



## **MSC THESIS DESCRIPTION SHEET**

**Name:** Kjetil Hope Sørbo  
**Department:** Engineering Cybernetics  
**Thesis title:** Autonomous landing of Fixed-Wing UAV in a stationary net  
- Path and Navigation system

**Thesis Description:** The purpose of this thesis is to implement and test a path and navigation system for an autonomous landing system for landing in a stationary net with a fixed-wing UAV. This involves design and implementation of a landing plan generator, implementation of a high accurate navigation system, assign and test controllers for the autonomous landing system and field test of the autonomous landing system.

The following items should be considered:

1. Define the scope of the thesis and clarify what your contributions are.
2. Testing of control system performance for X8-landing in a stationary net
3. Functionality for planning of landing waypoints, which allow the landing target to have an arbitrary position and direction.
4. Implementation and testing of a landing plan generator.
5. Implementation and testing of a navigation system with RTK-GNSS
6. Robust RTK-GNSS navigation by fusing data from secondary GNSS system in case of loss of RTK-GNSS lock
7. Field experiment of the autonomous landing.
8. Conclude your results

**Start date:** 2016-01-11  
**Due date:** 2016-06-20

**Thesis performed at:** Department of Engineering Cybernetics, NTNU  
**Supervisor:** Professor Tor Arne Johansen, Dept. of Eng. Cybernetics, NTNU  
**Co-Supervisor:** Professor Thor Inge Fossen, Dept. of Eng. Cybernetics, NTNU