



Syllabus

Digital Circuits

CET 1112C / 85507 / Fall 2026

3 Credit Hours / 4 Contact Hours

Pre-requisites: MAC 1105, EET 1084C

Contact Information

Instructor

Morris Jarmon Jr.
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Office Location: CHC 164
Office Hours (Days & Times): T,R 2 –
7:40 PM
Response Time: 24-48 Hours

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Course Information

Catalog Description:

Integrated lecture and laboratory experiences to facilitate the study of digital integrated circuits, number systems, and Boolean algebra simplification and introduction to computer architecture. Included is the study of gates, counters, adders, registers, multivibrators, and arithmetic logic units. National Instruments MultiSim will be used to design circuits and protoboards with test equipment will be used to build and test circuits.

Student Learning Outcomes:

Upon completion of the course the student should be able to:

1. Identify logic gates and their truth tables
2. Draw digital circuits from Boolean Expressions & Create Boolean expressions for circuits
3. Using the laws of Boolean Algebra, design circuits for various applications
4. Using MultiSim to design and test circuits
5. Build circuits to test designs on a protoboard
6. Set up and operate logic probes, power supplies, pulsers, oscilloscopes, logic analyzers,
7. and pulse generators for digital circuits
8. Analyze and construct flip-flops, registers, counters, and timing circuits
9. Identify and construct types of arithmetic logic circuits, encoders, and decoders

Course Materials & Resources:

- Text: *Digital Electronics: A Practical Approach* by William Kleitz, 9th Edition
- USB Drive for assignments and program storage marked with student's name
- 3-Ring binder notebook for class notes and assignments

Delivery Method:

This course meets face to face. Course material, assignments, and announcements may be offered via Canvas as a supplemental approach to learning at the discretion of the instructor. Please make sure that you have access to a computer with a webcam and internet service in the event a change in course delivery is needed.

Remember: This course is not one in which students may work at their own pace. Each week there are learning modules, assignments, online lectures, online discussions, and/or online exams with due dates. Refer to the schedule within this syllabus and within Canvas for more information.

Student Expectations

In this course, communication and feedback will occur through various channels, including GCSC email, Canvas Inbox, Canvas Announcements, Canvas Discussions, Microsoft Teams or Zoom, assignment feedback, and instructor office hours. Review the statements below so that you understand the expectations for communication.

As a student at Gulf Coast State College, you are expected to:

- **Adhere to Course Guidelines:** Follow the guidelines detailed in the course syllabus, along with any additional instructions provided by the instructor. This includes understanding and complying with the course objectives, grading criteria, and academic policies.

- **Maintain Regular Contact:** Keep in touch with your instructor and classmates via your GCSC email or other designated communication channels. Regular contact helps clarify doubts, share ideas, and foster a collaborative learning environment.
- **Active Participation:** Engage actively in class discussions and submit assignments on time. Your active participation is crucial for your academic success and contributes to a vibrant learning community.

As your instructor, my commitment to you is to:

- **Provide Timely Feedback:** I will review and provide feedback on your assignments and submissions promptly. My goal is to help you understand your strengths and areas for improvement, which is crucial for your academic growth.
- **Respond Via Canvas Inbox:** I will respond to your emails or messages within 24-48 hours (excluding weekends), unless otherwise noted. I understand the importance of clear and timely communication in addressing your questions and concerns.
- **Post Regular Announcements:** To keep you updated and help you manage your time effectively, I will send out weekly reminders via announcements. These reminders will include important dates, upcoming assignments, and any changes to the course schedule.
- **Maintain Weekly Office Hours:** I will maintain regular weekly office hours, but I can also be available by appointment. This is to ensure I'm available for any questions or concerns that may come up during the week.

Course Schedule

CET 1112C | Tentative Course Schedule | Fall 2026

| Dates | Module | Description |
|-------------|--------|---|
| 8/18 – 8/20 | 1 | Number Systems & Codes Assessments: Lab Activity, Homework Assignment |
| 8/25 – 8/27 | 2 | Digital Electronic Signals & Switches Assessments: Lab Activity, Homework Assignment |
| 9/1 – 9/3 | 3 | Basic Logic Gates Assessments: Lab Activity, Homework Assignment, Quiz |
| 9/7 | - | No class – College closed for Labor Day |
| 9/8 – 9/10 | 4 | Programmable Logic Devices Assessments: Lab Activity, Homework Assignment |
| 9/15 – 9/18 | 5 | Boolean Algebra and Reduction Techniques Assessments: Lab Activity, Homework Assignment |
| 9/22 – 9/24 | 6 | Exclusive-OR and Exclusive-NOR Gates Assessments: Lab Activity, Homework Assignment, Quiz |
| 9/29 – 10/1 | 7 | Arithmetic Operations and Circuits Assessments: Lab Activity, Homework Assignment |
| 10/6 – 10/8 | 8 | Code Converters, Multiplexers, & Demultiplexers |

| | | |
|----------------------|----|--|
| | | Assessments: Lab Activity, Homework Assignment, Quiz |
| 10/13 – 10/15 | 9 | Logic Families and Their Characteristics Assessments: Lab Activity, Homework Assignment |
| 10/20 – 10/22 | 10 | Flip Flops & Registers Assessments: Lab Activity, Homework Assignment |
| 10/27 – 10/29 | 11 | Practical Considerations for Digital Design Assessments: Lab Activity, Homework Assignment, Quiz |
| 11/3 – 11/5 | 12 | Counter Circuits & Applications Assessments: Lab Activity, Homework Assignment |
| 11/10 – 11/12 | 13 | Shift Registers Assessments: Lab Activity, Homework Assignment |
| 11/11 | - | No class – College closed for Veterans Day |
| 11/17 – 11/19 | 14 | Multivibrators and the 555 Timer Assessments: Lab Activity, Homework Assignment, Quiz |
| 11/24 | 15 | Interfacing to the Analog World Assessments: Lab Activity, Homework Assignment |
| 11/25 – 11/29 | - | No class – College closed for Thanksgiving Break |
| 12/1 – 12/3 | 16 | Semiconductor Memory (time permitting) Assessments: Lab Activity, Homework Assignment |
| 12/8 – 12/10 | 17 | Microprocessor Fundamentals (time permitting) Assessments: Final Exam |

The course schedule and assignments are subject to change at the instructor's discretion as needed to support course objectives and student learning outcomes.

Instructor's Notes

The instructor reserves the right to make changes to the syllabus when necessary throughout the course of the semester. Students will be provided with an updated syllabus should this become necessary.

Your instructor is here to help you. If you are having difficulty with the class assignments, please contact your instructor during office hours.

Considerable time outside of class will be required to complete course assignments. You should allow an average of two hours outside of class for every one credit hour to complete assignments. If you do not have access to a computer off campus, computers are available for student use when classes are not in session in rooms CHC 159, CHC 165, and CHC 231 that contain the software required for your degree program. There is no charge for the use of these rooms. Open lab schedules will be posted on each room door. The Library also has computers available for general student use.

Grading

GCSC Grading Scale

All grades will be posted in the student grade book in Canvas and will be assigned according to the following scale:

| | |
|---|---------------|
| A | 90%-100% |
| B | 80%-89% |
| C | 70%-79% |
| D | 60%-69% |
| F | 59% and below |

Calculation of Grades

| | |
|----------------------|-------------|
| Project Design | 20% |
| Homework Assignments | 10% |
| Lab Assignments | 15% |
| Quizzes | 10% |
| Chapter Tests | 25% |
| Final Exam | 20% |
| Total | 100% |

Course Policies

Accessibility Statement

Gulf Coast State College supports an inclusive learning environment for all students. If there are aspects of the instruction or design of this course that hinder your full participation, reasonable accommodations can be arranged. Prior to receiving accommodations, you must register with Student Accessibility Resources. Appropriate academic accommodations will be determined based on the documented needs of the student. Please visit [GCSC's Student Accessibility Resource \(SAR\) webpage](#) to learn more. For information regarding the registration process, email sar@gulfcoast.edu or call 850-747-3243.

Attendance Policy

Regular class attendance and participation are significant factors that help to promote success in college. Students are expected to attend all class meetings of all courses for which they are registered.

You are expected to know the instructor's specific attendance policy, as stated in the syllabus for each course. In the event of absence, you should contact your instructor as soon as possible

to indicate the reason and to inquire whether make-up work is possible. (Make-up work is offered solely at the discretion of your professor.)

If your absences in a class become excessive, as stated in the course syllabus, your professor may contact you, indicating that further absence may result in your withdrawal from the course. Your professor can withdraw you from a course for excessive absences without your permission.

Instructors will monitor attendance at the beginning of each semester. If you are not in attendance during this period, you may be withdrawn from the course. You will be financially responsible for the course and a "W or NS" will appear on your transcript. Withdrawal from a course may also have implications for financial aid.

Withdrawal Policy

Two withdrawals are permitted per credit course. After that, a grade will be assigned. Please be concerned about withdrawals. When admitting students into certain programs, universities may calculate withdrawals as grades. It is your responsibility to verify the effects of enrollment and/or withdrawal upon your financial assistance (financial aid, scholarships, grants, etc.). There are two kinds of withdrawals---student and administrative.

- *Student Withdrawal (W1)* - Students wishing to withdraw must complete the online Student Withdrawal Form before the scheduled withdrawal deadline as published in the College catalog. Student withdrawals initiated prior to the scheduled withdrawal deadline will be recorded as a grade of "W." The withdrawal deadline for an off-term or condensed term is one week after midterm.
- *Administrative Withdrawal (W2)* – A faculty member may withdraw a student up to the published withdrawal deadline for violation of the class attendance policy in which case the student will receive a grade of "W." The withdrawal deadline for an off-term or condensed term is one week after midterm.

Students cannot withdraw from developmental studies courses (college-preparatory classes) after the drop/add period without written permission from their instructor and/or their academic advisor.

Academic Integrity

Honest participation in academic endeavors fosters an environment in which optimal learning can take place and is consistent with the college's mission. Academic misconduct, including cheating or plagiarism, is destructive to the spirit of an educational environment. GCSC professors report every instance of student academic misconduct to the college for inclusion on the student's records.

Most course syllabi include an academic honesty policy and the consequences for violating this policy. Familiarize yourself with course policies regarding authorized or unauthorized use of AI to avoid the pitfalls of academic dishonesty.

The following definitions will apply:

"Cheating"

includes but is not limited to use of any unauthorized assistance in taking quizzes, tests, or examinations; dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; the acquisition without permission of tests or other academic materials belonging to a member of the College's faculty.

"Plagiarism"

includes, but is not limited to, the use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment as well as the purchase of papers or projects. It can also include overuse of an editing program like Grammarly or submitting work written by an Artificial Intelligence (AI) generator like ChatGPT. Make certain to consult your course syllabi for your instructor's guidelines of AI material.

"Self-plagiarism"

occurs when a student submits the same or considerably similar document to fulfill requirements in different classes. For example, if a student submits a term paper in Religion they originally wrote for an English class, this is self-plagiarism. Once a paper receives a grade in one class, it cannot be submitted again for another class.

"Generative Artificial Intelligence (AI)"

is technology that uses machine learning to create new content, such as text, images or code, based on user input. These systems are trained on vast amounts of data, including large language models and image or code generators. Common examples include ChatGPT, GitHub, Copilot, Google Gemini, Perplexity, and the Grammarly AI function.

Sanctions for incidences of academic misconduct, depending on the severity of the incidence and/or its repetition, may range from receiving an F grade (or 0) for the test, assignment, or activity, to failure of the course, to suspension or dismissal from the college.

Classroom Recording

In accordance with federal and state privacy laws, students may record class lectures for their own personal educational use, in connection with a complaint to the college, or as evidence in internal or external legal proceedings. Students may not publish or upload the recordings or any components thereof without the knowledge and written permission of the faculty member. Failure to obtain permission to publish could lead to the students' having to pay

damages, attorney fees, and court costs. For more information about what can be recorded, please see the guidelines in the GCSC Student Handbook.

Generative Artificial Intelligence (AI) Policy

The use of generative AI tools in academic work requires clear guidelines to maintain academic integrity. Please review the policy selected for this course regarding the use of AI tools such as ChatGPT, Copilot, Grammarly's AI features, and similar platforms for assignments, research, and other coursework.

See the student handbook for further information. Students with questions about acceptable use should consult their instructor.

Limited Assistive Use Only

Students may use basic assistive technologies for spelling, grammar, and formatting (e.g., PaperRater or SpellCheckPLUS); however, the use of AI tools (e.g., ChatGPT, Copilot, Grammarly's AI function, etc.) for generating, rewriting, or enhancing content is not permitted. All work must reflect the student's original ideas and writing. Representing work created by AI as one's own is a violation of academic integrity and may result in penalties, including a zero on the assignment and additional disciplinary actions as outlined in the college's academic integrity policy.

Anti-Discrimination Policy

Gulf Coast State College does not discriminate against any person in its programs, activities, policies or procedures on the basis of race, ethnicity, color, national origin, marital status, religion, age, gender, sex, pregnancy, sexual orientation, gender identity, genetic information, disability, or veteran status. All questions or inquiries regarding compliance with laws relating to non-discrimination and all complaints regarding sexual misconduct or discrimination may be directed to Amanda Reed, Executive Director of Human Resources/Title II/504/Title IX Coordinator and Employment Equity Officer, Gulf Coast State College, 5230 W. US Highway 98, Panama City, FL 32401; 850-769-1551, ext. 3516. Rules, policies, fees, and courses described in this catalog are subject to change without notice.

Syllabus Policy

For any syllabus posted prior to the beginning of the term, the instructor reserves the right to make minor changes prior to or during the term. The instructor will notify students via e-mail or Canvas announcement when changes are made in the requirements and/or grading of the course.

Student Support Resources

Gulf Coast State College is committed to providing you with the resources you need for success as a student and beyond. View all the academic and student support resources provided at GCSC on the [Student Services web page](#).

Course Technology & Support

To successfully participate in this online course, students must have basic computer and digital information literacy skills and meet the following technology requirements:

- **Computer:** Up-to-date web browser that supports the Canvas learning management system; please refer to the system requirements for compatibility and information on using the Canvas app on mobile devices.
- **Internet Speed:** Minimum bandwidth of 8 Mbps upload/download speed to effectively engage in online activities and access multimedia.
- **Office 365 software:** Available for free download through GCSC Information Technology Services (ITS).

If you need technical support, contact the ITS Help Desk, available 24/7 at (850) 913-3303.