

**DESIGN CONCEPT PROPOSAL (DCP)**  
**Due: Close-of-business, October 12, 2022**

The Design Concept Proposal (DCP) is the written mechanism by which the student design team communicates their initial concept for a proposed capstone project and how it addresses the Request for Proposal (RFP) for the project. Over the course of this project, the student design team will need to design, analyze, fabricate, verify, test, and validate their system. Design teams should especially consider time constraints when creating their proposal. For example, be realistic in terms of what fabrication is required compared to what is available on campus and what skills the team already has. Special attention should also be given to the budget. The content of the DCP shall be as follows:

- Front Matter
  - Title page
  - Abstract
  - Table of contents
  - Nomenclature (list of acronyms and abbreviations)
  - List of figures
  - List of tables
- Mission Statement
  - Critical requirements overview
  - Purpose (Why the design team is submitting this design concept proposal)
  - Benefits (Every benefit must be supported with realistic theory, facts, and information)
- System Concept
  - Objectives (What the system will accomplish)
  - Concept of operations (A summary of the normal operation of your system)
  - How each requirement has been addressed
- Potential Risks
  - Describe possible scenarios that could result in a system failure and how the design team will address those scenarios.
- Similar Systems
  - Conduct trade studies on alternate system designs
  - Include concise descriptions of relevant past, present, or future systems. Identify similarities between each of those systems and the design team's proposed system as well as notable differences.
- Project Impact
  - Discuss the expected impact your proposal will have in a global, economic, environmental, and/or societal context
- Budget
  - Student design teams can expect the College of Engineering to fund their project based on the following formula:
    - Available Funds = \$400 + (\$150/person)(# students)
    - Up to \$25/person of the project budget may be used for team polo shirts
  - Identify the expected cost of the proposed project, including a reserve. This should be justified by allocating the overall cost to system and subsystems elements.

- Schedule
  - Provide a Gantt Chart depicting the major phases of your project and how you will support the critical milestones of your internal and/or external customer(s)
  - Plan for the complete lifecycle of your project
- Conclusions and Next Steps
- Back Matter
  - Acknowledgements (Acknowledge all the students, staff and faculty, or anyone else supporting you this semester)
  - References (Document any information that did not originate from the design team)
  - Design team organizational chart (Inclusion of team member photos is preferred)