



# CHIPOLA COLLEGE

## COURSE SYLLABUS

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

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**COURSE TITLE:**

HYDRAULICS AND HYDROLOGY

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**COURSE NUMBER:**

ETC 2521

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**COURSE DESCRIPTION (with prerequisites):**

The course introduces the basic theory, engineering, and design technology related to hydrology and drainage areas, storm water runoff, and stream flow analysis. The student is also introduced to the basic theory and engineering design of the hydraulic flow in pipes and in open channel systems. Design concepts, techniques, and illustrations of hydrology and hydraulics are covered. Prerequisite: MAC 1114. 3 semester credit hours

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**NAME(S) OF INSTRUCTORS:**

Nikole Bethea

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**EFFECTIVE ACADEMIC YEAR:**

2023-2024

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**REQUIRED TEXTBOOKS AND INSTRUCTIONAL MATERIALS:**

*Computer Applications In Hydraulic Engineering – W/CD*, 8th Edition, Haestad, ISBN: 9781934493168

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**REQUIRED EQUIPMENT & SUPPLIES:**

- Access to a personal computer and printer
- Access to Microsoft Office (specifically Microsoft Word, Excel, and PowerPoint)
- Internet connection.

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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 all instructors' 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 affect 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:**

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

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

Students are expected to uphold the Academic Honor Code. Chipola College's Honor Code 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:**

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:**

Chipola College does not discriminate against any persons, employees, students, applicants or others affiliated with the college with regard 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, [pippenw@chipola.edu](mailto:pippenw@chipola.edu).

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

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 by using the *LINCCWeb* 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:**

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 eLearning. The Canvas support hotline is available online in live chat and on the phone, toll-free, at 855-308-2812 for any issues in accessing or 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:**

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:**

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:**

**Program Learning Outcome:** Understand basic hydraulic and mechanical problems

<b>LINKING COURSE-LEVEL STUDENT LEARNING OUTCOMES WITH DISCIPLINE-SPECIFIC COMPETENCIES, ASSESSMENT METHODS, AND ARTIFACTS</b>			
<b>COURSE-LEVEL STUDENT LEARNING OUTCOMES FOR ETC 2521</b>	<b>DISCIPLINE-SPECIFIC GENERAL EDUCATION COMPETENCIES</b>	<b>ASSESSMENT METHODS FOR COURSE LEVEL STUDENT LEARNING OUTCOMES</b>	<b>LEARNING ARTIFACTS FOR AA PROGRAM ASSESSMENT</b>

<p>At the completion of the course, the student will be able to:</p> <ul style="list-style-type: none"> <li>❖ Define storm water management</li> <li>❖ Describes properties of waters such as cohesion, adhesion, and capillarity</li> <li>❖ Compute pressure in water at various depths and with varying surfaces</li> <li>❖ Develop energy grade line and hydraulic grade line for basic systems</li> <li>❖ Calculate flows through an orifice, over a weir, and under a gate</li> <li>❖ Identify and compute critical depth in a channel</li> <li>❖ Analyze an existing culvert for adequacy using inlet and outlet control</li> <li>❖ Determine peak runoff by the Rational Method and NRCC Method</li> <li>❖ Compute pipe sizes in a storm sewer design</li> <li>❖ Make use of various technologies to organize, acquire, and convey information</li> </ul> <p>Communicate with clarity and precision regarding designs and concepts.</p>	<p>Demonstrate mastery of computer aided drafting (CAD) by constructing engineering, mechanical, and geometrical drawings.</p> <p>Demonstrate ability to sketch, letter, and generate line-work to describe various objects.</p> <p>Demonstrate ability to read and produce drawings involving orthographic projection, sections, pictorial and auxiliary views.</p> <p>Demonstrate a wide range of mathematical skills including plane trigonometry, strength of materials, technical, and other engineering problems, including theories learned in engineering mechanics.</p> <p>Demonstrate ability to use standard surveying equipment to make measurements and calculations to run a traverse, establish levels, keep notes and produce required drawings.</p> <p>Demonstrate ability to analyze physical and mechanical properties of soil and concrete.</p> <p>Demonstrate ability to solve basic hydraulic problems using the theory of incompressible fluids.</p> <p>Demonstrate on-site skills required to establish grades, locate property lines and utilities and produce plots and calculate cut and fill by average-end-area</p>	<p>Assessment methods used are:</p> <p>Q, UT, SD, SP, Proj, F</p>	<p style="text-align: right;">4</p>
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<b>**Assessment Codes</b>			
<b>T</b> = Tests	<b>RPT</b> = Report/Presentation	<b>Proj.</b> = Projects	<b>BO</b> = Behavioral Observation
<b>Pre/Post</b> = Pre- and Post-Tests	<b>SP</b> = Skills Performance	<b>Exp.</b> = Experiments	<b>Clin.</b> = Clinicals
<b>OT</b> = Objective Tests	<b>SD</b> = Skills Demonstration	<b>Cap. Proj.</b> = Capstone Project	<b>CS</b> = Case Study
<b>UT</b> = Unit Tests	<b>W</b> = Writing Assignments	<b>Cap. Course</b> = Capstone Course	<b>CP</b> = Case Plan
<b>Q</b> = Quizzes	<b>E</b> = Essays	<b>Prac.</b> = Practicum	<b>Port.</b> = Portfolio
<b>F</b> = Final Examination	<b>DE</b> = Documented Essays	<b>Intern.</b> = Internship	<b>Obs.</b> = Teacher Observation
<b>CF</b> = Cumulative Final	<b>RP</b> = Research papers	<b>H</b> = Homework	<b>Sk. Check</b> = Skills Check-off Curriculum Frameworks
<b>EX</b> = Departmental Exam	<b>J</b> = Jury	<b>PS</b> = Problem Solving	<b>JP</b> = Judged Performance/Exhibition
<b>SE</b> = Nat'l or State Standardized Exam	<b>R</b> = Recital	<b>DB</b> = Discussion Board	

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

Learning outcomes are determined by measuring the ability of each student to retain the learning objectives of the course. Performance-based methods, such as completion of assigned projects, general knowledge tests, oral and written presentations of assignments, group discussions, observation of mastery of critical skills and analysis of the final product will determine the final grade on this course. |

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

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