ECE490 – Checkpoints & Deliverables

This document provides a semester-long overview of all major checkpoints and deliverables for ECE490. It emphasizes problem definition, design development, professional process, reproducibility, and development of an initial preliminary prototype. Full prototype system implementation and testing is the primary focus of the subsequent capstone semester (ECE491).

Checkpoint	**Expectations / How to Prepare** *Before Meeting*	**Meeting Agenda** *During Meeting*	**Outcome** *After Meeting*
Standing Expectations (All Checkpoints)	**Time Commitment:** Approximately 9-12 hours a week (consistent with a 3-credit-hour course) including inside and outside of class time. **GitHub Commitments (weekly):** Clear time-stamped record of your work. Every student, every week! **Faculty & Stakeholder Meetings:** Plan faculty mentor & stakeholder biweekly; x3 all-team meetings **Professional Norms:** Before meetings: Share agendas and calendar invites. After Meetings: Send follow-up email. **Iterative Process:** Revisit past work; respond to feedback & new evidence, make continuous improvements.		
Checkpoint #1 **Team Formation** *Project Exploration & Stakeholder Pitches* **OUTCOME DUE: Monday (02/02) by 5pm**	Review project descriptions and stakeholder information Reflect on personal interests, career goals, and project alignment Prepare questions for stakeholder pitches (Optional) Speak with current ECE491 students and classmates about projects	Stakeholders present project ideas and answer questions Students engage in discussion determine their project interests.	Submit a public ranking of your top three project choices *Note: Selecting only highly popular projects may reduce the likelihood of receiving a top choice.* Register your GitHub account via the provided form (click here) In-class on Wednesday (02/04), submit team contract / role

			formation. (click here)
Checkpoint #2: Early Accountability & Ownership *Identification of team/individual priorities* **OUTCOME DUE: Friday (02/13) by 5pm**	Schedule the first all-team meeting with your stakeholder and faculty mentor (see professional email example) Ensure access to: • Team GitHub repository • Required materials or equipment (e.g., team locker) Draft engineering responsibility plan (click here). Bring to meeting and be ready to discuss.	Discuss and refine how work is distributed among team members Discuss project risks, unknowns, and open questions Define technical artifacts and set deadlines.	Submit engineering responsibility matrix Approval to proceed from stakeholder and faculty mentor *Reminder: Continue to meet standing expectations, including weekly meaningful GitHub commits.*
Checkpoint #3: Design Development *Preliminary design: requirements, constraints & design diagrams* **OUTCOME DUE: Friday (02/20) by 5pm**	Draft (*see midterm deliverables I*): • Preliminary draft to all ECE490 sections up to and including "Design" section • Initial design visualizations / diagrams (handwritten is acceptable at this stage) Be prepared to explain and justify early design decisions. This is preliminary with additional details to be defined as part of an iterative process. Develop preliminary parts list, Bill-of-Materials (BOM).	1 minute per person: summary of progress since the previous checkpoint Review and feedback on drafted design deliverables, including design alternatives and trade-offs	Complete a "all-team meeting" with your faculty mentor and stakeholder. Submit updated draft early sections of the engineering design report *(see midterm deliverables I)* based on feedback received, up to and including the design section. Register the team for UAlbany Showcase Day. *Note, date is subject to change and set by the university.*

Checkpoint #4: Design Review *Evaluation of design trade-offs, integration of engineering standards* **OUTCOME DUE: Submit with midsemester deliverable I**	Refine the system design with emphasis on: • Clear, professional design visualizations • Evaluation of alternative design approaches • Justification of key design decisions and trade-offs • Application of relevant engineering standards Complete the second all-team meeting with stakeholder and faculty mentor Begin transitioning toward prototype implementation based on the current design	**1 minute per person:** progress update since the previous checkpoint Present and discuss: • System architecture and design diagrams • Rationale for key decisions • Alternatives, trade-offs, and standards integration	Submit an updated engineering design report draft, with emphasis on: • Refined design visualizations • Documented design trade-offs and standards integration Transition design documentation from handwritten sketches to more professional diagrams Order parts (subject to stakeholder approval). See GitHub for purchasing information
Midsemester Deliverables I **DUE: Tuesday (03/03) by 5pm**	**Engineering Design Report Guidelines (click here)** *Submit on GitHub under team_deliverables folder.* **Deep Dive Presentation: 25 minutes** *Define and motivate the problem, background work, present the current design, design decisions, and prototype plan for the semester. Make heavy use of visualizations (avoid lots of text on slides). Speak for about 15-17 minutes. The remaining time should be left for Q&A.* **Self Evaluation (click here)** *Short document of your most important individual contributions thus far. This will be shared with your team.*		
Midsemester Deliverables II	**Lightning Talk (click here)** *Exactly 5 minute presentation with auto-advancing slides. Intended as a general overview of your work.* **Peer Evaluation (click here)**		

DUE: Tuesday (03/10) by 5pm	*Preliminary evaluation of your peers. This will not be shared with your teammates. Submit on Brightspace, not GitHub.*		
Checkpoint #5: Design Iteration & Risk Review *Response to midsemester feedback, evidence-based modifications to design, shift towards implementation.* **OUTCOME DUE: Friday (04/03) by 5pm**	Review and reflect on midsemester performance feedback (team and individual) Identify: • Design changes or refinements prompted by feedback • Key technical risks, unknowns, or constraints Prepare proposed updates to your individual responsibility snapshot. Continue progress on system prototype implementation	Discussion of team-level feedback and lessons learned. Discuss updated individual responsibility snapshot and risk mitigation strategies	Updated individual responsibility snapshot Continued progress on the system prototype, informed by evidence and feedback. Submit showcase day poster and required information. Note: This date is subject to change and the deadline is determined by the university.
Checkpoint #6: Reproducibility Review *Extent to which design and preliminary prototype artifacts enable reproduction and continuation by another engineer.*	Ensure GitHub repository is up-to-date and well-organized. Update the README: • Instructions for accessing core materials / files. • Document dependencies, installation instructions, etc… • Parts list / BOM (as applicable) Prepare prototype demonstration Complete the third all-team meeting with stakeholder and faculty mentor	Demonstrate the current prototype TA will attempt setup or replication using GitHub documentation and assess reproducibility (component of file grade assessment) Identify and address reproducibility gaps	Updated GitHub repository supporting reproducibility Documentation sufficient for another engineer to continue the project Continue to work on implementation of the system prototype Submit poster to UAlbany Showcase Day organizers.

OUTCOME DUE: Friday (04/10) by 5pm			
Checkpoint #7: Presentation + Prototype Demo Readiness Review *Feedback on final presentation + system demonstration* **OUTCOME DUE: Submit with final semester deliverables I**	Draft final technical deep dive presentation slides Prepare the current prototype for end-of-semester demonstration Complete the final "all-team" meeting with your stakeholder and faculty mentor.	Walk through presentation slides to review: • Narrative flow • Technical clarity • Organization and timing Demonstrate the current system prototype Receive feedback and identify final improvements	Final deep dive presentation ready for delivery Prototype prepared for final demonstration Updated GitHub documentation reflecting any final changes
Final Semester Deliverables I Deep dive presentations, self evals. **DUE: Tuesday (04/22) by 5pm**	**Deep Dive Presentation: 25 minutes** *Define and motivate the problem, background work, present the current design, design decisions, current prototype and plan for next semester. Make heavy use of visualizations (avoid lots of text on slides). Speak for about 15-17 minutes. The remining time should be left for Q&A.* **Self Evaluation (click here)**		
Final Semester Deliverables II Lightning talk & system demo. **OUTCOME DUE: Wednesday (04/29) by 5pm**	**Lightning Talk (click here):** *Exactly 5-minute presentation with auto-advancing slides. Intended as a general overview of your work. Presented at Showcase Day.* **System Demo & Poster:** *Bring poster and current system prototype to Showcase Day.*		
Final Semester Deliverables III Final report, peer evaluation	**Engineering Design Report - Final Report (click here)** *All of the ECE490 sections.* **Peer Evaluation (click here)**		

OUTCOME DUE: Monday (05/04) by 5pm	*Preliminary evaluation of your peers. This will not be shared with your teammates. Submit on Brightspace, not GitHub.*