Purdue University-Credit
Spring 2024 16 Week 4/15-4/28 (1)

Course: wl.202420.ME.59700.124.14760: Distributed Energy Resources
Instructor: Kevin Kircher *
Response Rate: 16/26 (61.54 %)

1 - YOUR CLASS

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Fresh	(1)	0	0.00%		
Soph	(2)	0	0.00%		
Jr	(3)	0	0.00%		
Sr	(4)	1	6.25%		
Grad	(5)	15	93.75%		
Other	(6)	0	0.00%		
				0 25 50 100	

Response Rate
16/26 (61.54%)

2 - EXPECTED GRADE

Response Option	Weight	Frequency	Percent	Percent Responses	Means
A	(1)	13	81.25%		
B	(2)	3	18.75%		
C	(3)	0	0.00%		
D	(4)	0	0.00%		
F	(5)	0	0.00%		
Pass	(6)	0	0.00%		
Fail	(7)	0	0.00%		
				0 25 50 100	

Response Rate
16/26 (61.54%)

3 - COURSE REQUIRED

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Required for your major/minor	(1)	6	37.50%		
Required by school/University	(2)	0	0.00%		
Elective	(3)	10	62.50%		
				0 25 50 100	

Response Rate
16/26 (61.54%)

4 - YOUR SCHOOL

Response Option	Weight	Frequency	Percent	Percent Responses	Means
AG	(1)	0	0.00%		
ED	(2)	0	0.00%		
ENGR	(3)	15	93.75%		
HHS	(4)	0	0.00%		
LA	(5)	0	0.00%		
MGMT	(6)	0	0.00%		
PHARM	(7)	0	0.00%		
SCI	(8)	0	0.00%		
PPI	(9)	0	0.00%		
VET MED	(10)	0	0.00%		
UNDECLARED	(11)	1	6.25%		
				0 25 50 100	

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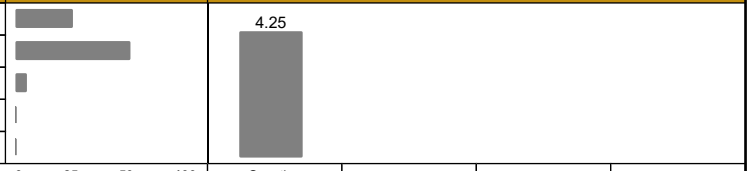
5 - The course is well organized.

Response Option	Weight	Frequency	Percent
Strongly Agree	(5)	5	31.25%
Agree	(4)	10	62.50%
Neither Agree nor Disagree	(3)	1	6.25%
Disagree	(2)	0	0.00%
Strongly Disagree	(1)	0	0.00%



Response Rate	Mean	STD	Median
16/26 (61.54%)	4.25	0.58	4.00

6 - The assignments aid me in achieving the class objectives.

Response Option	Weight	Frequency	Percent
Strongly Agree	(5)	8	50.00%
Agree	(4)	6	37.50%
Neither Agree nor Disagree	(3)	2	12.50%
Disagree	(2)	0	0.00%
Strongly Disagree	(1)	0	0.00%

Response Rate	Mean	STD	Median
16/26 (61.54%)	4.38	0.72	4.50

7 - The projects or laboratories aid me in achieving the class objectives. [where relevant]

Response Option	Weight	Frequency	Percent
Strongly Agree	(5)	8	50.00%
Agree	(4)	4	25.00%
Neither Agree nor Disagree	(3)	3	18.75%
Disagree	(2)	1	6.25%
Strongly Disagree	(1)	0	0.00%

Response Rate	Mean	STD	Median
16/26 (61.54%)	4.19	0.98	4.50

8 - The tests or exams aid me in achieving the course objectives. [where relevant]

Response Option	Weight	Frequency	Percent
Strongly Agree	(5)	5	31.25%
Agree	(4)	4	25.00%
Neither Agree nor Disagree	(3)	7	43.75%
Disagree	(2)	0	0.00%
Strongly Disagree	(1)	0	0.00%

Response Rate	Mean	STD	Median
16/26 (61.54%)	3.88	0.89	4.00

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9 - The instructor communicates clearly.

Kevin Kircher

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Strongly Agree	(5)	16	100.00%		5.00
Agree	(4)	0	0.00%		
Neither Agree nor Disagree	(3)	0	0.00%		
Disagree	(2)	0	0.00%		
Strongly Disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
16/26 (61.54%)	5.00	0.00	5.00

10 - The instructor effectively answers students' questions.

Kevin Kircher

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Strongly Agree	(5)	16	100.00%		5.00
Agree	(4)	0	0.00%		
Neither Agree nor Disagree	(3)	0	0.00%		
Disagree	(2)	0	0.00%		
Strongly Disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
16/26 (61.54%)	5.00	0.00	5.00

11 - The instructor seems to care about my learning in this course.

Kevin Kircher

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Strongly Agree	(5)	14	87.50%		4.88
Agree	(4)	2	12.50%		
Neither Agree nor Disagree	(3)	0	0.00%		
Disagree	(2)	0	0.00%		
Strongly Disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
16/26 (61.54%)	4.88	0.34	5.00

12 - The instructor makes time to help students.

Kevin Kircher

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Strongly Agree	(5)	16	100.00%		5.00
Agree	(4)	0	0.00%		
Neither Agree nor Disagree	(3)	0	0.00%		
Disagree	(2)	0	0.00%		
Strongly Disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
16/26 (61.54%)	5.00	0.00	5.00

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13 - The instructor is fair in evaluating my performance in the course.

Kevin Kircher

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Strongly Agree	(5)	15	93.75%		4.94
Agree	(4)	1	6.25%		
Neither Agree nor Disagree	(3)	0	0.00%		
Disagree	(2)	0	0.00%		
Strongly Disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
16/26 (61.54%)	4.94	0.25	5.00

14 - The instructor created an inclusive learning environment.

Kevin Kircher

Response Option	Weight	Frequency	Percent	Percent Responses	Means
Strongly Agree	(5)	15	93.75%		4.94
Agree	(4)	1	6.25%		
Neither Agree nor Disagree	(3)	0	0.00%		
Disagree	(2)	0	0.00%		
Strongly Disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
16/26 (61.54%)	4.94	0.25	5.00

15 - We welcome your comments below. What is something/are some things that the instructor does well, e.g., something you hope that the instructor will continue to do in the class in the future?

Kevin Kircher

Response Rate	10/26 (38.46%)

• Your explanations and lectures are very inclusive of a learning environment and really promote learning of the material. Your passion for the topics keeps the students interested and makes us all excited to learn about DERS.

• Professor Kircher is extremely passionate about the course and it makes easier to digest and learn information from him as the class seems more like a conversation about topics rather than a lecturer just providing students with information.

• Good involvement from outside sources, external talks which ensure coverage on a lot of different topics. Gives the class discussion more depth and involvement and helps greatly with projects as well.

• I really enjoyed how the course covered a wide variety of DERs, their applications, and the broader energy landscape. I didn't have a ton of knowledge coming in, and I felt like I got a lot from the course. I liked the idea of the first half of the course being homework/content, and the second half being guest speakers and the project. Thanks for all your work putting the course together!

• I previously said this in the mid-term evaluation form. Dr. Kircher does an excellent job at fostering an excellent learning environment. The lectures are all well made, he answers questions effectively and earnestly. Lectures were all fantastic and I learned a lot both from the content of the lectures, and the academic discussions along the way with the whole class. The guest lectures were also all very interesting. Each one had a very unique expertise that all summed up to gaining a good breadth of knowledge about DERs. I also enjoyed the final presentations done in a style of a mock-conference talk.

• Communication is great. The detailed slides and availability of class recordings were really helpful, especially in tying together info and ideas from different areas (i.e., battery characteristics, math tools and analyses, organization of the computation, etc.). Guest lecturers and discussions were great for getting an idea of what things stick out to other people.

• Professor Kircher is a fantastic lecturer. I had no familiarity with this field going into this course, but he taught in a way where I feel I fundamentally understand enough to confidently experiment with models for DERs and I honestly fell in love with the subject. If I didn't already have a job, I would have probably started looking for work in this area or even considered switching fields and getting a PhD in it. It's an interesting and relevant subject, and this class was one of the best I've had throughout my time in school.

• Dr. Kircher's clear and concise approach to difficult concepts helped me learn the subject better. His guest lecturers were done by some amazing people.

• I liked the classes, very structured and clear. It is a very math heavy course and the prof did a very good job explaining and deriving everything.

• Incorporating a brief introduction to MATLAB programming could significantly aid students in solving homework assignments. Specifically, covering essential functions required for the course, along with practical examples, would be beneficial. Additionally, providing resources or links to MATLAB tutorials would further support students' understanding and application of the material.

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16 - Make a suggestion(s) for improving the course (a criticism alone is not helpful; tell your instructor how you would fix any problem).

Kevin Kircher

Response Rate	10/26 (38.46%)

• Add a more detailed schedule but I get that that wasn't quite possible for this semester.

• I would highly suggest moving up the time table for the project to start earlier in the semester, even getting the topic approved earlier would allow students to start formulating ideas and processes earlier. It feels that the project is very rushed and as a student, I want to be able to provide the best product possible in the project, which starting earlier would give students the opportunity to do so. I believe not having an exam midway through was a good decision, but having the thought that there would be was extra stress that was not necessarily needed. Using the project to test our accumulation of knowledge from the rest of the course and the homework's is proper validation in my opinion.

• Not a huge fan of how little time and effort was put into the projects considering they are 65% of the grade. There need to be multiple milestones sort of to assess the progress throughout the semester. Further, one or two classes can be devoted to a one-on-one discussion with the students about their projects and guide them. Since, at the current moment although the projects are going on well, there isn't a lot of guidance on whether what is being done is useful or not. Furthermore, making the homework a little less "hand-holdy" and more exploratory would benefit students. Rather than giving the code through the lecture slides, let people come up with their own algorithms?

• Overall I think it was a fair course with engaging content, but I think a few things might help make it better: - Some of the homework felt like it was made just to give the class homework, particularly the problems with derivations. Maybe next time give more focus on the problems that are practical modelling examples or are concept focused. - For some of the DERs, it felt like we got more of an understanding of how to model the systems as ODEs than actually understanding the underlying mechanics. It could be cool to give this some more depth in the future. - I think it could've been cool have a little more freedom with the coding assignments and let the students write from scratch rather than fill in the blanks. Maybe allowing some other languages too. At the same time, I think this could turn into a lot of unnecessary work for the students and teaching staff, so there's definitely a balance needed. All in all, it's probably fine to keep it the way it is Thanks for all your work putting the course together!

• I think this course will get better over time but has an excellent foundation to build off of. One thing I think would be valuable is to teach convex optimization in more depth throughout the semester. Perhaps as we learn about all of the DERs presented, we can also build an intuition with convex optimization? Or do more homework with CVX in mind? I kept feeling like I wanted to learn more about that and the practical implications of using CVX as an engineer working with DERs. Just brainstorming here, but it might also be good to go more in depth with proving convexity for modeling problems. One thing we ran into with our project is that we had a lot of convex building blocks that crumbled as we tried to put them together. That was very fun problem solving to get a correct formulation though! Having more depth on that topic might be fun :) It would also be good to have a lecture towards the end of the semester on "The Future of DERs Research" to examine current and future trends in the topic.

• Personally, I need to practice things a lot before I feel comfortable with them. More (or longer) homeworks that reinforce the basic steps of problem construction could help; otherwise I feel like I need to create my own problem set (which I don't know if I've solved correctly) or memorize slides (not fun!). The only other thing would be more direct guidance on the projects (coming up with a problem statement, and knowing what will be sufficient for the purposes of the class). Solidifying it earlier would be great, too.

• I know this was the first time this course was taught so hiccups are to be expected. The one criticism I have is regarding how we weren't able to finish the material proposed in the syllabus. There were 3-4 weeks (I think, it felt like) of just discussing new DER equations that were basically just variations on the battery equation as a conservation of energy. I think it would be great to, instead, teach the battery equation model as a recurring pattern of an equation, and then you could have a homework assignment be focused on guided derivations for that model to other DERs where it's relevant. I feel like that way the time we spent on the various DER models could be optimized.

• I would strongly recommend allowing students to make final presentations in powerpoint. Unlike Latex documents, Latex presentations are inefficient and Powerpoint is much better tool in my opinion. At least, student should have the flexibility to select whatever tool they prefer. Making the presentation took a lot of time that otherwise could have been spent on getting more meaningful results from the project. I would also suggest to equally distribute the guest lectures throughout the semester. I felt like we did not discussed enough subject matter towards the end of the semester.

• more homeworks, with bigger impact. more coding and optimization. adding ML would be awesome too

• I believe that the homework grading system could be improved by adopting a conventional 100-point scale. This change might provide a clearer and more standardized assessment of students' work.

17 - This course has clearly stated objectives.

Response Option	Weight	Frequency	Percent	Percent Responses	Means
strongly agree	(5)	12	80.00%		4.80
agree	(4)	3	20.00%		
neither agree nor disagree	(3)	0	0.00%		
disagree	(2)	0	0.00%		
strongly disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
15/26 (57.69%)	4.80	0.41	5.00

18 - Practical applications of course material are discussed.

Response Option	Weight	Frequency	Percent	Percent Responses	Means
strongly agree	(5)	14	93.33%		4.93
agree	(4)	1	6.67%		
neither agree nor disagree	(3)	0	0.00%		
disagree	(2)	0	0.00%		
strongly disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
15/26 (57.69%)	4.93	0.26	5.00

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19 - My instructor seems well-prepared for class.

Kevin Kircher

Response Option	Weight	Frequency	Percent	Percent Responses	Means
strongly agree	(5)	12	80.00%		4.80
agree	(4)	3	20.00%		
neither agree nor disagree	(3)	0	0.00%		
disagree	(2)	0	0.00%		
strongly disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
15/26 (57.69%)	4.80	0.41	5.00

20 - The workload is appropriate for the goals of this course.

Response Option	Weight	Frequency	Percent	Percent Responses	Means
strongly agree	(5)	9	60.00%		4.53
agree	(4)	5	33.33%		
neither agree nor disagree	(3)	1	6.67%		
disagree	(2)	0	0.00%		
strongly disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
15/26 (57.69%)	4.53	0.64	5.00

21 - My instructor encouraged me to ask questions.

Kevin Kircher

Response Option	Weight	Frequency	Percent	Percent Responses	Means
strongly agree	(5)	14	93.33%		4.93
agree	(4)	1	6.67%		
neither agree nor disagree	(3)	0	0.00%		
disagree	(2)	0	0.00%		
strongly disagree	(1)	0	0.00%		
				0 25 50 100	Question

Response Rate	Mean	STD	Median
15/26 (57.69%)	4.93	0.26	5.00