

# EGN6933: Online Pedagogy for Engineers (Fall 2020)

## Instructor:

- Dr. Idalis Villanueva (Dr. V)

## Class Times:

- Tu 11:45am-1:40pm (asynchronous in Canvas)
- Th 12:50 pm-1:40pm (synchronous via Zoom)

**Location:** Unless specified, classes will be in Canvas/Zoom

## Offline Office Hours Options:

- For short questions: Text me at (352)-448-9513 on Tuesdays between 8pm to 10pm ET
- For longer questions: Set up an appointment via email (i.villanueva@ufl.edu) or text at (352)-448-9513



Photo from Canva Pro  
[Alt-Text: A laptop, a tablet, and a phone side by side]

## Description: A Graduate Course for Novices in Remote Teaching

The Online Pedagogy for Engineers course is a semester-long, remote course aimed to introduce novice engineering and computer science graduate students with best practices and strategies in online education. Through a learning community of practice, students in this course will learn about relevant learning theories, course development, assessment, accessibility, and inclusion in an online platform. Students will collaboratively identify resources to disseminate learned content to the engineering or computer science education community.

## Course Objectives

- ☒ Synthesize learning objective(s) and online teaching material(s) for an engineering or computer science topic
- ☒ Develop effective synchronous and asynchronous delivery strategies for an engineering or computer science topic
- ☒ Evaluate the effectiveness of developed materials for given learning objective(s) in an engineering or computer science topic.
- ☒ Participate in an online, engineering community of practice and organize ways to share the lessons learned with other engineering or computer science peers

## Course Pre-Requisite

To enroll in the course you must be a current graduate student at the University of Florida in an engineering or computer science discipline.

## Required Textbook, Materials & Supply Fees

All materials provided in this course are open-source. I will provide you with details in Canvas if you are interested in purchasing the materials in print. There are no materials or supplies fees for this course.



Photo of Dr. V

[Alt-Text: A photo of the course instructor]

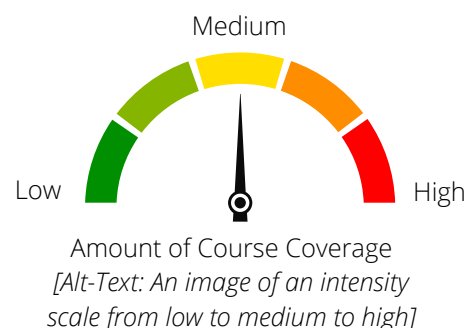
## My Teaching Philosophy

I am a strong advocate for experiential learning (EL) and socio-cultural learning (SCL). EL is a philosophy and method where "educators purposefully engage students in direct experiences and use focused reflection activities to increase knowledge, develop skills, and clarify values" (Association for Experiential Education). SCL, from Vygotsky, suggests that individuals can learn lessons from each other in a socially and culturally diverse setting.

I also recognize that some of these concepts are new and will require a substantial repetition of concepts to help you develop the mental models needed to put into practice what has been learned. As such, "learners who are encountering not just one concept but an overwhelming number of new terms and concepts have to work hard to make sense of this new information by attaching the incoming knowledge to existing nodes and patterns. This requires effort, time, and practice" (Boettcher & Conrad, 2016, p.31). But don't worry, it is my job to be there to support you and facilitate this process!

## Professional Component (ABET)

- ☒ Communicate effectively [both in written and oral form during instruction]
- ☒ Ability to use the techniques, skills, and modern [education] tools necessary for [disciplinary] educational practice
- ☒ Know contemporary issues [important in online discipline-specific education]
- ☒ Apply a doctoral level knowledge in a specialized area [of your discipline]



## Recommended Materials



Digital Library

[Alt-Text: An image of a book in the cloud]

Throughout the semester, you will be provided with a "Digital Library" that each week will be updated according to the course topic. It is strongly recommended that you at least review a couple of these resources each week as they were purposefully selected to assist you in your assignments and your final project. More details will be provided later in this syllabus and Canvas.

## Course Schedule

(2020 Calendar from NYCDesign.Co)

| AUGUST |    |    |    |    |    |    |
|--------|----|----|----|----|----|----|
| Su     | Mo | Tu | We | Th | Fr | Sa |
|        |    |    |    |    |    | 1  |
| 2      | 3  | 4  | 5  | 6  | 7  | 8  |
| 9      | 10 | 11 | 12 | 13 | 14 | 15 |
| 16     | 17 | 18 | 19 | 20 | 21 | 22 |
| 23     | 24 | 25 | 26 | 27 | 28 | 29 |
| 30     | 31 |    |    |    |    |    |

| SEPTEMBER |    |    |    |    |    |    |
|-----------|----|----|----|----|----|----|
| Su        | Mo | Tu | We | Th | Fr | Sa |
|           |    | A  | 2  | S  | 4  | 5  |
| 6         | 7  | A  | 9  | S  | 11 | 12 |
| 13        | 14 | A  | 16 | S  | 18 | 19 |
| 20        | 21 | A  | 23 | S  | 25 | 26 |
| 27        | 28 | A  | 30 |    |    |    |

| OCTOBER |    |    |    |    |    |    |
|---------|----|----|----|----|----|----|
| Su      | Mo | Tu | We | Th | Fr | Sa |
|         |    |    |    | S  | 2  | 3  |
| 4       | 5  | A  | 7  | S  | 9  | 10 |
| 11      | 12 | A  | 14 | S  | 16 | 17 |
| 18      | 19 | A  | 21 | S  | 23 | 24 |
| 25      | 26 | A  | 28 | S  | 30 | 31 |

| NOVEMBER |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|
| Su       | Mo | Tu | We | Th | Fr | Sa |
| 1        | 2  | A  | 4  | S  | 6  | 7  |
| 8        | 9  | A  | 11 | S  | 13 | 14 |
| 15       | 16 | A  | 18 | S  | 20 | 21 |
| 22       | 23 | H  | 25 | H  | 27 | 28 |
| 29       | 30 |    |    |    |    |    |

| DECEMBER |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|
| Su       | Mo | Tu | We | Th | Fr | Sa |
|          |    | A  | 2  | S  | 4  | 5  |
| 6        | 7  | A  | 9  | S  | 11 | F  |
| F        | F  | F  | F  | F  | F  | 19 |
| 20       | 21 | 22 | 23 | 24 | 25 | 26 |
| 27       | 28 | 29 | 30 | 31 |    |    |

### LEGEND:

- A** Asynchronous (At your own pace in Canvas; no "live" classes on Tuesdays)
- S** Synchronous (We meet virtually via Zoom every Thursday; Be ready to discuss what you learned on your own that week)
- H** Holiday/Reading Day/ No Class
- F** Finals Week

### List of Topics/Assignments by Week and Foci

#### PART I. ONLINE INSTRUCTIONAL DESIGN FOR ENGINEERING

- Week 1. Developing an online teaching philosophy in engineering education
- ➡ Week 2. Online course-mapping (e.g., syllabus, learning objectives)
- Week 3. Purposeful online course design for accessibility and inclusion
- ➡ Week 4. Intentional classroom interactions and community-building
- Week 5. Free-mium tools for online instructional design

#### PART II. ONLINE INSTRUCTIONAL PRACTICE FOR ENGINEERING

- Week 6. Community of Inquiry framework
- ➡ Week 7. Teaching, social, and cognitive presence
- Week 8. Cultural communication and context of learners
- ➡ Week 9. Disciplinary teaching considerations in engineering
- Week 10. Students' rights and copyrighting issues
- ➡ Week 11. Free-mium tools for online instructional practice

#### PART III. ONLINE ASSESSMENT AND EVALUATION FOR ENGINEERING

- ➡ Week 12. Formative and summative assessment
- Week 13. Evaluating the success of your online education course in your discipline
- ➡ Week 14. Free-mium tools for online assessment and evaluation

➡ Indicates a homework or project is assigned;  
refer to Canvas for additional information



## Homework and Project Overview



Disclaimer Image

[Alt-Text: An image of a certification mark with the word "Disclaimer" on its end]

For all intents and purposes, you will have on average, two weeks from the day of the homework posting to complete your assignment. All assignments will be due **Wednesdays at 5pm ET in Canvas**. More details will be provided in Canvas.

- **Assignment 1 (Week 2).** Develop an online course syllabus and learning objectives for your disciplinary area of expertise. For this, you may have to identify an engineering or computer science topic of your choosing.
- **Assignment 2 (Week 4).** Convert your syllabus to an accessible form using Alt-Text and Free-mium tools, either covered in class or that you discovered. If the latter, you will have to provide a video tutorial on its use as part of your assignment.
- **Assignment 3 (Week 7).** Develop your own discussion board or chat around a topic of interest in your discipline. Apply rules of netiquette and develop a rubric for appropriate interactions in these discussions.
- **Assignment 4 (Week 9).** Identify an engineering topic of interest in your area of expertise. Seek the literature and web sources to see if this topic has been taught online. If you don't any evidence for your topic, you will have to find an alternative. Reflect on what you would like to add in your lecture and map out a lesson outline.
- **Assignment 5 (Week 11).** Deliver, in an online platform, the first draft of your asynchronous online lesson. You will have 15-20 minutes to share knowledge about an engineering or computer science topic of your choice as if you were the instructor of a class or were giving a lecture about the topic to a general and broad audience. This assignment will require peer-review and feedback.
- **Assignment 6 (Week 12).** Develop a short assessment that aligns with your learning objective for your lesson. Indicate if you developed a formative or summative assessment and explain your rationale. For the item you did not develop an assessment for, explain what you would do to attend to your learning objective.
- **Final Project (Week 14).** Using free-mium tools you have identified or that were covered in class, refine your asynchronous online lesson as well as the syllabus, assessments, rubric pertinent to the pedagogy and learning of this topic. Make sure you have attended to rules of netiquette, accessibility, inclusion, and presence covered in the class.

## Evaluation of Grading and Grading Policy

Asynchronous Participation- 15% (10 pts/ea)  
Synchronous Participation/Attendance- 15% (10pts/ea)  
Assignments - 40% (100pts/ea)  
Project- 30% (200 pts)

| Percent (%) | Grade | Grade Points |
|-------------|-------|--------------|
| 93.4 - 100  | A     | 4.00         |
| 90.0 - 93.3 | A-    | 3.67         |
| 86.7 - 89.9 | B+    | 3.33         |
| 83.4 - 86.6 | B     | 3.00         |
| 80.0 - 83.3 | B-    | 2.67         |
| 76.7 - 79.9 | C+    | 2.33         |
| 73.4 - 76.6 | C     | 2.00         |
| 70.0 - 73.3 | C-    | 1.67         |
| 66.7 - 69.9 | D+    | 1.33         |
| 63.4 - 66.6 | D     | 1.00         |
| 60.0 - 63.3 | D-    | 0.67         |
| 0 - 59.9    | E     | 0.00         |

More information on UF grading policy may be found at:  
<http://gradcatalog.ulf.edu/content.php?catoid=10&navoid=2020#grades>

## Classroom and University Policies

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### Attendance Policy, Class Expectations, and Make-Up Policy

Attendance to the synchronous Zoom session on Thursdays are mandatory and will be accounted by your online participation (at least in chats). Professional and respectful participation will be graded via your submissions to the assignments and project and your online engagement to the Tuesday and Thursday activities. In this class, there will be a steep learning curve and I expect you to work hard and actively take ownership of your learning. At the same time, I understand that life happens at times and you may miss an assignment/activity without a documented excuse. You will be given a chance to turn in that assignment at a later time upon communicating with me but keep in mind that it will come with a 25% deduction of that grade. Subsequent missed assignments must be for excused reasons. Excused absences must be in compliance with university policies in the Graduate Catalog (<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance>) and require appropriate documentation.

### Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing a course evaluation online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

### University Honor Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or

concerns, please consult with the instructor or TAs in this class.

### Commitment to a Safe and Inclusive Learning Environment



Safe and Inclusive Learning Environment

[Alt-Text: An image with a puzzle piece of different colors with a hand]

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, (352) 392-0903, rbielling@eng.ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, (352) 392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, (352) 392-0943, nishida@eng.ufl.edu

### Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.



Software Use Image  
[Alt-Text: An image of a cell phone with a wrench and coding symbol in the middle]

### Online Course Recording

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.



## Campus Resources

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### Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>,



Student Privacy Image  
[Alt-Text: An image of a person's shadow and a lock on the right]

### Health and Wellness



Health and Wellness Image  
[Alt-Text: An image of a person leaping in the air]

#### **U Matter, We Care:**

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress.

A nighttime and weekend crisis counselor is available by phone at (352) 392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

#### **Counseling and Wellness Center:**

<http://www.counseling.ufl.edu/cwc> or (352) 392-1575

#### **University Police Department:**

(352) 392-1111 or 9-1-1 for emergencies or <http://www.police.ufl.edu/>

#### **Sexual Discrimination, Harassment, Assault, or Violence:**

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the Office of Title IX Compliance, located at Yon Hall Room 427, 1908 Stadium Road; (352) 273-1094; [title-ix@ufl.edu](mailto:title-ix@ufl.edu)

#### **Sexual Assault Recovery Services (SARS)**

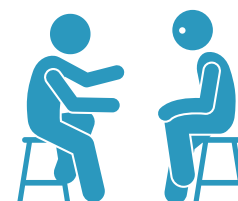
Student Health Care Center; (352) 392-1161.

## Academic Resources

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#### **E-learning technical support:**

(352) 392-4357 (select option 2) or e-mail ([Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)); <https://lss.at.ufl.edu/help.shtml>.



Career Assistance and Counseling Image  
[Alt-Text: An image of a person on the left giving advice to the person on the right]

#### **Career Assistance and Counseling:**

<https://www.crc.ufl.edu/>

**Career Resource Center:**

Reitz Union; (352) 392-1601

**Library Support:**

<http://cms.uflib.ufl.edu/ask>; there are various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center:**

Broward Hall, (352) 392-2010 or (352) 392-6420; provides general study skills and tutoring; <https://teachingcenter.ufl.edu/>

**Writing Studio:**

302 Tigert Hall, (352) 846-1138; helps with brainstorming, formatting, and writing papers; <https://writing.ufl.edu/writing-studio/>.

**Student Complaints Campus:**

<https://care.dso.ufl.edu>

**On-Line Students Complaints:**

<http://www.distance.ufl.edu/student-complaint-process>.



Student Complaints Image

[Alt-Text: An image of a file with a person's picture and checkmarks of approval or disapproval]

DISCLAIMER: For all intents and purposes, the order of topics provided in this syllabus may change. Any changes will be reflected in Canvas and will take precedence over what was stated in this document.