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Iowa Lakes Community College is committed to ensuring that all programs and services, including electronic and our website (www.iowalakes.edu), are accessible to people with disabilities. In accordance with the provisions of Sections 504 and 508 of the Rehabilitation Act and the Americans with Disabilities Act (ADA), Iowa Lakes provides students, faculty, staff, and visitors with reasonable accommodations to ensure equal access to the programs and activities of the college. For more information visit: <https://www.iowalakes.edu/educational-counseling-services/accommodations-disability-resources>.

Patrick McCoy is an Associate Professor at Iowa Lakes Community College.

Updated in 2017, this course covers an introduction to wind turbine siting and is offered in credit programs in a face-to-face format.

Course Syllabus

Wind Turbine Siting, WTT-204

Class Day/Time

Spring/2018

Iowa Lakes Community College
300 South 18th Street
Estherville, IA 51334

Instructor Name: Patrick McCoy

Office No: 307 (Wind Energy Building)

Phone: 712-362-7993

Fax: 712-362-8392

Email: pmccoy@iowalakes.edu

Office Hours: As posted on office door

Catalog Description:

Project development is a critical part of the wind industry. The placement of turbines, the impact on the environment and the local economy are all part of the decision making process before placing wind

This workforce solution is funded in part by the IHUM Consortium which is 100% financed through a \$15,000,000 grant from the U.S. Department of Labor's Employment & Training Administration.

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turbines into service. This course will allow students the opportunity to learn the techniques, methodology, and concepts used to develop projects around the world.

Prerequisites: Introduction to Wind Energy

Credits: 4 (2 Lecture, 2 Lab)

Text & Additional Materials:

Brower, Michael. 2012. Wind Resource Assessment. Wiley.

Course Objectives/Competencies:

Objectives of this course is to give students a conceptual understanding of the procedures and processes followed to develop wind energy projects. Areas of study will include selection criteria for projects, the impact of wind turbines on the environment and wildlife, land acquisition, permitting, and turbine placement.

1. Wind Availability
2. Transmission availability
3. Terrain features
4. Use of available resources
5. Environmental impact studies
6. Avian / Wildlife impact studies
7. Visual and Landscape Assessment
8. Noise impact studies
9. Ecological impact studies
10. Electrical Mechanical Interference Impact studies
11. Aviation impact studies
12. Public acceptance
13. Array losses
14. Wake turbulence
15. Power production estimates
16. Project optimization
17. Land Acquisition
18. Construction permits
19. Land use permits
20. Grid connection permits
21. Noise emission permits

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22. Foundations & Soil boring
23. Access Road planning
24. Operation facility planning
25. Power Purchase Agreement
26. Interconnect Agreement
27. Construction Agreement
28. Land Easements

Course Schedule/Outline (Units of Instruction):

1. Prospecting
2. Intro to wind resource assessment
3. Planning a measurement campaign
4. Micro siting
5. Wind farm losses
6. Land Acquisition / Permitting
7. Wind farm financing

Methods of Instruction: Course will be covered by up to two hours of lecture each week and discussion based on reading assignments, site visits, guest speakers and other methods to be determined by instructor. There will also be up to four hours of laboratory work each week that will consist of demonstrations, experiments, research and use of project siting software as well as other tasks that may be required by instructor.

Grading Policies:

Scale: **A** = 90 – 100%
 B = 80 – 89.99%
 C = 70 – 79.99%
 D = 60 – 69.99%
 F = 00 – 59.99%

Two Exams	= Approximately 200 points possible
Lab	= Approximately 300 points possible (10pts per Lab)
Assignments/Project	= Approximately 200 points possible
Attendance/Participation	= 100 points possible (Lecture only)

Other Expectations:

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Students will be expected to conduct themselves as professionals. Students are expected to attend all lecture and labs. After the second absence, the student will lose 25 points from attendance/participation until points are exhausted. All missed exams will be completed one week after exam date. After one week all unfinished coursework will receive a zero. Absenteeism from lab will result in a zero for the day. No exceptions! The use of cell phones in class is prohibited. Any student using a cell phone in lab will receive a zero for that lab. Any student using a cell phone during lecture will forfeit 10% of points possible on next exam. Any student with a visible cell phone during an exam will receive a zero on exam.

Important: NO food or drinks in the lab.

Students must abide by all policies as stated in the Iowa Lakes Community College Student Handbook.

Students should be aware that classes might be audio or video recorded by one or more students. The college's policies governing the audio or video recording of class are included in the Student Handbook. Students who have any questions or concerns about class recordings should address their questions or concerns with the instructor at the *beginning of the semester*.

STUDENT ACADEMIC HONESTY POLICY

Iowa Lakes Community College believes that personal integrity and academic honesty are fundamental to scholarship. Iowa Lakes strives to create an environment where the dignity of each person is recognized and an atmosphere of mutual trust exists between instructors and students. The faculty has confidence in the integrity of the students and encourages students to exercise good judgment in fulfilling this responsibility.

Actions contrary to academic integrity will not be tolerated. Activities that have the effect or intention of interfering with learning or fair evaluation of a student's work or performance are considered a breach of academic integrity. Examples of such unacceptable activities include, but are not limited to:

- **Cheating** (intentionally using or attempting to use unauthorized material, assistance or study aids in my academic work). For example, using a cheat sheet for a test, looking at another student's paper during an exam, stealing or buying all or parts of an exam or paper, altering and resubmitting work for a better grade without prior approval to do so, etc.
- **Plagiarism** (representing another's ideas, words, expressions or data in writing or presentation without giving proper credit, failing to cite a reference or failing to use proper documentation, using works of another gained over the Internet and submitted as one's own work).
- **Falsification and/or misrepresentation of data** (submitting contrived or made-up information in any academic exercise). For example, making up data, citing non-existent sources, etc.
- **Facilitating Academic Dishonesty** (knowingly helping or attempting to help another violate any provision of the academic honesty policy). For example, working together on a take-home exam or other assignment when the option has not been made available, giving a paper/assignment to another student for his/her use, etc.
- **Multiple Submissions** (submitting, without prior approval from the instructor involved, any work submitted to fulfill academic requirements in another class). For example, submitting the same paper for two different classes, etc.

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- **Unfair Advantage** (trying to gain unauthorized advantage over fellow students). For example, gaining or facilitating unauthorized access to exam materials (past or present); interfering with another student's efforts in an academic exercise; lying about the need for an extension on a paper or assignment; destroying, hiding, removing or keeping library materials, etc.

Disciplinary Action

Any violation of this policy will be treated as a serious matter. The instructor has primary responsibility over classroom behavior and maintaining academic integrity. Students who earn an "F" based on any violation of the Student Academic Honesty Policy may not withdraw from the class (and receive a grade of W). Depending on the nature and severity of the offense, Iowa Lakes Community College reserves the right to exercise disciplinary action as outlined in the Disciplinary Action Section of the Student Handbook.

Americans with Disabilities Act – Policy of Nondiscrimination

It is Iowa Lakes Community College policy to not discriminate against qualified individuals with disabilities and to provide reasonable accommodation(s), as required by law, to otherwise qualified applicants for admission or to students with disabilities in all education programs, activities, services and practices, including application procedures, admissions, course selection, the awarding of degrees, discipline and dismissal. Educational opportunities will not be denied to an otherwise qualified application or student because of the need to make reasonable accommodation(s) or modification(s) for the physical and mental impairment(s) of any such individual.

Iowa Lakes Community College students needing reasonable accommodation(s) and/or modification(s) should contact Jody Condon by phone at (712) 852-5219 or via email at jcondon@iowalakes.edu. To assure that accommodation(s) and/or modification(s) will be ready when classes start, students must make the request as soon as possible, before a semester begins.

It is the policy of Iowa Lakes Community College not to discriminate on the basis of sex, race, national origin, creed, age, marital status or disability in its education programs, activities, or employment policies, as required by Titles VI and VII of the 1964 Civil Rights Act, Title IX of the 1972 Educational Amendments, Section 504 of the Federal Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act (ADA) of 1990.

Inquiries regarding compliance with Title IX, Title VI, Title VII, or Section 504 may be directed to Kathy Muller, Human Resources, Iowa Lakes Community College, 19 S. Seventh Street, Estherville, IA 51334, telephone (712) 362-0433; to the Director of the Iowa Civil Rights Commission, Des Moines; or to the Director of the Region VII Office of Civil Rights, Department of Education, Kansas City, Missouri.

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