknowledge sources you use information and examples. Failing to acknowledge sources is considered plagiarism which is a form of academic dishonesty.

Plagiarism may be any one of the following:

1. Verbatim copying without acknowledging your source(s).
2. Paraphrasing without acknowledging your source(s).
3. Unacknowledged appropriation of information or ideas acknowledging your source(s).

If students have questions about plagiarism or an assignment they are preparing, please ask your instructor for clarification; do not risk unintentional plagiarism.

Cheating

Honesty is important. Your subject matter examinations or other forms of evaluation must represent an individual's work, knowledge, and experience. You are expected to follow the rules established by your instructor.

Cheating may be any one of the following:

1. Procuring information from an unauthorized source or from another student's work.
2. Obtaining unauthorized knowledge of exam questions prior to the examination time.
3. Changing a graded exam and resubmitting it as original work for grading.
4. Assisting another student in cheating.

This list is not all-inclusive and does not limit the definition of cheating.

Consequences of Code of Conduct Violations

Disciplinary actions for plagiarism or cheating is to the instructor's discretion. An option is to refer the student to the Vice President of Student Services for disciplinary action.