

Advanced Technologies

CIS-293 30 0

Spring Term 2024-2025 School Year Section 30 0 2.00 Credits 01/13/2025 to 05/09/2025

Modified 01/13/2025

Course Description

This course will allow to students to explore/research new technologies in the IT world, make use of the technologies, and present/demonstrate the technology to their classmates in a classroom setting.

Prerequisite: CIS 130, CIS 196

Outcomes

Technical Skills

- Students will demonstrate the ability to encode/decode data such that it may keep track of the state of applications and objects, be saved for later use, or be transported between applications/systems

Critical Thinking

- Students will analyze documentation for new frameworks, systems, and languages to create unique projects.

Professionalism

- Students will demonstrate initiative in completing group work by dividing tasks for themselves and group members, and assisting in focusing the team on strengthening the project.
- Students will create technical documentation that clarifies the use, purpose, and intent of their code/programs.

Communication

- Students will align, present and summarize their work in respect to time constraints and intended audience.
- Students will recognize and apply industry standard terminology.

- Students will communicate their progress on projects and utilize time management skills to complete projects on time.

Course Materials

Online Documentation

There is no official textbook for this course. You will be finding and utilizing documentation at your own discretion.

Optional

Deliverables

Plan

For each project, you will explain your plan for the application you will build, and break down the plan to research the topic you chose as well as the prerequisite knowledge for that topic.

For example, when creating an Android app, you may break down that you need a front end for the app, and a back end for the database/server. From there, you can break down that the front end, you'll use React and Proton, and for the back end you'll use Node.js and MySQL. Then, you would make a list of sub topics within each of those to learn, e.g. React components, React web hooks, etc.

Plans are not graded, however you will not be allowed to turn in any other material for a topic until you complete your plan.

Status Report

You will turn in a progress reports at the end of the second and third week of each project.

If you did not make any progress during a week, send a report anyways. If you need support, reach out.

Status reports are not graded themselves, however if you do not complete the status reports, you will lose 20% of your grade on the related project for each report missed.

Project Presentation

One completed every 4 weeks. Presentation covering the project that the student completed, with the following areas looked at:

- Critical Thinking
 - Student's research first breaks down the prerequisite topics to what they will be learning, then displays a plan for learning prerequisites and theory incrementally.
 - Student is able to explain the concepts/topics researched to audiences unfamiliar with those topics.

- Communication
 - Student presentation draws audience attention and is audible to the whole audience (e.g. The classroom, people watching the recording, etc.)
- Professionalism
 - Diagrams and supporting material assist in explanations and make the results clear

For online sections, presentations will be recorded, however the instructor may require students to meet synchronously with the instructor to clarify details. Please check your email and the course pages regularly.

✓ Evaluation Procedures and Grading

Criteria

Type	Weight	Topic	Notes
Project/Presentation	25%	Learn a New Programming Language	You will learn a new programming language of your choice and create a substantial project in that language. Note: This can optionally also be a group project.
Project/Presentation	25%	Group Project	You will complete a substantial project as part of a group of 3 or more students. Note: You must complete at least one project as part of a group of 3 or more students. Group projects will need to be more substantial for each extra student added to the project.
Project/Presentation	25%	Free Choice - Solo	You will choose a topic that is new to you, research it, and create a substantial project. Note: You will need to complete at least one project on your own. You may choose to have this be the new language project if you like.
Project/Presentation	25%	Framework/API Project	You will choose a framework or api that is new to you, research it, and create a substantial project.

Course Outline

When	Topic	Notes
------	-------	-------

When	Topic	Notes
Topic 1 Weeks 1-4	Self Determined	Students will choose the order to the topics they pick.
Topic 2 Weeks 5-8	Self Determined	Students will choose the order to the topics they pick.
Topic 3 Weeks 9-12	Self Determined	Students will choose the order to the topics they pick.
Unit 4 Weeks 13-16	Self Determined	Students will choose the order to the topics they pick.