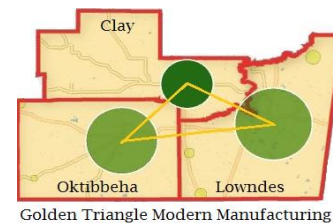


This deliverable contains East Mississippi Community College's five hybrid online versions of sections within the new technician education courses. These sections include: NCCER Core & Safety, Electronic Motion Control, Fluid Power, Metallurgy, and PLC Multi-Platform. The hybrid courses were developed through the Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant Program Round 3 Grant Golden Triangle Modern Manufacturing Project TC-25149-13-60-A-28.

This document contains deliverable #25: Five hybrid online versions of sections within the new technician education courses.

This workforce product was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The U.S. Department of Labor makes no guarantees, warranties, or assurances of any kind expressed or implied, with respect to such information, including any information linked sites and including, but not limited to, accuracy of the information of its completeness, timelines, usefulness, adequacy, continues availability, or ownership.

**East Mississippi Community College
Golden Triangle Modern Manufacturing Project**



Hybrid Online Courses- Strategy 4: Strengthen online and technology-enabled learning. Action 4.2 Develop hybrid online versions of sections within the new technician education courses.

Relevant Deliverable- Five hybrid online versions of sections within the new technician education courses.

In accordance with EMCC's Golden Triangle Modern Manufacturing Project through the U.S. Department of Labor TAACCCT program, the college has developed five hybrid sections of courses included in the technician programs. Below are syllabi for the five hybrid courses:

- IMM-1113 Industrial Maintenance Core and Safety
- IMM-2433 Electronic Motion Control
- INT-1214 Fluid Power
- WLT-1177 Intro to Welding and Safety
- IMM-2513 Programmable Logic Controllers Multi-Platform

Note: All course materials and content are provided in the IMS Common Cartridge (IMSCC) format. The content can be accessed by opening the IMSCC file using your organization's Learning Management System application (these include Blackboard, D2L, Canvas etc.).

[2016fa-imm-1113-ind-maint-core-and-safety-export.imsc](#)

[2016fa-wlt-2813-metallurgy-export.imsc](#)

[2016fa-int-1214-fluid-power-export.imsc](#)

[2016fa-imm-2433-electronic-motion-control-export.imsc](#)

[2016fa-imm-2513-plc-multi-export.imsc](#)

The courses have been developed by instructors and validated by members of the Modern Manufacturing Sector Advisory Council.

**IMM-1113 Industrial Maintenance Core and Safety
Fall 2016 Syllabus**

Part 1: Course Information

Course Description

This hybrid course includes basic safety, an introduction to construction math, an introduction to hand and power tools, an introduction to construction drawings, and introductions to employability skills and communications.

Prerequisite

- None.

Textbook & Course Materials

Required Text

Course Requirements

- Internet connection (DSL, LAN, or cable connection desirable)
- Access to Canvas

Course Structure

This course is designed to provide a hybrid experience, including both face-to-face and online activities.

Contact time will be divided in the following way:

80 % face-to-face

20 % online

Online sessions will be a blend of self-paced and group activities using Canvas and other Web sites such as YouTube, Khan Academy. Activities will consist of chats, blogs, discussion forums, email, journaling, and web posting.

Face-to-face sessions will be held on the EMCC Golden Triangle campus in Douglas Room 138 on Tuesday & Thursday 8:00am – 9:50am.

Canvas Access

This course will be delivered partially online through a course management system named Canvas.

To access this course on Canvas, you will need access to the Internet and the web browser Internet Explorer, as it does not work well in any other browser. To ensure that you are using a supported browser and have required plug-ins please run the Check Browser from your Canvas course. Refer to the LEO portal for additional instructions.

Technical Assistance

If you need technical assistance at any time during the course or to report a problem with Canvas you can:

- Visit the Canvas [Student Resources Page](#)
- Review Canvas [Student Tutorials](#)
- Visit the Canvas [Student FAQ's Web page](#)
- Submit a Canvas [Problem Form](#)

Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in course announcement or through student email.

Part 2: Course Objectives

Student Learning Outcomes:

All Competencies will be taught and tested. Competencies outlined by the state that a student must master in order to pass this class are:

- Follow general safety practices used in industries and shops.
- Demonstrate personal safety practices used in industries and shops.
- Demonstrate electrical safety practices associated with industrial maintenance.
- Demonstrate power tool safety practices associated with industrial maintenance.

You will meet the objectives listed above through a combination of the following activities in this course:

- Lecture / Discussions (large and small groups)
- Audio / Visual Instruction
- Individual and Group Projects / Presentations
- Reading / Writing Assignments
- Laboratory Exercises
- Quizzes and Examinations

State, National, or other performance tests required:

Safety Test – Each student enrolled in a Career/Technical class/program must successfully pass a safety test. This test is based on knowledge and skills needed to safely perform duties and responsibilities within the chosen field of study.

Part 3: Outline

Important Note: Refer to the course modules/assignments for specific meeting dates and times. Activity and assignment details will be explained within each week's corresponding learning module. If you have any questions, please contact your instructor.

- Module One - Introduction to Class
 - Industrial Maintenance Core & Safety Syllabus
- Module Two - Lock Out Tag Out Training
 - Lock-Out / Tag-Out 15 Question Test
- Module Three - Chapter 1 – Basic Safety
 - 00101-09 Review Questions
 - 00101-09 Trade Terms Quiz
 - 00101-09 Basic Safety Lab
 - 00101-09 Basic Safety Test
- Module Four – Chapter 2 – Construction Math
 - 00102-09 Review Questions
 - 00102-09 Trade Term Quiz
 - 00102-09 Intro to Construction Math Test
- Module Five – Chapter 3 – Introduction to Hand Tools

- 00103-09 Review Questions
- 00103-09 Trade Term Quiz
- 00103-09 Introduction to Hand Tools Lab
- 00103-09 Intro to Hand Tools Test
- Module Six – Chapter 4 – Introduction to Power Tools
 - 00104-09 Review Questions
 - 00104-09 Trade Term Quiz
 - 00104-09 Intro to Power Tools Lab
 - 00104-09 Intro to Power Tools Test
- Module Seven – Chapter 5 – Introduction to Construction Drawings
 - 00105-09 Review Questions
 - 00105-09 Trade Term Quiz
 - 00105-09 Intro to Construction Drawings Lab
 - 00105-09 Intro to Construction Drawings Test
- Module Eight – Chapter 6 – Basic Rigging
 - 00106-09 Review Questions
 - 00106-09 Trade Term Quiz
 - 00106-09 Basic Rigging Lab
 - 00106-09 Basic Rigging Test
- Module Nine – Chapter 7 – Basic Communication Skills
 - 00107-09 Review Questions
 - 00107-09 Trade Term Quiz
 - 00107-09 Basic Communication Skills Lab
 - 00107-09 Basic Communication Skills Test
- Module Ten – Chapter 8 – Basic Employability Skills
 - 00108-09 Review Questions
 - 00108-09 Trade Term Quiz
 - 00108-09 Basic Employability Skills Lab
 - 00108-09 Basic Employability Skills Test
- Module Eleven – Chapter 9 – Introduction to Material Handling
 - 00109-09 Trade Term Quiz
 - 00109-09 Review Questions
 - 00109-09 Introduction to Material Handling Lab
 - 00109-09 Introduction to Material Handling Test

Part 4: Grading Policy

Chapter Tests	60%
Lab Assignments	30%
Homework	10%

The goal of this class is to receive your NCCER Core Certification; however it is possible to pass the class and not receive your certification. You must receive a 70% on each chapter test and pass certain skills assessment included in class labs to receive your certification. You will have an opportunity to retest to bring your grade up for the certification, but your original grade will stand in the grade book.

Important note: For more information about grading at East Mississippi Community College, visit the academic policies and grading section of the university catalog.

Part 5: Course Policies

Attend Class

Students are expected to attend all online and face-to-face class sessions as listed on the course calendar. Attendance at face-to-face class meetings and participation in online activities is essential for the success of the hybrid experience.

Complete Assignments

All assignments for this course will be submitted electronically through Canvas unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances.

All discussion assignments must be completed by the assignment due date and time. Late or missing discussion assignments will effect the student's grade.

Inform Your Instructor of Any Accommodations Needed – EMCC follows all Americans with Disabilities Act standards. Disclosure of a disability is voluntary. Students with disabilities are invited and encouraged to discuss their needs and accommodation strategies with the Dean of Students.

Important Note: Any form of academic dishonesty, including cheating and plagiarism, may be reported to the Dean of Students.

Course policies are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be posted in Canvas.

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Compliance Contacts Statement

The following offices have been designated to handle inquiries regarding the non-discrimination policies:

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Scooba, Mississippi 39358
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Campus Director and Dean of Students Golden Triangle Campus

8731 South Frontage Road
Mayhew, MS 39753
662.243.1979

IMM-2433 Electronic Motion Control Fall 2016 Syllabus

Part 1: Course Information

Course Description

This hybrid course provides instruction on applications and operating procedures of solid-state controls, reduced voltage starters, and adjustable frequency drives as well as troubleshooting procedures.

Prerequisite

- ELT-1413 Motor Control Systems

Textbook & Course Materials

Required Text

Electric Motor Drive (Installation and Troubleshooting)

Course Requirements

- Internet connection (DSL, LAN, or cable connection desirable)
- Access to Canvas

Course Structure

This course is designed to provide a hybrid experience, including both face-to-face and online activities.

Contact time will be divided in the following way:

80 % face-to-face

20 % online

Online sessions will be a blend of self-paced and group activities using Canvas and other Web sites such as YouTube, Khan Academy. Activities will consist of chats, blogs, discussion forums, email, journaling, and web posting.

Face-to-face sessions will be held on the EMCC Golden Triangle campus in Douglas Room 138 on Tuesday & Thursday 8:00am – 9:50am.

Canvas Access

This course will be delivered partially online through a course management system named Canvas.

To access this course on Canvas, you will need access to the Internet and the web browser Internet Explorer, as it does not work well in any other browser. To ensure that you are using a supported browser and have required plug-ins please run the [Check Browser](#) from your Canvas course. Refer to the LEO portal for additional instructions.

Technical Assistance

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- Visit the Canvas [Student FAQ's Web page](#)
- Submit a Canvas [Problem Form](#)

Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in course announcement or through student email.

Part 2: Course Objectives

Student Learning Outcomes:

All Competencies will be taught and tested. Competencies outlined by the state that a student must master in order to pass this class are:

- Apply general safety and safety requirements for working on and around electrical motors.
- Troubleshoot and repair solid state motor controls.
- Operate AC/DC variable speed drives.
- Discuss and describe various types of feedback devices used with electronic motion controls.
- Discuss, describe and program various types of parameters for a variable frequency drive.

You will meet the objectives listed above through a combination of the following activities in this course:

- Lecture / Discussions (large and small groups)
- Audio / Visual Instruction
- Individual and Group Projects / Presentations

- Reading / Writing Assignments
- Laboratory Exercises
- Quizzes and Examinations

State, National, or other performance tests required:

Safety Test – Each student enrolled in a Career/Technical class/program must successfully pass a safety test. This test is based on knowledge and skills needed to safely perform duties and responsibilities within the chosen field of study.

Part 3: Outline

Important Note: Refer to the course modules/assignments for specific meeting dates and times. Activity and assignment details will be explained within each week's corresponding learning module. If you have any questions, please contact your instructor.

- Module One
 - Defining Motion Control
- Module Two
 - Identifying Motion Control System Components and Functions
- Module Three
 - Applying Basic Motion Control Concepts
- Module Four
 - Identifying the Components of a Digital Servo Motion Controller
- Module Five
 - Identifying the Functionality of Servo Drives
- Module Six
 - Identifying the Functionality of AC and DC Servo Motors
- Module Seven
 - Identifying the Functionality of Feedback Devices
- Module Eight
 - Identifying the Functionality of the Software Servo Loop
- Module Nine
 - Applying Motion Profiles
- Module Ten
 - Applying Electronic Gearing and Camming Profiles
- Module Eleven
 - Fundamentals of Motion Control: Integrated Practice

Part 4: Grading Policy

Chapter Tests	60%
Lab Assignments	30%
Homework	10%

Important note: For more information about grading at East Mississippi Community College, visit the academic policies and grading section of the university catalog.

Part 5: Course Policies

Attend Class

Students are expected to attend all online and face-to-face class sessions as listed on the course calendar. Attendance at face-to-face class meetings and participation in online activities is essential for the success of the hybrid experience.

Complete Assignments

All assignments for this course will be submitted electronically through Canvas unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances.

All discussion assignments must be completed by the assignment due date and time. Late or missing discussion assignments will affect the student's grade.

Inform Your Instructor of Any Accommodations Needed – EMCC follows all Americans with Disabilities Act standards. Disclosure of a disability is voluntary. Students with disabilities are invited and encouraged to discuss their needs and accommodation strategies with the Dean of Students.

Important Note: Any form of academic dishonesty, including cheating and plagiarism, may be reported to the Dean of Students.

Course policies are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be posted in Canvas.

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Compliance Contacts Statement

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INT-1214 FLUID POWER

Fall 2016 Syllabus

Part 1: Course Information

Course Description

This hybrid course provides instruction in hydraulics and pneumatics. The course covers actuators, accumulators, valves, pumps, motors, coolers, compression of air, control devices, and circuit diagrams. Emphasis is placed on the development of control circuits and troubleshooting techniques.

Prerequisite

- None.

Textbook & Course Materials

Required Text

- Introduction to Fluid Power, James L. Johnson

Course Requirements

- Internet connection (DSL, LAN, or cable connection desirable)
- Access to Canvas

Course Structure

This course is designed to provide a hybrid experience, including both face-to-face and online activities.

Contact time will be divided in the following way:

80 % face-to-face

20 % online

Online sessions will be a blend of self-paced and group activities using Canvas and other Web sites such as YouTube, Khan Academy. Activities will consist of chats, blogs, discussion forums, email, journaling, and web posting.

Face-to-face sessions will be held on the EMCC Golden Triangle campus in Douglas Room 138 on Monday & Wednesday 1pm-3pm.

Canvas Access

This course will be delivered partially online through a course management system named Canvas.

To access this course on Canvas, you will need access to the Internet and the web browser Internet Explorer, as it does not work well in any other browser. To ensure that you are using a supported browser and have required plug-ins please run the [Check Browser](#) from your Canvas course. Refer to the LEO portal for additional instructions.

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Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in course announcement or through student email.

Part 2: Course Objectives

Student Learning Outcomes:

All competencies will be taught and tested.

Competencies outlined by the state that a student must master in order to pass this class are:

- Define and describe basic laws governing fluids
- Describe operation and nomenclature of various pumps and compressors
- Identify and draw symbols for hydraulics and pneumatics.
- Explain fluids as pertaining to the transmission of energy
- Explain the types of actuators used in pneumatics and hydraulics.
- Describe the operation of flow, pressure, and directional control valves
- Explain, construct, and troubleshoot various hydraulic and pneumatic circuits
- Demonstrate the use of electro-mechanical controls in hydraulic and pneumatic circuits.

You will meet the objectives listed above through a combination of the following activities in this course:

- Lecture / Discussions (large and small groups)
- Audio / Visual Instruction
- Individual and Group Projects / Presentations
- Reading / Writing Assignments
- Laboratory Exercises

- Quizzes and Examinations

State, National, or other performance tests required:

Safety Test – Each student enrolled in a Career/Technical class/program must successfully pass a safety test. This test is based on knowledge and skills needed to safely perform duties and responsibilities within the chosen field of study.

Part 3: Outline

Important Note: Refer to the course modules/assignments for specific meeting dates and times. Activity and assignment details will be explained within each week's corresponding learning module. If you have any questions, please contact your instructor.

- Module One - Fluid Power Safety
 - Lock-Out / Tag-Out
- Module Two - Units, Test Equipment and Schematics
 - Units of Pressure
 - Units of Flow
 - Measurement of pressure and flow
 - Schematics
- Module Three - Principles of Fluid Power
 - Pascal's Law
 - Calculating force output of a cylinder given pressure
 - Calculating speed of a cylinder given flow rate
- Module Four - Pumps and Compressors
 - Types of Hydraulic pumps
 - Types of compressors
 - Powering pumps and compressors
 - Hydraulic pump controls
 - Compressor controls
- Module Five - Output Devices
 - Types of cylinders
 - Cylinder performance
 - Cylinder construction and rebuilding
 - Types of motors
 - Motor performance
 - Motor rebuilding
- Module Six - Directional Control
 - Types of directional control
 - Types of valves
- Module Seven - Pressure control
 - Pressure reducing valves
 - Pressure relief valves
 - Pressure sequence valves
- Module Eight - Flow control
 - Speed control of output devices

- Module Nine – Miscellaneous Components
 - Filters
 - Water separators
 - Heat exchangers
 - Accumulators
- Module Ten - Electro fluid power
 - Controlling circuits using electricity
- Module Eleven - Troubleshooting
 - Methods of troubleshooting
 - 5 whys
 - Root cause analysis

Part 4: Grading Policy

Grades for this course will follow a ten point grading scale; the lowest passing grade will be 60.

Test	30%
Quizzes	10%
Homework	10%
Lab	30%
Final Test	20%

Important note: For more information about grading at East Mississippi Community College, visit the academic policies and grading section of the university catalog.

Part 5: Course Policies

Attend Class

Students are expected to attend all online and face-to-face class sessions as listed on the course calendar. Attendance at face-to-face class meetings and participation in online activities is essential for the success of the hybrid experience.

Complete Assignments

All assignments for this course will be submitted electronically through Canvas unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances.

All discussion assignments must be completed by the assignment due date and time. Late or missing discussion assignments will affect the student's grade.

Inform Your Instructor of Any Accommodations Needed – EMCC follows all Americans with Disabilities Act standards. Disclosure of a disability is voluntary. Students with disabilities are invited and encouraged to discuss their needs and accommodation strategies with the Dean of Students.

Important Note: Any form of academic dishonesty, including cheating and plagiarism, may be reported to the Dean of Students.

Course policies are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be posted in Canvas.

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WLT-2813 Metallurgy Fall 2016 Syllabus

Part 1: Course Information

Course Description

This hybrid course is designed to give the student experience in the concept of metallurgy and how metals react to internal and external strains and temperature changes.

Prerequisite

- WLT 1115 Shielded Metal Arc Welding I

Textbook & Course Materials

Required Text

- Welding Skills Fourth Edition

Course Requirements

- Internet connection (DSL, LAN, or cable connection desirable)
- Access to Canvas

Course Structure

This course is designed to provide a hybrid experience, including both face-to-face and online activities.

Contact time will be divided in the following way:

80 % face-to-face

20 % online

Online sessions will be a blend of self-paced and group activities using Canvas and other Web sites such as YouTube, Khan Academy. Activities will consist of chats, blogs, discussion forums, email, journaling, and web posting.

Face-to-face sessions will be held on the EMCC Golden Triangle campus in Douglas Room 138 on Tuesday & Thursday 8:00am – 9:50am.

Canvas Access

This course will be delivered partially online through a course management system named Canvas.

To access this course on Canvas, you will need access to the Internet and the web browser Internet Explorer, as it does not work well in any other browser. To ensure that you are using a supported browser and have required plug-ins please run the Check Browser from your Canvas course. Refer to the LEO portal for additional instructions.

Technical Assistance

If you need technical assistance at any time during the course or to report a problem with Canvas you can:

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- Submit a Canvas [Problem Form](#)

Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in course announcement or through student email.

Part 2: Course Objectives

Student Learning Outcomes:

All Competencies will be taught and tested. Competencies outlined by the state that a student must master in order to pass this class are:

1. Explore metals and effect that heat has on these metals.
 - a. Identify different types of metals by ASTM classification, and describe the characteristics and uses.
 - b. Identify the effect different ranges of heat have on base metal.
 - c. Identify the different structures of metal.
2. Explore the use hardness testing equipment.
 - a. Identify and describe the use of hardness testing equipment.
 - b. Safely perform hardness testing procedures.
3. Explore the Heat Affected Zone on weldments.
 - a. Describe the effect of the heat input on the weld area.
 - b. Describe methods of prevention and correction of damage to the base metal.

You will meet the objectives listed above through a combination of the following activities in this course:

- Lecture / Discussions (large and small groups)
- Audio / Visual Instruction
- Individual and Group Projects / Presentations
- Reading / Writing Assignments
- Laboratory Exercises
- Quizzes and Examinations

State, National, or other performance tests required:

Safety Test – Each student enrolled in a Career/Technical class/program must successfully pass a safety test. This test is based on knowledge and skills needed to safely perform duties and responsibilities within the chosen field of study.

Part 3: Outline

Important Note: Refer to the course modules/assignments for specific meeting dates and times. Activity and assignment details will be explained within each week's corresponding learning module. If you have any questions, please contact your instructor.

NCCER Welding Level 1

- Module 29106 — Weld Quality
 - Identify and explain codes governing welding.
 - Identify and explain weld imperfections and their causes.
 - Identify and explain nondestructive examination practices.
 - Identify and explain welder qualification tests.
 - Explain the importance of quality workmanship.

- Identify common destructive testing methods.
- Perform a visual inspection of fillet welds.

AWS Sense Welding Level 1

- Module 1: Welding Inspection and Testing Key Indicators
 - Examines cut surfaces and edges of prepared base metal parts.
 - Examines tacks, root passes, intermediate layers, and completed welds.

Part 4: Grading Policy

Chapter Tests	60%
Lab Assignments	30%
Homework	10%

Important note: For more information about grading at East Mississippi Community College, visit the academic policies and grading section of the university catalog.

Part 5: Course Policies

Attend Class

Students are expected to attend all online and face-to-face class sessions as listed on the course calendar. Attendance at face-to-face class meetings and participation in online activities is essential for the success of the hybrid experience.

Complete Assignments

All assignments for this course will be submitted electronically through Canvas unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances.

All discussion assignments must be completed by the assignment due date and time. Late or missing discussion assignments will affect the student's grade.

Inform Your Instructor of Any Accommodations Needed – EMCC follows all Americans with Disabilities Act standards. Disclosure of a disability is voluntary. Students with disabilities are invited and encouraged to discuss their needs and accommodation strategies with the Dean of Students.

Important Note: Any form of academic dishonesty, including cheating and plagiarism, may be reported to the Dean of Students.

Course policies are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be posted in Canvas.

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IMM-2513 Programmable Logic Controllers Multi-Platform Fall 2016 Syllabus

Part 1: Course Information

Course Description

This hybrid course provides instruction practice in the use of programmable logic controllers (PLC's) in modern industrial settings. This course includes instruction in the operating principles of PLC's and practice in the programming, installation, and maintenance of PLC's.

Prerequisite

- ELT-1413 Motor Control Systems

Textbook & Course Materials

Required Text

Programmable Logic Controllers, Fifth Edition and the Programmable Logic Controllers Activity Manual.

Course Requirements

- Internet connection (DSL, LAN, or cable connection desirable)
- Access to Canvas

Course Structure

This course is designed to provide a hybrid experience, including both face-to-face and online activities.

Contact time will be divided in the following way:

80 % face-to-face

20 % online

Online sessions will be a blend of self-paced and group activities using Canvas and other Web sites such as YouTube, Khan Academy. Activities will consist of chats, blogs, discussion forums, email, journaling, and web posting.

Face-to-face sessions will be held on the EMCC Golden Triangle campus in Douglas Room 138 on Tuesday & Thursday 8:00am – 9:50am.

Canvas Access

This course will be delivered partially online through a course management system named Canvas.

To access this course on Canvas, you will need access to the Internet and the web browser Internet Explorer, as it does not work well in any other browser. To ensure that you are using a supported browser and have required plug-ins please run the Check Browser from your Canvas course. Refer to the LEO portal for additional instructions.

Technical Assistance

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Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in course announcement or through student email.

Part 2: Course Objectives

Student Learning Outcomes:

All Competencies will be taught and tested. Competencies outlined by the state that a student must master in order to pass this class are:

- Describe the principals of PLC's.
- Utilize the different types of PLC hardware.
- Demonstrate knowledge of numbering systems and logical operations.

- Demonstrate the ability to program various types of internal and discrete instructions.
- Demonstrate the ability to troubleshoot and maintain different programmable controller systems.
- Demonstrate the ability to use different PLC programming software.

You will meet the objectives listed above through a combination of the following activities in this course:

- Lecture / Discussions (large and small groups)
- Audio / Visual Instruction
- Individual and Group Projects / Presentations
- Reading / Writing Assignments
- Laboratory Exercises
- Quizzes and Examinations

State, National, or other performance tests required:

Safety Test – Each student enrolled in a Career/Technical class/program must successfully pass a safety test. This test is based on knowledge and skills needed to safely perform duties and responsibilities within the chosen field of study.

Part 3: Outline

Important Note: Refer to the course modules/assignments for specific meeting dates and times. Activity and assignment details will be explained within each week's corresponding learning module. If you have any questions, please contact your instructor.

- Module One
 - Overview of PLCs
- Module Two
 - Central Processing Unit
- Module Three
 - I/O System
- Module Four
 - Programming Terminals and Peripherals
- Module Five
 - Installation and Maintenance of PLCs
- Module Six
 - Relay and Ladder Logic
- Module Seven
 - Timers
- Module Eight
 - MCR, JUMP, and FORCE Instructions
- Module Nine
 - Sequencers
- Module Ten

- Data Transfer
- Module Eleven
 - Process Control
- Module Twelve
 - Digital Logic

Part 4: Grading Policy

Chapter Tests	60%
Lab Assignments	30%
Homework	10%

Important note: For more information about grading at East Mississippi Community College, visit the academic policies and grading section of the university catalog.

Part 5: Course Policies

Attend Class

Students are expected to attend all online and face-to-face class sessions as listed on the course calendar. Attendance at face-to-face class meetings and participation in online activities is essential for the success of the hybrid experience.

Complete Assignments

All assignments for this course will be submitted electronically through Canvas unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances.

All discussion assignments must be completed by the assignment due date and time. Late or missing discussion assignments will affect the student's grade.

Inform Your Instructor of Any Accommodations Needed – EMCC follows all Americans with Disabilities Act standards. Disclosure of a disability is voluntary. Students with disabilities are invited and encouraged to discuss their needs and accommodation strategies with the Dean of Students.

Important Note: Any form of academic dishonesty, including cheating and plagiarism, may be reported to the Dean of Students.

Course policies are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be posted in Canvas.

East Mississippi Community College is committed to assuring that the College and its programs are free from discrimination and harassment based upon race, color, ethnicity, sex, pregnancy, religion, national origin, disability, age, sexual orientation, gender identity, genetic information, status as a U.S. veteran, or any other status protected by state or federal law.

Compliance Contacts Statement

The following offices have been designated to handle inquiries regarding the non-discrimination policies:

*Office of the District Director of Human Resources, Payroll and EEOC/OCR
1512 Kemper Street
Scooba, Mississippi 39358
662.476.5274*

*Campus Director and Dean of Students Golden Triangle Campus
8731 South Frontage Road
Mayhew, MS 39753
662.243.1979*