# MSIM 601 – Introduction to Modeling and Simulation

# Term Project Requirements

## OVERVIEW

In this term project, students are asked to utilize one (or more) of the M&S concepts and tools discussed during the semester to develop a model and/or simulation. The area of application is wide open according to expertise, preference, or interest.
The general rule is: select a real-world system, application, problem, or phenomena and develop a model or simulation to replicate its behavior and produce results.

The project can be an individual or a group effort (2 members max). Projects by groups will have higher expectations.

The term project will have the following deliverables (all are to be submitted on Blackboard by their due date):

1. Concept and idea document (due sometime after midterm)
2. PowerPoint presentation (due toward the end of the semester)
3. Developed model (due toward the end of the semester)

## CONCEPT AND IDEA

Provide a 2-4-page detailed description of the term project idea selected. Make sure to include articles and relevant sources where appropriate. Include the following sections:

1. Administrative Information
    - Provide the names of team members and the role of each member.
2. System being modeled
    - Description; location; expertise
3. Goals and Objectives
    - Is the team trying to solve a problem, reproduce results from a research report, or represent a system of interest to the team?
    - What is the expected outcome?
4. Formulation of the model
    - What data will be collected?
    - What modeling approach will be used to model the system?
    - What level of detail?
    - What are example components?
5. Modeling software
    - Software language / computing platform / tool
6. References
    - Cite all relevant sources

**FINAL PRESENTATION**

Construct a 10-minute presentation describing the team's effort, discuss approaches used to develop model/simulation (run the model or show a video of its run), and report the produced results. Include the following sections:

1. Introduction
    - Team introduction
    - Project overview
    - Goas and Objectives
2. Background and Related Work
    - Background about the project chosen
    - Related studies conducted that are similar to chosen topic.
3. Methods
    - Data Collection
    - Conceptual Model
    - Model Formulation
4. Results
    - Model results
    - Simulation results
    - Analysis (if you have analysis results)
5. Discussion
    - Findings (what does it all mean)
    - Implications (so what)
6. Conclusion
    - Conclude the work done and relate back objectives. Lessons learned?
7. Contributions (if group project)
    - Describe the contribution of each member of the team
8. References
    - Your list of references here.

**DEVELOPED MODEL**

Submit to Blackboard the developed model and all components needed to test its functionality. Zip multiple files if any.