ITEC452
Research Paper or Hands-on Project
(Team of Two Members)

- **Topics: Select a topic related to:**
  1. Wireless Networks
  2. Clouding Computing or Distributed Computing, such as:
     a. Hadoop
     b. OpenStack
  3. Internet of Things

- Submit **an idea note** (a paragraph and at least one key paper) per group which states the problem your group will solve.

  - **Due: 3pm on 9/30 (Friday)**
  - Submission: Dropbox
  - Note: If necessary, the instructor will request a revision of your proposed idea. Then, you should submit the revised idea note within 48 hours.

- Submit **a proposal** (a write-up; between 2~3 pages) of your research idea.

  - **Due: 3pm on 10/14 (Friday)**
  - Submission: Dropbox
  - Note: If necessary, the instructor will request a revision of your proposal. Then, you should submit the revised proposal within 72 hours.
  - What to Submit:
    - **Proposal Format**: IEEE transaction paper format.

  Grading Criteria: The proposal must include all of the following sections:

  Abstract

  I. Introduction
     - Justification on your topic
       You need to justify or explain why your topic is interesting to be investigated.
     - Background knowledge.
       You need to explain background knowledge of your research topic to help a reader understand your proposal. This section must explain the following background knowledge, under the assumption that the reader is a junior or senior who took ITEC350 and/or ITEC451:
       - the domain of your problem (ex) wireless sensor network, grid computing networks, mobile agents, and so on.
       - the theory of your approach (see section IV below)

II. Literature Survey

You need to summarize existing research results by other researchers on the similar topics. This section must (1) briefly explain their idea; and (2) address disadvantages or weakness of their idea which your solution will tackle.

III. Problem Statement (or Project Statement)

You must state what the problem that you will solve is.
(Or you must explain what your hands-on project is.)

IV. Approach to Solve the Problem (or Technical Details of Your Project)

You must include a theory part as well as a simulation part.

- Theory: (ex) a graph theory
- Simulation: (ex) Are you writing the simulation code from the scratch? If so, in what language? If not, do you plan to use a network simulator such as ns2 (C++), Jist/Swan (for wireless networks, Java), or something else?

V. Timeline to Conduct the Research or the Hands-on Project

References

☑ Submit **your final paper** (6~10 pages) and prepare a **presentation** (30 minutes) on your research result.

- **Due - 1:50pm on 11/3 (Friday)**
- Submission: Dropbox
- What to submit:
  - **Proposal Format**: IEEE transaction paper format.
  - (For Hands-on Project) **Lab Guide** in the format of the Project 1 Lab guide
  - **Presentation file Format**: *.pptx file

Grading Criteria: Your final paper and the presentation must include all of the following sections:

Abstract

I. Introduction

- Justification on your topic

  You need to justify or explain why your topic is interesting to be investigated.
- Background knowledge.

  You need to explain background knowledge of your research topic to help a reader understand your proposal. This section must explain the following background knowledge, under the assumption that the reader is a junior or senior who took ITEC350 and/or ITEC451:
  - the domain of your problem (ex) wireless sensor network, grid computing networks, mobile agents, and so on.

- the theory of your approach (see section IV below)

II. Literature Survey

You need to summarize existing research results by other researchers on the similar topics. This section must (1) briefly explain their idea; and (2) address disadvantages or weakness of their idea which your solution will tackle.

III. Problem Statement (or Project Statement)

You must state what the problem that you will solve is.
(Or you must explain what your hands-on project is.)

IV. Approach to Solve the Problem (or Technical Details of Your Project)

For research project, you must include a theory part as well as a simulation part.

- Theory: (ex) a graph theory
- Simulation: (ex) Are you writing the simulation code from the scratch? If so, in what language? If not, do you plan to use a network simulator such as ns2 (C++), Jist/Swan (for wireless networks, Java), or something else?

For a hands-on project, you must explain a list of hands-on skills which are needed to complete the hands-on project in this section and submit a separate lab guide file in the format of **the lab guide** of the project 1.

V. Theoretical Results (for a hands-on project, Lab Guide)

As stated in the previous section, for a hands-on project, a lab guide needs to be submitted as a separate file.

VI. Simulation Results

(for a hands-on project, Test Results to show the completion of the hands-on project)

VII. Concluding Remarks

You need to address a summary of your results might include a future research issue.

References