

*Arkansas State University-Newport's mission is to provide an accessible, affordable, quality education that transforms the lives of our students, enriches our communities, and strengthens the regional economy.*

## **TECH1053: Basic Electrical Schematics & Motor Controls**

**Catalog Description:** This course is designed to strengthen the skills of entry-level maintenance personnel who will install and repair Industrial Electrical Control Systems. The course includes the study of magnetism, induction, generation of electricity, the wide array of field devices used by industry and manufacturers, single and three-phase electrical service and their wave-forms are studied both as theory and in practical applications. An intense study of Ohm's Law as it applies to series and parallel circuits is implemented providing hands-on wiring of single and three-phase motors and various control circuits, such as, but not limited to, Stop-start-run, jog, seal-in control circuits, which are examined and tested. Upon completion, participants should be able to read and interpret basic electrical drawings with an emphasis on Ladder Diagrams and Ladder Logic Diagrams. Students will demonstrate their ability to construct both control and power circuits from schematic diagrams and the ability to trouble-shoot the systems built in the lab.

**Course Type:** Lecture/Lab

**Instructor Name:**

**Office:**

**Office Phone:**

**Email:**

**Office Hours:**

### **Department Information**

Course Department:

Academic Department:

Academic Coordinator:

Email:

Associate Dean:

Associate Dean Contact Number:

Email:

### **Materials: Required and Optional**

Required Text(s): AMATROL eLearning Activation code

Optional Text(s): None

Required Materials:

Pencils, Paper, Basic Scientific Calculator, USB drive 8gb

### **Institutional Learning Outcomes**

Upon graduating from ASU-Newport with any Associate Degree, a student will be proficient in the following:

#### **ILO1: Communication**

Goal: Students will express ideas, knowledge, and concepts in a clear and concise manner.

- a) Written
- b) Verbal

- c) Interpersonal

**ILO2: Reasoning**

Goal: Students will apply reasoning skills in a variety of environments, which demonstrate problem-solving and applied knowledge.

- a) Explore
- b) Locate
- c) Interpret
- d) Evaluate
- e) Apply

**ILO3: Responsibility**

Goal: Students will participate in service activities that instill in them a sense of social responsibility.

- a) Civic
- b) Academic
- c) Financial

**Institutional Grading Scale**

Grading Scale:

- A: 90-100
- B: 80-89
- C: 70-79
- D: 60-69
- F: 0-59
- S: Satisfactory
- U: Unsatisfactory

**Americans with Disabilities Act Compliance**

In order to obtain appropriate disability related accommodations and services to which they are entitled, students with documented disabilities should voluntarily and confidentially provide the Office of Disability Services (870-512-7838 or [disabilityservices@asun.edu](mailto:disabilityservices@asun.edu)) with appropriate medical documentation regarding the nature and extent of their disability, make their needs known to this Office and follow established procedures for acquiring needed services and accommodations in the classroom or online.

**Information Technology Services**

If you experience any problems or issues with Canvas, MyCampus, or other equipment, please contact ITS at 870-512-7783 or <http://its.asun.edu>. Canvas also has a 24/7 live chat. This is a valuable resource for those late-night tests or assignments that just do not seem to work properly.

ASU-Newport provides a number of different services to assist students in areas that directly impact their academic success. The following direct websites will help you get in touch with those services that may be needed during your time as an ASUN student:

Academic Support Center: <http://academicsupport.asun.edu>

Financial Aid: <http://financialaid.asun.edu>

Career Pathways: <http://pathways.asun.edu>

University Police: <http://cpd.asun.edu>

Information Technology Services: 512-7783 or [its@asun.edu](mailto:its@asun.edu)

Disability Services: [http://www.asun.edu/disability\\_services](http://www.asun.edu/disability_services)

Admissions: <http://admissions.asun.edu>

**Academic Dishonesty** (as stated in the Student Handbook)

ASU-Newport enthusiastically promotes academic integrity and professional ethics among all members of the ASU-Newport academic community. Violations of this policy are considered serious misconduct and may result in disciplinary action and severe penalties. Cheating in any form-including plagiarism, turning in assignments prepared by others, unauthorized possession of exams - may result in the student being dropped from the class with an “F” and/or being suspended from the College. Students who feel they have been unfairly accused of cheating may appeal to the Associate Dean of General Education.

### **Campus Safety Information**

What to know and do to be prepared for emergencies at ASUN:

- Opt-in to receive ASUN’s School Messenger notifications regarding weather closings, emergencies, and other important notifications. All currently enrolled students will receive an email within the first two weeks of the semester prompting them to Opt-in to the messaging system.
- Know the safe evacuation route from each of your classrooms. Emergency evacuation routes are posted in on-campus classrooms.
- Listen for and follow instructions from your instructor or other designated authorities.
- For additional emergency information see the ASUN Emergency Response Guide in the Portal under “More” then select “Department of Safety”.
- Know the emergency phone number for ASUN Campus Police or dial 911.
- Report suspicious activities and objects found on campus.
- Keep your permanent address and emergency contact information current in My Campus.

### **Inclement Weather**

In the event of inclement weather, class cancelation is left to the discretion of the Chancellor. You will be notified of class cancelation on the university website, through news media, and through our school messaging system.

### **Children in the Classroom:**

ASUN classroom policy requires that the learning environment should be free of distraction in order to provide the highest learning opportunity for all students. In this light, students should not bring children to the classroom. If you must bring a child on campus, please have your child properly supervised in the public gathering areas.

### **Course Learning Outcomes:**

Upon successful completion of this course, students will be able to:

- Identify maintenance concepts for Industrial motor control systems
- Identify industrial electrical circuits and controls
- Read schematics, diagrams, flow charts
- Demonstrate industrial electrical circuit wiring methods
- Discuss and analyze electrical circuit component, use, application and faults

Demonstrate proper use of PPE

### **Course Policies and Procedures**

### **Academic Calendar**

### **Disclaimer**

This syllabus and all documents associated with the syllabus are considered a contract between the student and the instructor. Students are expected to carefully read and review the syllabus and all associated documents in order to be familiar with course expectations and policies. This syllabus is subject to change at the discretion of the instructor, who will inform students of any changes. Students are responsible for keeping up with any changes.