



# CHIPOLA COLLEGE

## COURSE SYLLABUS

Chipola's website: [www.chipola.edu](http://www.chipola.edu)

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**COURSE TITLE:**

MANUFACTURING AND PRODUCTION PROCESSES

**COURSE NUMBER:**

ETI 0432V

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**COURSE DESCRIPTION (with prerequisites):**

The Manufacturing and Production Processes course prepares students for entry into the advanced manufacturing industry. Content emphasizes beginning skills key to the success of working in the manufacturing industry. Students study how to select production processes; computer-aided manufacturing and flexible manufacturing planning; produce a product via a master project; manual milling machines, computer-numeric-control machines, and welding systems; and robotic systems used in manufacturing. 150 Clock Hours

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**NAME(S) OF INSTRUCTORS:**

Lessa Bates, Building O, Room 107, (850) 718-2444, [batesl@chipola.edu](mailto:batesl@chipola.edu)

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**EFFECTIVE ACADEMIC YEAR:**

2021-2022

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**REQUIRED TEXTBOOKS AND INSTRUCTIONAL MATERIALS:**

Shawn A. Ballee, Gary R. Shearer, Industrial Maintenance and Mechatronics. G-W Publishing, ISBN: 9781635634273.

The lectures and lab skills will be content from **Amatrol LMS**.

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**GRADING POLICY:**

The standing of a student in each course is expressed by one of the following letters and corresponding grading system:

**A – 90 – 100**

**B – 80 – 89**

**C – 70 – 79**

**D – 60 – 69**

**F – 59 or less**

The Chipola Catalog provides policies and procedures regarding the grading system. A student's Grade Point Average is derived from the grading system/quality point scale.

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**ATTENDANCE AND WITHDRAWAL POLICIES:**

Chipola College expects regular attendance of all students and for all instructors to record attendance daily. Students who are absent from classes for any reason other than official college activities must satisfy the instructor concerned that the absence was due to illness or other clearly unavoidable reasons. Otherwise, the student may suffer grade loss at the

discretion of the instructor. Chipola policy allows each instructor to specify in the Instructor First Day Handout whether or not an absence is excusable and what effect the absence or tardy may have on the grade.

A student is allowed to repeat a course a maximum of three (3) times. **On the third attempt a student (1) must bear the full cost of instruction (unless waived by Student Services), (2) cannot withdraw, and (3) must receive a grade.**

#### **MAKE-UP POLICY:**

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Chipola allows each instructor to specify in the Instructor First Day Handout the makeup policy.

#### **ACADEMIC HONOR CODE POLICY:**

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Students are expected to uphold the Academic Honor Code, which is based on the premise that each student has the responsibility to (1) uphold the highest standards of academic honesty in his/her own work; (2) refuse to tolerate academic dishonesty in the college community; and (3) foster a high sense of honor and social responsibility on the part of students. Further information regarding the Academic Honor Code may be found in the Chipola Catalog, Student Governance section.

#### **STUDENTS WITH DISABILITIES POLICY:**

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Chipola College is committed to making all programs and facilities accessible to anyone with a disability. Chipola's goal is for students to obtain maximum benefit from their educational experience and to effectively transition into the college environment. Students with disabilities are requested to voluntarily contact the Office of Students with Disabilities to complete the intake process and determine their eligibility for reasonable accommodations.

#### **NOTICE OF EQUAL ACCESS/EQUAL OPPORTUNITY AND NONDISCRIMINATION:**

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Chipola College does not discriminate against any persons, employees, students, applicants or others affiliated with the college in regards to race, color, religion, ethnicity, national origin, age, veteran's status, disability, gender, genetic information, marital status, pregnancy or any other protected class under applicable federal and state laws, in any college program, activity or employment.

Wendy Phippen, Associate Vice President of Human Resources, Equity Officer and Title IX Coordinator, 3094 Indian Circle, Marianna, FL 32446, Building A, Room 183C, 850-718-2269, phippenw@chipola.edu.

#### **LIBRARY AND ON-LINE REFERENCE MATERIALS:**

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The library is a comprehensive learning resource center providing information in print, electronic, and multimedia format to support the educational objectives of the College. On-line catalogs, e-books, and electronic databases can be accessed through the Library Resources link within your course in Canvas or by using the *Search* icon on the Chipola Library website at [www.chipola.edu/library](http://www.chipola.edu/library). If you have questions about database usage, consult the "How to Use the Chipola Databases" on the Library website or call the Library at 850/718-2274 during regular hours. Library hours are

posted each semester at the building entrance and on the Library website. See your Instructor First Day Handout for individual instructor recommendations and resources.

### **TECHNOLOGY RESOURCES:**

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The college's learning management system is **Canvas**. Classes become available on Canvas on the first day of the semester. It is the student's responsibility to log onto the Canvas system the first day of class to establish the first day of attendance and to check announcements. All official class communication must be through Canvas. For further information, contact your instructor or the Director of Learning Resources. The Canvas support hotline is available online in live chat and on the phone, toll-free, at 855-308-2812 for any issues utilizing Canvas. The **Technology Center**, located in the library, is equipped with computer workstations. Lab hours are posted each semester at the building entrance and on the Library website.

### **FREE TUTORING RESOURCES:**

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The Academic Center for Excellence (**ACE**) Lab, located in Building L, offers free tutoring from 8 a.m. to 5 p.m. and is equipped with computer workstations. ACE lab hours are posted each semester at the room entrance and on the website. Additionally, Chipola College has contracted **Smarthinking**, a Pearson Company, for online tutoring services, accessible especially from 5 p.m. to 8 a.m. and weekends. Smarthinking can be accessed through Canvas.

### **ELECTRONIC DEVICE USAGE STATEMENT:**

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Classrooms should be free of all unnecessary distractions from the task of learning. Therefore, as a general rule, students should silence and avoid use of all electronic devices (laptops, phones, tablets, etc.) not being used for coursework. Consult first-day handouts for any specific policies related to the use of electronic devices in the classroom, as they may vary depending upon the nature of the course or the guidelines of the instructor. Faculty reserve the right to regulate the use of electronic devices and their accessories in class.

### **DISCIPLINE SPECIFIC COMPETENCIES / LEARNING OUTCOMES:**

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This course will provide the beginning skills required for the advanced manufacturing industry including production process selection, planning and final product production. The student will learn hands-on skills using manufacturing tools such as, manual milling machine, welding and robotics systems.

<b>Linking Course-level Student Learning Outcomes with Discipline-Specific Competencies, Assessment Methods, and Artifacts</b>		
<b>COURSE-LEVEL STUDENT LEARNING OUTCOMES FOR 0432V</b>	<b>DISCIPLINE-SPECIFIC GENERAL EDUCATION COMPETENCIES</b>	<b>ASSESSMENT METHODS FOR COURSE LEVEL STUDENT LEARNING OUTCOMES (see Notes below)</b>
<p>Upon the successful completion of this course, students will be able to:</p> <p>Demonstrate an understanding of and be able to select production processes</p> <p>Demonstrate an understanding of computer aided manufacturing and flexible manufacturing planning and control</p> <p>Demonstrate the ability to properly identify, organize, plan, allocate resources, document and produce a mass-produced product via a master project</p> <p>Demonstrate an understanding of industrial tools and processes inclusive of: Basic Machine Tools, CNC machines, and Welding technology</p> <p>Demonstrate proficiency in computer control and robotics</p> <ul style="list-style-type: none"> <li>•</li> </ul>	<p>Identify customer need and determine resources to create product with the best available process</p> <p>Demonstrate a knowledge of Enterprise and Material Resource Planning to coordinate workflow</p> <p>Apply practices to process product according to production plan</p> <p>Show the ability to create and deliver a presentation to communicate projects and results</p> <p>Demonstrate the ability to operate and program a CNC mill</p> <p>Demonstrate the ability to design and use a PLC program to control various production sequences and safety measures</p> <p>Demonstrate a basic understanding of a servo robot including operation, program design</p>	<p>Q, T, CF, SD, SP, H, RPT, PSk Check</p>

**Notes: Assessment Codes**

<b>BO</b> - Behavioral Observation	<b>EX</b> - Dept Exam	<b>Port</b> - Portfolio	<b>SD</b> - Skills Demonstration
<b>Cap Proj</b> - Capstone Course	<b>Exp</b> - Experiments	<b>Prac</b> - Practicum	<b>SE</b> - Natl or State Standardized
<b>CF</b> - Cumulative Final	<b>F</b> - Final Exam	<b>Pre/ Post</b> - Pre-/Post-Tests	<b>Sk</b> - Ck Skills Check-Off
<b>Clin</b> - Clinicals	<b>H</b> - Homework	<b>Proj</b> - Projects	<b>SP</b> - Skills Performance
<b>CP</b> - Case Plan	<b>Intern</b> - Internship	<b>PS</b> - Problem Solving	<b>T</b> - Tests
<b>CS</b> - Case Study	<b>J</b> - Jury	<b>Q</b> - Quizzes	<b>UT</b> - Unit Tests
<b>DB</b> - Discussion Board	<b>JP</b> - Judged Perf/Exh	<b>R</b> - Recital	<b>W</b> - Writing Assignments
<b>DE</b> - Documented Essays	<b>Obs</b> - Teacher Observ	<b>RP</b> - Research Papers	
<b>E</b> - Essays	<b>OT</b> - Objective Tests	<b>RPT</b> - Report/Presentation	

## **MEANS OF ACCOMPLISHING STUDENT LEARNING OUTCOMES:**

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1. In-class lecture and discussion.
2. On-line learning management systems
3. Hands-on competency-based labs.
4. Assessments.

## **ASSIGNMENT AND/OR COURSE OUTLINE**

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This course is competency-based and self-paced using handouts, LMS, computer-assisted instruction and instructor demonstrations.

1. Attending classes
2. Completing reading and computer assignments along with laboratory work.
3. Keeping a course notebook.
4. Quizzes, tests, homework, and practical exam.

## **CERTIFICATION ALIGNMENT:**

To earn your certification, you must submit and pass the Safety, Maintenance Awareness, Quality, and Manufacturing Processes exams. Individuals must pass all four CPTAE required assessments within two years in order to achieve the full-CPTAE certification. The MSSC-CPT Certification is valid for 5 years.

See your Instructor First Day Handout for individual instructor assignment schedule.