

Representation of Key Concepts: Independent Assignments

You are to pick one concept from the first two of the major modules—transmission lines, fundamentals of electricity and magnetism—and one concept from the second set of module— wave propagation, antennas—and present that concept in as many different representations as possible. Thus over the course of the semester you will make a presentation on two different concepts.

Representations can include (but are not limited to):

- written or verbal descriptions,
- formulas and equations
- Matlab code (only Matlab)
- schematics
- computer animations
- sounds/music
- dramatic productions
- interpretive dance
- stories
- physical devices (actual devices, pictures, video clips, demonstrations)

To present the representation you will make a short video production from the representations you choose that will be posted to a class public YouTube channel. The maximum video length is 4 minutes. You may include other resources with the video such as code, animations, etc. but they will need to be available electronically and of reasonable size.

The grade will depend on the both the correctness of the conceptual representations as well as a popular class (and potential others) vote. You must choose your own concept and have that concept approved by the instructor before beginning your video. You may work together in whichever ways you choose, but one person will be responsible for, and receive the grade for one video.

The intended audience for your presentations should be undergraduate students who are not (necessarily) engineers.

Anything goes, but you must cite sources and not violate copyright. Any video that uses plagiarized material or copyrighted material without permissions will receive a grade of zero. You should use a Creative Commons license to protect your work.

Keep things simple! Be creative! Have fun!

		5 = Excellent	4	3 = Expected	2	1 = Lacking
Content	Addresses a Meaningful and Relevant Concept	The presentation and choice of the concept connects ideas together, and is relevant to the material taught in ELEC390.	Somewhere between 3 and 5	The presentation and choice of the concept is correct but does not succeed in connecting ideas together. Some focus on recitation of facts, but is relevant to the material taught in ELEC390.	Somewhere between 1 and 3	The presentation and choice of the concept fails to connect ideas together, seems focused on recitation of facts, or is not relevant to the material taught in ELEC390.
	Uses Valid Analogies and Multiple Representations	Uses at least four different representations of the concept and all the representations draw valid analogies that help explain the concept.		Uses at least three different representations of the concept and all the representations use some type analogies that help explain the concept.		Uses less than three different representations of the concept. Analogies are confusing and/or false.
	Supports Learning for a Specific Target Audience	The content of the video is appropriate for non-engineering students. The presentation matches the target audience. Ideas the audience may not be familiar with are explained well and completely.		The content of the video is appropriate for non-engineering students. The presentation generally reaches the target audience with a few lapses. Ideas the audience may not be familiar with are explained, but not always clearly.		The content of the video is clearly not appropriate for non-engineering students who are interested in engineering. Content has offensive elements. Ideas the audience may not be familiar with are not explained.
	Tells an Interesting and Coherent Story	Storyboard helped aid identification of resources and little to no holes were found within the story. Narration clearly has a well written argument with a strong thesis, introduction, body, and conclusion. The pace (rhythm and voice punctuation) fits the story line and helps the audience really "get into" the story.		Storyboard somewhat grasped the connection between images and audio. Some holes were found within the story. Narration captures some elements of an essay. Occasionally speaks too fast or too slowly for the story line. The pacing (rhythm and voice punctuation) is relatively engaging for the audience.		Storyboard was not well thought out and did not visually represent connection between images, music, transitions, titles, effects, and/or narration. Many holes in story were found. Narration needs work and does not embody the elements of an essay. No attempt to match the pace of the storytelling to the story line or the audience.
	Technical Quality of the Video	Images create an appropriate atmosphere or tone and appropriately reflect and match narration. Effects and transitions were used appropriately and consistently and aided in the development of story.		Images create an atmosphere or tone that matches some parts/narration of the story. Effects and transitions were somewhat inconsistent or overused yet did not disrupt the overall message of the story.		Little or no attempt to use images to create an appropriate atmosphere or tone. Effects and transitions were not used appropriately and were inconsistent. They were distracting, therefore taking away from the authenticity and message of story.
Interest	Appropriate and Engaging (Audience Rating)	Rated in the top three videos by audience comments and feedback.		Mixed reviews of the video.		Feedback is uniformly negative.

