

**Mississippi Valley State University
Department of Engineering Technology
College of Professional Studies**

**Course Syllabus
ET 241L Electric Power and Energy Conversion Lab**

**Lecture, Tuesday and Thursday :1:00 pm - 2:15pm,
Classroom: Science and Technology Bldg, Rm 1112
Credit hours: 1**

**Mr. Lemorris Strong – Assistant Professor
Office Phone: 254-3409
Email Address lemorris.strong@mvsu.edu
Office Hours: As posted**

Pre-requisite: A grade of “C” or better in Basic Electronics, ET 142

LAB PHILOSOPHY: To provide a mean for students to gain experience (hands-on) in electric power and energy conversion through projects and equipment demonstration.

COURSE DESCRIPTION: This course introduces students to the principles of electric power generation and energy conversion, covering the areas of rotating machines (generators and electric motors), transformers, photovoltaic elements, fuel cells, solar, and wind turbines.

STUDENT LEARNING OUTCOMES: Upon the successful completion of this course, the student will be able to, either orally in writing or hand-on with minimum use of outside references, perform the following objectives.

1. Understand the functionality Mechanical energy
2. Identify Thermodynamic principles
3. Understand Thermal machines concept
4. Describe the characteristics of Electromagnetic induction and generators
5. Recognize and identify Electric motors, and Transformers function and their schematic symbols
6. Understand the function of Electric power transmission and distribution
7. Photovoltaic power generation
8. Identify Fuel cells, solar and wind energy applications
9. Analyze, and perform computer simulations of electric power system

EXPECTATIONS: This course of study has been prepared to inform you about the lab requirements, contents, teaching methods, evaluation process and requirements for students. You are expected to read the information carefully so that you understand what is expected of you and the course requirements that must be met to successfully complete the course. You will be held responsible and accountable for knowing the schedule of lab meeting and examinations. It is recommended that you read and study all assigned materials. If you do not understand the material, you should promptly consult your instructor.

GRADE STANDARDS AND WEIGHTS FOR ET241L: All lab assignments must be submitted for grading by the due date. Assignments that are not typed must be neatly written on lineless paper.

LAB METHOD: Two (2) hours of laboratory weekly

LAB PROJECTS: The student must design their project using energy and power conversion method to generating electricity. Their design must deal with renewable energy, nonrenewable energy, or

inexhaustible energy, and must be either electrical, mechanical or fluid.. All projects must have a poster board.

ASSESSMENT SHEET ET-241L

| Schedule | Means of Assessment | Points | Points |
|-----------------|---|---------------|---------------|
| Week 2 | identify project and began progress report | 50 | |
| Week 3 | order materials & update progress report identify building strategy | 50 | |
| Week 4 | received materials - verify and organize material with strategy update progress report | 50 | |
| Week 5 | Instructor check point – review progress report. Material, & building strategy | 150 | |
| Week 6 | start proto type & update progress report | 50 | |
| Week 7 | Oct 1 – 5 Med Term - Instructor reviews progress report and status of project | 100 | |
| Week 8 | Correct any finding and continue project Update progress report | 50 | |
| Week 9 | Progress check point 1 verify proto type will work if not troubleshoot fault | 50 | |
| Week 10 | Progress check point2 –Repeat process until the problem is corrected | 50 | |
| Week 11 | Progress check point 3-continue proto type & update progress report | 50 | |
| Week 12 | Create poster board for project | 50 | |
| Week 13 | Project completed and ready to be present to class | 50 | |
| Week 14 | Final Exams – turn in progress report and display project and poster board for inspection | 150 | |
| | Final Grade | 900 | |

Grading system:

A = 91-100 or 910 -1000
B = 81-90 or 810 - 900
C = 71-80 or 710 - 800
D = 61-70 or 610 - 700
F = 0- 61

REFERENCES: The CD contained in the back of your class book, You Tube, (youtube.com) power and energy conversion or other resources that are available

Class Policies: The following class policies are in effect throughout this course to ensure that a positive and equitable learning environment exists for all class members. Failure to follow these class policies may result in sanctions per the student handbook. Policies for class include:

Attendance: **Students are expected to attend class.** Any absentees will have a negative effect upon your final course grade. Students are responsible for and accountable for all information in lectures and all modifications to assignments presented in class. If a student misses a class, he or she is responsible for the material missed – even if a valid excuse is presented.

Punctuality: Every student is expected to practice professional time management skills and report to class on time.

Professional Language/Respect: Professional language, conduct, and respect for peers, the instructor, and the learning process are a basic requirement. This is a “G” rated course

Disruptive Behavior: Effective learning environments require the attention and positive contribution of both student and teacher. Sidebar or loud conversations, jokes, laughter, pranks, etc., between and among students in the classroom while class is in session are disruptive to the learning environment. Students disrupting the class/learning environment in such a manner are subject to grading penalties.

Others Attending Class: Those who are not registered for the course are not permitted to attend. This includes, but is not limited to, boyfriends/girlfriends, children, siblings, spouses, etc.

Electronic Devices: Cell phones, iPads, iPods, etc. will not be used in class and should be turned OFF **BEFORE** you enter the classroom. Electronic device use will result in **immediate expulsion** from the class.

Computer: Doing class computer usage has to be approval by the Instructor

Make-up Work: **No make-ups assignments are available.** Assignment due dates are announced well in advance and are FIRM. There are no exceptions for athletic travel or other pre-planned absences. Students are encouraged to complete assignments EARLY and to submit them PRIOR TO THE DEADLINE. Assignments will only be accepted as called for by the instructor, on or prior to the due date. **No make-ups will be given for missed assignments or examinations.** An excuse from the Office of Student Affairs **DOES NOT EXCUSE the student from work or assignments missed during the absence!**

Honor Code: Any work submitted is expected to be yours. Dishonesty (cheating) in any form will not be tolerated. Cheating will result in the student(s) involved being immediately dismissed from the class and receiving a grade of "F" for the course. Cheating includes submitting someone else's work as your own or allowing someone else to submit your work as theirs. Cheating will be determined at the sole discretion of the instructor.

Other: All other student conduct policies are in full effect as explained in the Mississippi Valley State University Undergraduate Catalog.

DRESS POLICY; *There is no MVSU dress policy, however in this class there will be NO pants sagging, NO hats, hoods, or any other headgear worn (females are allowed to wear hats). If this dress policy is violated you will be asked to leave the class room with a loss of 20 points. Only an excuse from the Department Head will allow you to return.*

Accommodating Special Needs Students: Students with learning or physical disabilities admitted to this class will be expected to perform the same level of work at the same proficiency as students without disabilities. However, where necessary, alternative methods will be used to accommodate any learning or physical condition if it is made known to the instructor in advance. No student will be turned away from this class because of a disabling condition.

Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability (medical, physical, psychiatric, learning, vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities (SSD) program administered by University College. It is recommended that you visit the Disabilities Office located inside the EMAP Computer Lab in the Technical Education (IT) Building to register for the program at the beginning of each semester. If you are determined to be eligible after your confidential consultation, you will be provided with a Memo of Accommodations that must be submitted to each of your instructors.

For more information or to schedule an appointment, please contact Mr. Billy Benson, Jr. via phone or email at 662-254-3005 or billy.benson@mvsu.edu.

Withdrawals and Incompletes: A syllabus constitutes a contract between the student and the course instructor. Participation in this course indicates your acceptance of its teaching focus, requirements, and policies. Please review the syllabus and the course requirements as soon as possible. If you believe that the nature of this course does not meet your interests, needs or expectations, if you are not prepared for the amount of work involved or if you anticipate that the class meetings, assignment deadlines or abiding by the course policies will constitute an unacceptable hardship for you, you should drop the class by the drop/add deadline. **Incompletes will not be offered in this course.**