

# Project Proposal

EECE 410: Senior Design I

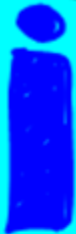
Electrical and Computer Engineering  
Howard University

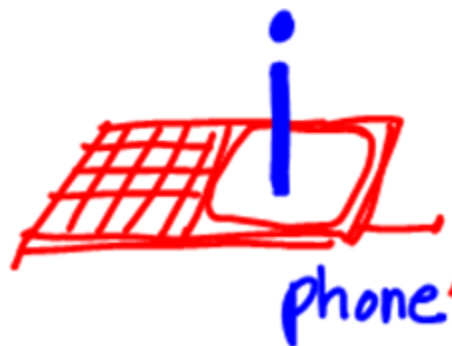
Dr. Charles Kim

[www.mwfr.com](http://www.mwfr.com)

Charles Kim – Howard University

# Next step after Design Requirement

EVOLUTION OF 



# Project Proposal

- **Proposal**
  - A bid for a job, services, cash award, or research money.
  - Or for marriage!
- **Design Project Proposal**
  - Remember that design project exists because there is problem or need.
  - “a clear description of the initial ideas developed for solving the problem”
    - Background
    - Problems and Needs Refined Problem Definition and Problem Formulation
    - Current Status of Art
    - Design Requirements and Standards, Regulations, Restrictions, and Constraints
    - Initial Solution Ideas and Approaches – Diagrams and Schematics and Interfaces
    - Project Management with timelines and milestone
    - Resources and Cost
    - Qualification: knowledge content, course works, etc

# Proposal Format

- 0. Proposal Cover
  - Title
  - Team and Members
  - Space for Approval Signature

Cover

Introduction

Problem Definition

Current Status of Art  
Engineering Approaches

Tasks and Deliverables

Project Management

Conclusions

# Proposal Contents - Introduction

- **1. Introduction**
  - Objective of the project
  - Goals and scopes of the project
  - Background of the project
  - Main problems
  - Customer needs
  - What the Proposal intends to do

Cover

Introduction

Problem Definition

Current Status of Art

Engineering Approaches

Tasks and Deliverables

Project Management

Conclusions

# Proposal Content – Problem Definition

- **2. Problem Definition**
  - Refined Problem Definition
  - Design Requirements & Performance Measures.
  - Required compliance – Specific situation, regulation, standard, rules, codes, etc

Cover

Introduction

Problem Definition

Current Status of Art

Engineering Approaches

Tasks and Deliverables

Project Management

Conclusions

# Proposal Contents – Current Status of Art

- **3. Current Status of Art**
  - “What’s out there related with our project and problem”
  - Fundamental Theories and Principles related to the project
  - Similar Product in the market?
  - Weakness of the Current Status of Art
  - Improvement Points
  - **More time here saves the time**

Cover

Introduction

Problem Definition

Current Status of Art

Engineering Approaches

Tasks and Deliverables

Project Management

Conclusions

# Proposal Contents –Solution Generation

- 4. Engineering Approach for Solution Generation
  - **“How we are going to solve the problem”**
  - Initial Solution Idea
  - Provide general or system level structures with schematics
  - Possible alternative solution approaches
  - Systematic Process/Approach to reach at the desired solution
  - What knowledge and course works are to be used in the solution
  - What knowledge to be learned for the solution

Cover

Introduction

Problem Definition

Current Status of Art

Engineering Approaches

Tasks and Deliverables

Project Management

Conclusions



# Proposal Contents - Tasks

- 5. Tasks and Deliverables
  - “What steps we take to apply the engineering approach”
  - Tasks to be done to (i) achieve the engineering solutions and (ii) verify the solution meets the design requirements
  - Tasks assigned to the team members
  - Deliverables
    - Final solution product
    - Demonstration System of the final solution for ECE Day presentation/Demo

Cover  
Introduction  
Problem Definition  
Current Status of Art  
Engineering Approaches  
Tasks and Deliverables  
Project Management  
Conclusions

# Proposal Contents – Project Management

- **6. Project Management**

- “When we do what”
- Timelines and milestones
- Resources and Budget
- Safety Issues
- Engineering ethics issues

Cover

Introduction

Problem Definition

Current Status of Art

Engineering Approaches

Tasks and Deliverables

Project Management

Conclusions

# Proposal Contents - Conclusions

- **7. Conclusions**

- Rephrase problems, needs, and benefits
- Rephrase objectives
- Summary of the engineering solution approach
- Summary of timeline and milestones

- **8. References**

- Must be cited in the main body with [number]

# Example Proposals

- Project Template
- Example Proposals
- Web

Lecture 2: [Problem Formulation](#)

Lecture 3: [Design Requirements](#) (Design Requirements [Example](#) in XLS format)

Project Briefing

Lecture 4: [Project Proposal](#) ([Proposal Template](#) & Sample Proposals: [1](#), [2](#), and [3](#))

# Team Assignment 1 -- Proposal Writing

- Write a proposal following the format:
  - Introduction
  - Problem definition
  - Current Status of Art
  - Engineering approach for solution
  - Tasks and deliverables
  - Project management (timelines and milestones)
  - Conclusions
  - References
- Format (Check the Template)
  - Letter size
  - Times New Roman 12pt
  - Left justified, single space, 1" margin all sides
  - Page numbers at the bottom center

0	Cover
1	Introduction
2	Problem Definition
3	Current Status of Art
4	Engineering Approaches
5	Tasks and Deliverables
6	Project Management
7	Conclusions
8	Reference

# Proposal Writing Assignment

- Submission Due:
  - Paper submission:
    - W 16OCT2013 1:10pm
  - Electronic Submission:
    - Final Revision is possible
    - W 16OCT2013 11:59pm
    - File Naming: **TeamName\_Prop.docx**
- Suggestion
  - Current 7 days (from Today --)
    - Brainstorming while recording
    - Clear problem definition
    - Thorough current-state-of-art (Divided job to members)
    - Quantifiable, measurable design requirement
    - Bring up engineering solution approach –schematics, drawings, and descriptions
    - Tasks to be done by timeline
  - Next 7 days
    - Write what you have accumulated
    - Feedback loop to check the items again

# Technical Writing Tips

- Write like a newspaper staff writer
- Outline, a long outline, and sections
  - **Divide into members**
  - **Every topic must be covered**
  - Single topic must not be covered multiple times
- Tips
  - Know your audience/reader
  - Rule 17 of “Elements of Style” – Omit unnecessary words.
    - Avoid wordy phrases and sentences
    - Avoid informal and conversational words and phrases
  - Why, What, When, & How
  - Correct Grammar and Spelling
  - **Third Person, Active Voice, Same Tense**
  - Direct and to the point
  - Paragraph Construction: Topic Sentence – Support - Description
- **Finish Draft**
  - Integrate the sections completed by members
- Spend More Time on **Revising**
  - Consistency
  - Terminology
  - Flow
  - Check Format

