

# ECE 333 – Green Electric Energy Systems, Spring 2021

Instructor	Time	Day	Location	Instructor Office Hours
Andrew Stillwell AndrewRS<AT>illinois.edu	9:30AM-10:50 AM	T/Th	ECEB 1015	Tuesdays, 1:30-2:30 Over Zoom

**TA:** anb4<at>illinois.edu

**TA Office Hours:** Wednesday, 3-4PM

**Course Text:** Gilbert Masters, *Renewable and Efficient Electric Power Systems*, 2<sup>nd</sup> Ed., Wiley-IEEE Press, 2013

**Prerequisites:** ECE 205 or ECE 210

Topic	Approx. # of Lectures
Introduction and Power Grid Basics	6
Wind Energy Conversion	7
Energy Economics	2
The Solar Resource	4
Solar Energy Conversion	5
Electric Vehicles	3
Midterm Exam, Exam Reviews, Etc.	2

See Detailed Course Schedule for full list of topics and schedule.

## Policies

### In-Person Instruction

#### COVID

Following University policy, all students are required to engage in appropriate behavior to protect the health and safety of the community, including wearing a facial covering properly, maintaining social distance (at least 6 feet from others at all times), disinfecting the immediate seating area, and using hand sanitizer. Students are also required to follow the campus COVID-19 testing protocol.

Students who feel ill must not come to class. In addition, students who test positive for COVID-19 or have had an exposure that requires testing and/or quarantine must not attend class. The University will provide information to the instructor, in a manner that complies with privacy laws, about students in these latter categories. These students are judged to have excused absences for the class period and should contact the instructor via email about making up the work.

Students who fail to abide by these rules will first be asked to comply; if they refuse, they will be required to leave the classroom immediately. If a student is asked to leave the classroom, the non-compliant student will be judged to have an unexcused absence and reported to the Office for Student Conflict

Resolution for disciplinary action. Accumulation of non-compliance complaints against a student may result in dismissal from the University.

### **Emergency Response Recommendations**

Emergency response recommendations can be found at the following website:

<http://police.illinois.edu/emergency-preparedness/>. I encourage you to review this website and the campus building floor plans website within the first 10 days of class.

<http://police.illinois.edu/emergency-preparedness/building-emergency-action-plans/>.

### **Accommodations**

To obtain disability-related academic adjustments and/or auxiliary aids, students should contact both the instructor and the Disability Resources and Educational Services (DRES) as soon as possible. You can contact DRES at 1207 S. Oak Street, Champaign, (217) 333-1970, or via email at [disability@illinois.edu](mailto:disability@illinois.edu).

### **Participation**

Active participation in the online learning environment is vital to your success in this course. Depending on your course, you may be asked to engage in online discussions and other interactive learning environments that invite your active participation and involvement with other students and your instructor.

### **Student Commitment**

By registering for this course, you commit to self-motivated study, participation in in-class/online course activities, and timely submission of all assignments. Furthermore, you commit to accessing the course website and checking email at least four days per week, as well as to devoting at least 6–8 hrs./week to preparing for each module and completing the required assignments and readings.

### **Deadlines**

If you are unable to meet a particular deadline, it is your responsibility to make prior arrangements with the instructor for that given week. Otherwise, work submitted less than 24 hours past the deadline will receive a 10% penalty, and work submitted later than 24 hours will not be considered for grading unless consent has been given by the instructor.

## **Instructor Responses**

### **Instructor Feedback Turnaround Time**

Questions posted to the Course Help Discussion Forum generally will be answered within 24 hours. If possible, students are encouraged to answer questions posted by other students to the Course Help Discussion Forum, rather than waiting for an instructor's response.

Assignments submitted online will be reviewed and graded within 5 business days. Exams, essays, and term papers will be graded within 10 business days. If your instructor is unable to meet this timeline, students will be notified.

### **Responding to Emails**

The instructor will respond to email messages within 24 hours of receiving them unless the instructor notifies you ahead of time of an inability to do so. When sending email, include a subject line that identifies the course number and nature of your question. The instructor may not respond to questions sent to him that should be posted in the Course Help Discussion Forum. Please don't be offended if you

are asked to forward your question to this location. If you leave a voicemail message with the instructor, please check your email for a response.

### **Responding to the Discussion Forums**

The role of the instructor within the discussion forums is to help facilitate discussion by providing probing questions, asking for clarification, and helping solve conflicts as necessary. The instructor will not respond to every post. You are encouraged to share your thoughts, experiences, and ideas with each other as well.

### **Academic Integrity**

Academic dishonesty will not be tolerated. Examples of academic dishonesty include the following:

- Cheating
- Fabrication
- Facilitating infractions of academic integrity
- Plagiarism
- Bribes, favors, and threats
- Academic interference
- Examination by proxy
- Grade tampering
- Non-original works

Should an incident arise in which a student is thought to have violated academic integrity, the student will be processed under the disciplinary policy set forth in the Illinois Academic Integrity Policy. If you do not understand relevant definitions of academic infractions, contact your instructor for an explanation within the first week of class.

## **Copyright**

### **Student Content**

Participants in University of Illinois courses retain copyright of all assignments and posts they complete; however, all materials may be used for educational purposes within the given course. In group projects, only the portion of the work completed by a particular individual is copyrighted by that individual. The University of Illinois may request that students' materials be shared with future courses, but such sharing will only be done with the students' consent. The information that students submit during a course may, however, be used for the purposes of administrative data collection and research. No personal information is retained without the students' consent.

### **Non-student Content**

Everything on this site and within University of Illinois courses is copyrighted. The copyrights of all non-student work are owned by the University of Illinois Board of Trustees, except in approved cases where the original creator retains copyright of the material. Copyrights to external links are owned by or are the responsibility of those external sites. Students are free to view and print material from this site so long as

The material is used for informational purposes only.

The material is used for noncommercial purposes only.

Copies of any material include the respective copyright notice.

These materials may not be mirrored or reproduced on non-University of Illinois websites without the express written permission of the University of Illinois Board of Trustees. To request permission, please contact the academic unit for the program.

## Student Behavior

### Student Conduct

Students are expected to behave in accordance with the penal and civil statutes of all applicable local, state, and federal governments, with the rules and regulations of the Board of Regents, and with university regulations and administrative rules.

For more information about the student code and handbook, see the CITL course policies page.

### Netiquette

In any social interaction, certain rules of etiquette are expected and contribute to more enjoyable and productive communication. The following are tips for interacting online via email or discussion board messages, adapted from guidelines originally compiled by Chuq Von Rospach and Gene Spafford (1995):

Remember that the person receiving your message is someone like you, deserving and appreciating courtesy and respect.

Be brief; succinct, thoughtful messages have the greatest effect.

Your messages reflect on you personally; take time to make sure that you are proud of their form and content.

Use descriptive subject headings in your emails.

Think about your audience and the relevance of your messages.

Be careful when you use humor and sarcasm; absent the voice inflections and body language that aid face-to-face communication, internet messages are easy to misinterpret.

When making follow-up comments, summarize the parts of the message to which you are responding.

Avoid repeating what has already been said; needless repetition is ineffective communication.

Cite appropriate references whenever using someone else's ideas, thoughts, or words.

## Communications

### Daily Contact

Your daily contact should be via the discussion forums in our Learning Management System and via email.

### Course Questions

Questions pertaining to the course should be posted in our Course Help Discussion Forum. You can get to this forum from the course home page. Posting questions here allows everyone to benefit from the answers. If you have a question, someone else is probably wondering the same thing. Anyone submitting a question via email will be directed to resubmit the question to the Course Help Discussion Forum. Also, participants should not hesitate to answer questions posed by peers if they know the answers and the instructor has not yet responded. This not only expedites the process but also encourages peer interaction and support.

### Personal and Grade-Related Questions

Questions of a personal nature should first be sent to the instructor's email address (listed on the Instructor Information page). When sending email, include a subject that identifies the course number and nature of your question.

### **Emergencies**

If you have an emergency that will keep you from participating in the course, please notify your instructor by using the instructor's email address (listed on the Instructor Information page). Provide callback information in your email (if necessary). You should also notify your program director of any emergencies.

### **Zoom**

Zoom is a tool that allows multiple people to join together simultaneously via a computer to text chat, audio chat, video chat, collaborate on a digital whiteboard, and even share their computer desktops with one another. The instructor's Virtual Office (when available) makes use of Zoom.

### **Instructor's Virtual Office**

Another way to communicate with the instructor is to make use of the Virtual Office hours through the Zoom Interface. The instructor will be available for office hours via Zoom on the dates and during the times listed on the Virtual Office page in the Syllabus.

### **Announcements**

The Announcements forum serves as a way for your instructor and University of Illinois administrators to make announcements within our online learning environment. Announcements posted here will also be sent to your Illinois email address, so be sure to check your email or the Announcements forum at least once a day to see whether any new announcements have been made.

### **Anti-Racism and Inclusivity Statement**

The intent is to raise student and instructor awareness of the ongoing threat of bias and racism and of the need to take personal responsibility in creating an inclusive learning environment.

The Grainger College of Engineering is committed to the creation of an anti-racist, inclusive community that welcomes diversity along a number of dimensions, including, but not limited to, race, ethnicity and national origins, gender and gender identity, sexuality, disability status, class, age, or religious beliefs. The College recognizes that we are learning together in the midst of the Black Lives Matter movement, that Black, Hispanic, and Indigenous voices and contributions have largely either been excluded from, or not recognized in, science and engineering, and that both overt racism and micro-aggressions threaten the well-being of our students and our university community.

The effectiveness of this course is dependent upon each of us to create a safe and encouraging learning environment that allows for the open exchange of ideas while also ensuring equitable opportunities and respect for all of us. Everyone is expected to help establish and maintain an environment where students, staff, and faculty can contribute without fear of personal ridicule, or intolerant or offensive language. If you witness or experience racism, discrimination, micro-aggressions, or other offensive behavior, you are encouraged to bring this to the attention of the course director if you feel comfortable. You can also report these behaviors to the Bias Assessment and Response Team (BART) (<https://bart.illinois.edu/>). Based on your report, BART members will follow up and reach out to students to make sure they have the support they need to be healthy and safe. If the reported behavior also violates university policy, staff in the Office for Student Conflict Resolution may respond as well and will take appropriate action.

### **Sexual Misconduct Policy and Reporting**

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the university's Title IX and Disability Office. In turn, an individual with the Title IX and Disability Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options.

A list of the designated university employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found in the Confidential Resources section. Other information about resources and reporting is available at [wecare.illinois.edu](http://wecare.illinois.edu).

### **Student Wellness Resources**

The University of Illinois strives to promote student success through the support of student psychological and emotional well-being. Please take advantage of the resources listed on the Student Affairs website.

## **Course Grading**

**Class Participation/Homework:** Class Participation and Homework (HW) together are worth 20% of the final grade, with the class participation score worth roughly 5% and the homework score worth roughly 15%. A good strategy to get a high score in this area is to show up to class alert and prepared to participate, and to complete all the homework assignments on time.

- Class Participation (~5%): The HW assignments will include reading (textbook and newspaper / web / magazine articles). Approximately 5-10% of total class time will be dedicated to open discussion of the reading. The professor will judge how well you come prepared to discuss and engage in the reading and lecture topics. Obviously, in a large class not everyone will be able to speak during every discussion. However, being engaged includes listening attentively, being awake, and speaking if/when appropriate. For those attending lecture asynchronously, weekly discussion forum posts will substitute for participation.
- Homework (~15%): The HW will be assigned roughly on a weekly basis. You can expect 10-12 HW assignments this semester. To allow students some flexibility, the lowest HW score will be dropped from the HW average used to compute the final grade. Homework assignments are due at 5:00 PM on the due date. Late homework will be accepted up to 24 hours late for a 10% penalty. Homework later than 24 hours will not be accepted.

### **Exams:**

Mid-term 1 (110 minutes): Tuesday, March 2<sup>nd</sup>, Online (25% of final grade)

Mid-term 2 (110 minutes): Thursday, April 6<sup>th</sup>, Online (25% of final grade)

Final Exam (3 hours): TBD, to be confirmed

The exams will be open-book, open-notes, open internet, proctored through the CBFT.

### **Final Grade Weights:**

HW, class participation	20%
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Exam 1	25%
Exam 2	25%
Final exam	30%

### **Final Grades:**

The minimum course grade you will achieve based on your final weighted course percentage is determined by the standard 10-pt scale shown below. I reserve the right to adjust these numbers downward (in student's favor) but they are guaranteed maximums and will not be raised.

<b>Percent</b>	<b>Minimum Grade</b>
97-100	A+
94-96.9	A
90-93.9	A-
87-89.9	B+
84-86.9	B
80-83.9	B-
77-79.9	C+
74-76.9	C
70-73.9	C-
67-69.9	D+
64-66.9	D
60-63.9	D-
≤60	F