

IK2560 Project Rules and guidelines HT24

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Supervision schedule and deadline

- Deadlines must be strictly kept
- Groups will do peer review to each other
- First meeting (Dec 5 at 13:15 at Ka-208)
 - I will provide you with the information and guidelines on the project
- Project proposal (week 50, timeslot will be decided at the first meeting)
 - Send project proposal by 24 hours before the seminar via email and upload it on Canvas assignment
 - The proposal should contain background, literature, problem definition, and choice and description of the research method. In addition, include experimental plan (what are experimental parameters, what are performance metrics, experiments on which cases?)
 - Prepare a short presentation
 - Presentation and oral peer review at the seminar
- Project progress (week 51, timeslot will be decided at the first meeting)
 - You are expected to reach 2/3 of the final outcome at this moment
 - KTH Thesis template would be a good inspiration to structure your report
 - Send draft of the final report by 24 hours before the seminar via email and upload it on Canvas assignment
 - Presentation and oral peer review at the seminar
- Final presentation (Jan 8-10, TBD)
 - Detailed presentation time will be decided later in December
- Final report deadline Jan 17
- Self-reflection deadline Jan 22

Project management

- Project management is an important part of the project
 - Setting the direction of work
 - Organizing work division and internal discussions
 - Checking the progress
 - Ensuring everyone contributes to the project
 - Coordinating communications with the supervisor and examiner
 - Reporting issues/problems in a timely manner
- Select a project leader
 - either a leader throughout the course or rotating leadership
 - It is up to your decision
 - In any case, it must be clear who is leading the project at any time
- Ability to plan and implement the project with the least supervisor intervention is an important assessment criteria.

Communication & reporting

- Communication with supervisor
 - Group communication (all to all) is the basic mode
 - Individual communication with supervisor only when necessary
- Source code
 - Make the source code available for supervisor's review
- Final presentation and report
 - Check the Canvas assignment so that you are fully aware of the required outcome and deadline

Grading

- Principle: group performance \pm individual contribution
 - concept, literature review, coding, report, presentation, management
- Everyone must contribute to a part of coding and code review
- Everyone must understand the whole code
- Everyone must contribute to a part of the report
- Everyone must understand the whole report
- Everyone must contribute to a part of presentation
- Everyone must understand the whole presentation

Coding and referencing

- MATLAB or Python is to be used for this project (your choice)
 - Your simulator must run smoothly in a typical laptop (i.e., the simulator should not be resource-demanding)
- You must fully understand and be able to explain **every single line** of the code
- It is good to use built-in **math** functions
 - For example: logarithm, probability distributions
- However, do not use Simulink or Toolbox unless your supervisor approves it.
 - If you use it, you must fully understand what's going on inside
 - This also applies to a code block that you find on the internet -> approval first
- Code from external sources
 - It is okay that you search for code on the Internet.
 - However, you must fully understand the code and rewrite it as your own code.
 - Again, you must be able to explain every single line of your code
- Cite references and sources properly
 - Anything you use without proper citation may be considered a cheating

Tips

- Keep the deadlines!
 - This course is strict about deadlines.
 - Plan ahead, be agile, and stick to the deadline
- Be active
 - Active participation in the supervision discussions is an evaluation criteria
- You can get A even with a bad result
 - Don't obsess about the "positive result" or improvement over SOTA.
 - Proper implementation of the project is the most important evaluation criteria.
- Don't try to make a big simulator in the beginning
 - Start with simple and small modules
 - However, think about the extendibility early enough (e.g., avoid hard coding)
 - Verify each module thoroughly
 - Then, extend the modules
- Think about the numerical experiments early enough
 - What kind of experiments required? Which kind of results to be obtained?
 - It will affect your simulator design

What is a system-level simulation?

- Simulation is a representation of the real world with a combination of **simplified models** and **repeated experiments**
 - Different levels of **simplification** would apply to each part of the simulator
 - It is important to determine the appropriate level of simplification in this short-term project
- Models that may consist of system-level simulators for wireless systems
 - Base station deployment model
 - User distribution model
 - Radio propagation model
 - Physical layer model
 - MAC layer model
 - Radio resource management (RRM) model
 - and more...

System-level simulation for wireless systems

