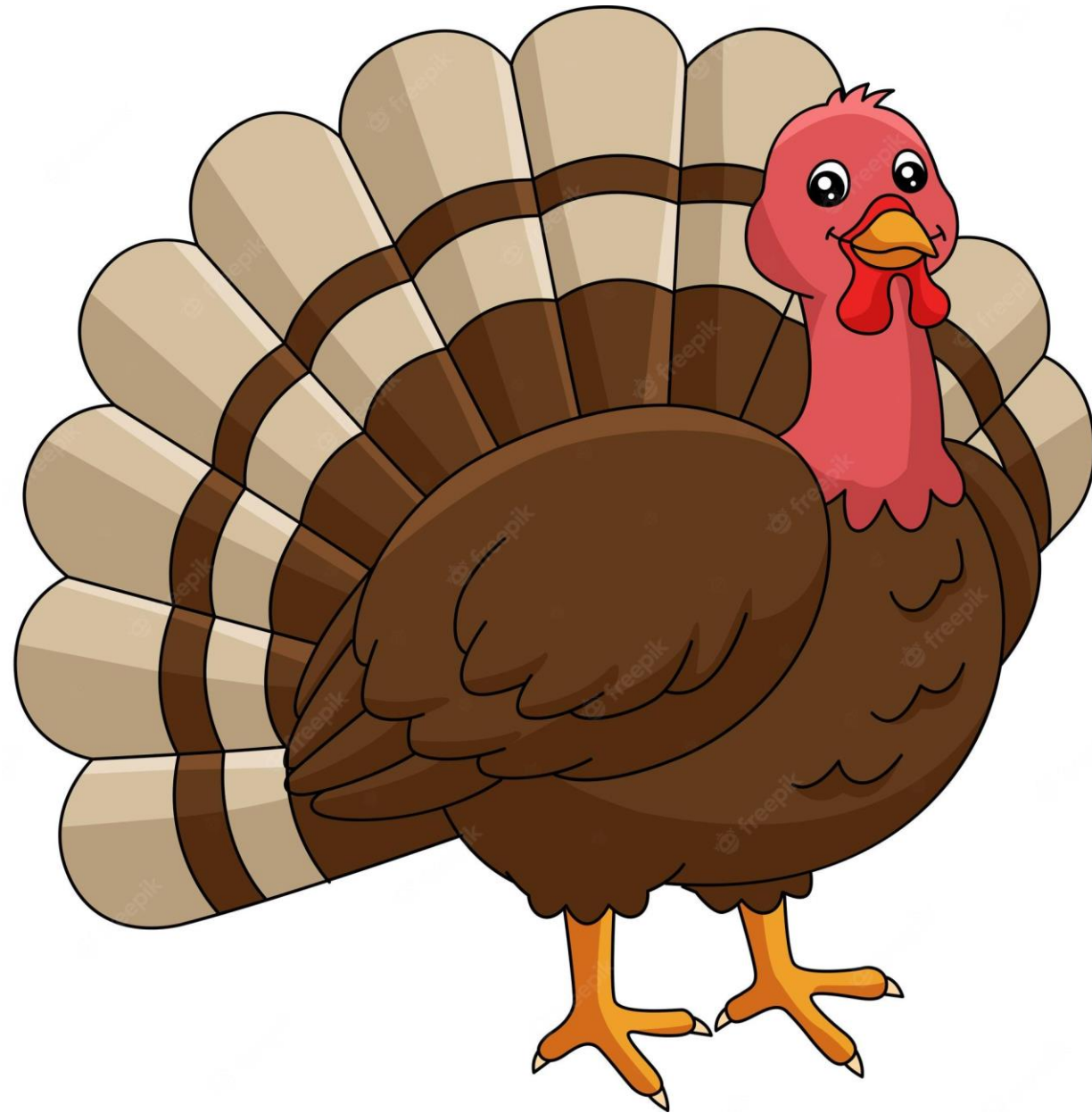


# EE3XX: Contemporary ECE Projects

Presented to:  
ECE Curriculum Committee Meeting  
November 23, 2022



# Contemporary ECE Projects

## Why?

Undergraduate students often express a desire for more real-world examples and applications related to the content they are learning in their classes.

Rather than waiting for the capstone design course(s) or rely on internships to provide this exposure to real-world applications, a project course can provide these experiences at the sophomore and junior level.

While EE499 (independent study) allows for such projects, EE499's are often done alone and lack structure or consistency, which can limit their overall value to the student's education.



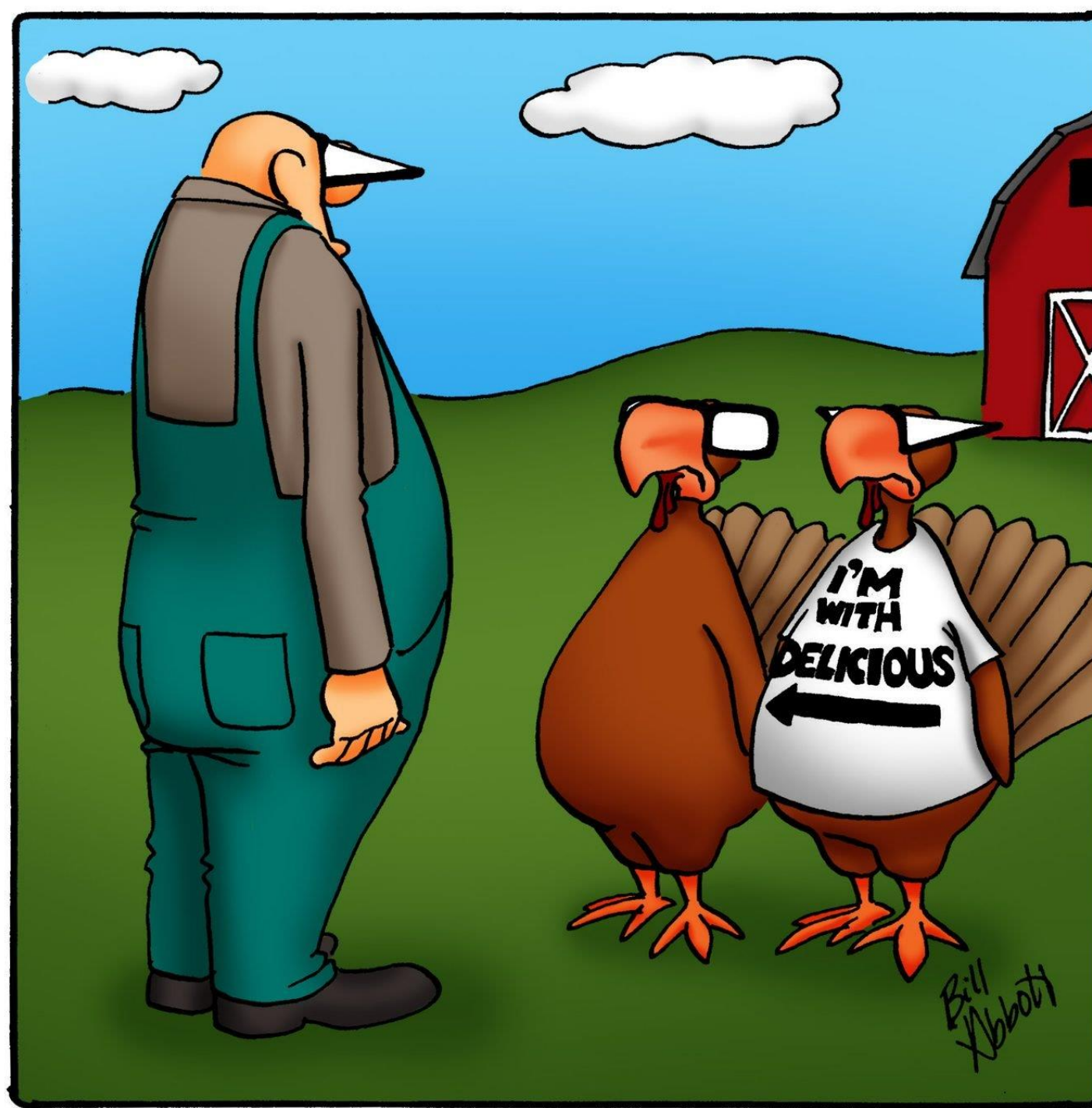
# Contemporary ECE Projects

What?

## Course Description:

Contemporary projects involving meaningful and rigorous design or analysis as applied to real-world problems in electrical and computer engineering.

Pre-requisites: <all the core classes>.





# Contemporary ECE Projects

## What?

### Learning Outcomes:

At the end of this course, the student will be able to:

- *Walk* on water
- *Describe*, quantitatively and qualitatively, a contemporary problem in electrical and computer engineering in the context of global/societal needs and priorities.
- Formally *formulate and propose* a solution to such a contemporary problem.
- *Express* the solution graphically via a high-quality, professionally presented block diagram.
- *Generate a* successful outcome to a real-world problem
- *Convey* the solution using well chosen and well presented figures and tables.



# Contemporary ECE Projects

## How?

Two credits

Formal course structure including:

A consistent body of information provided to the student prior to registration which communicates relevant aspects of the project including:

- Skills expected of the student
- Skills developed or improved via the project course
- Relevance of the project to society
- Etc.

A consistent set of deliverables (and rubrics for assessment) that is not a full fledged design project report but milestones that will be used to grade the student's performance:

- Proposal
- Block Diagram
- Figures and Tables
- Executive Summary



# Contemporary ECE Projects

## Two Models

### #1. Standalone

Anyone who is qualified to teach can propose and teach a standalone project course as long as minimum enrollments are achieved.

Pilot – in Spring 2023, Marcus Ionan, a PhD student, will teach a two credit project course that allows students to work with a remotely accessed software defined radio to achieve a decoding objective. Students receive 2 credits for the project.

### #2. Supplemental

A project can be added on to an existing course for students who want a greater, in-depth, or hands-on experience.

Pilot – in Spring 2023, EE484 will offer a project course supplement for students who want to have a design project experience alongside the more traditional lecture course teaching model on sensors and sensing systems. Students receive 4 credits for EE484 and 2 credits for the project.





# HAPPY THANKSGIVING DAY!

EE3XX:

Contemporary ECE Projects

Thoughts?

Comments?

Wisdom?

Insight?

Quotable Quotes?

