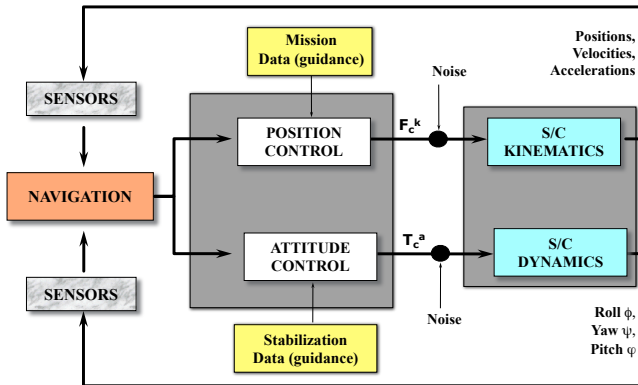# ELEC 3224 — Introduction

Professor Eric Rogers

School of Electronics and Computer Science
University of Southampton
etar@ecs.soton.ac.uk
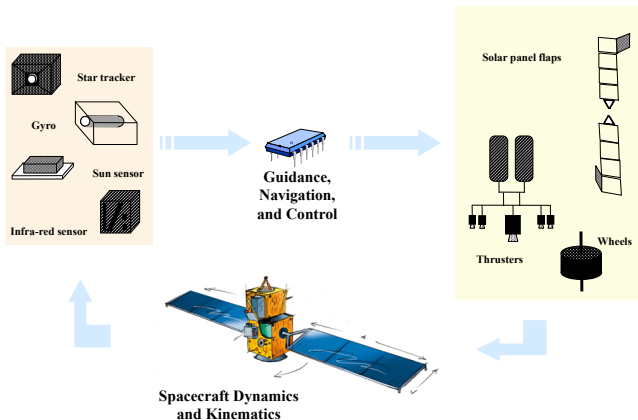Office: Building 1, Room 2037

Introduction

- **Guidance:** establishment of the desired path to follow (current, i.e., in real time and future.
- **Navigation:** establishment of the current and future state (state will be defined later but for now think of it as output).
- **Control:** actions to match **the current state (navigation)** with the **foreseen path (guidance).**
- Commonly termed **GNC.**
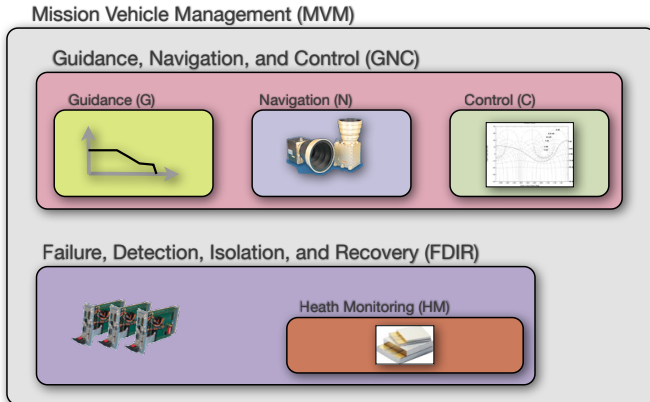- By way of an example, an approach to GNC for spacecraft is considered below.
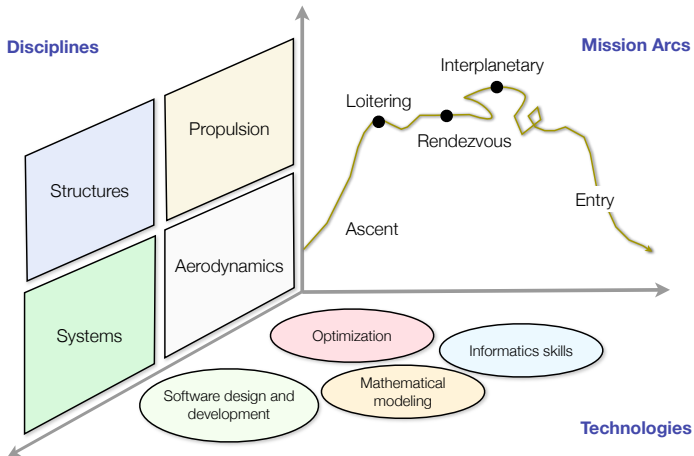
Simplified GNC Block Diagram
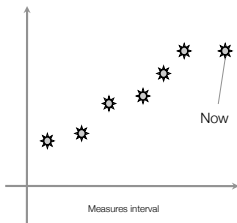
GNC Elements

Mission Vehicle Management (MVM)

Guidance Engineer Work Area

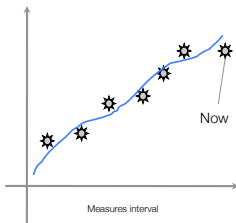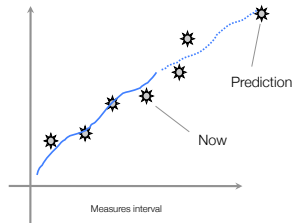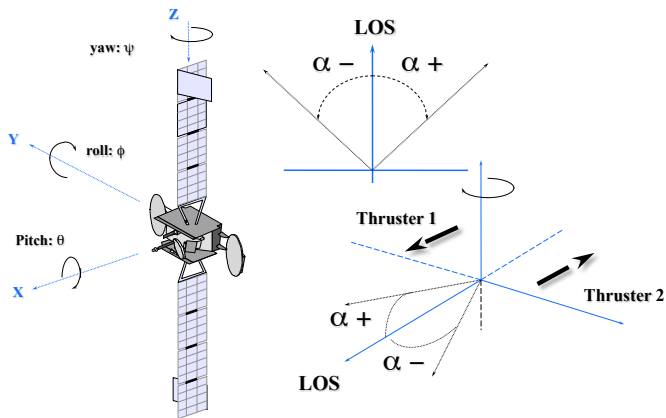# Navigation Definition

Measurements taken | Orbit set computation | Orbit set prediction

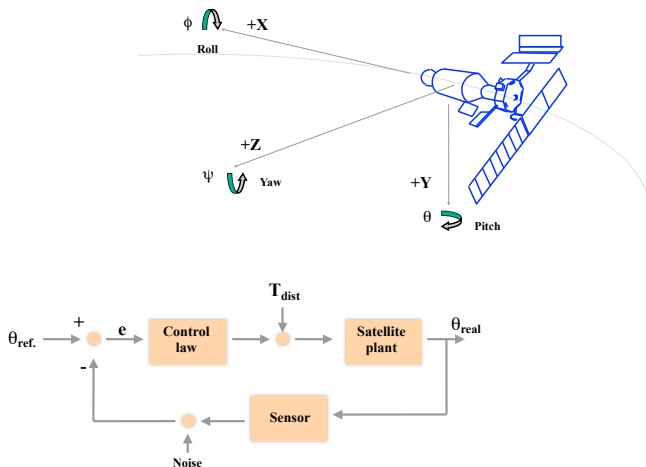# Navigation Basics

Attitude Control

Spacecraft Pointing Control