EE3220
SYSTEM-ON-CHIP (SOC) DESIGN

TEAM-BASED LEARNING (TBL)
POLAR CODE + CRC IMPLEMENTATION

23 FEBRUARY 2026

OVERVIEW

- Background on Team Based Learning (TBL)
- Polar Code + CRC Implementation Challenge
- Team Readiness Assurance Test

BACKGROUND ON TEAM-BASED LEARNING (TBL)

- What is TBL Challenge?
  - Team-Based Problem Solving
  - Competitive but Collaborative
  - Instructors and Teaching Assistants as Facilitators, not Answer-Givers
- Student Responsibilities:
  - Active Participation
  - Peer Support
  - Independent Learning and Accountability

POLAR CODE + CRC IMPLEMENTATION CHALLENGE

- Your Mission:
  - Implement Error Correction and Detection Codes for Mars Mission
  - Polar Code is used for both Error Correction and Detection
  - CRC is used for Error Detection
- Win Criteria
  - First Team to submit the correct Verilog or SystemVerilog Implementation will receive an award
  - Best Verilog or SystemVerilog Implementation will receive an award

TEAM READINESS ASSURANCE TEST

- Purpose
  - Team Readiness Assurance Test (tRAT) ensures everyone understand core technical concepts
- Location
  - Canvas
- Team Task
  - Collaboratively solving a Quiz
  - Every Team Member needs to Participate