

Mechatronics PD215 - 2020

Course Project Requirements

The course project is to identify a mechatronic challenge inspired by a real life situation and then design and build a **functional prototype** solution for the same.

The project should include all three elements of a mechatronic system:

- 1) One or more sensing element (digital/analog)
- 2) Control logic implementation (software/firmware/hardware based)
- 3) Actuation mechanism

Project can be carried out in **teams of 3** but project evaluation will be based on individual interview. An individual report **describing and analysing** each of the block is also to be submitted at the time of interview. Prototypes can be scale model of real world problem but analysis should be based on real life situation.

Example projects ideas:

- Joystick controlled laproscopic camera mount* - Dr. Manish Arora
- Force controlled ultrasound probe holder* - Sameer
- Filament feeder for meltpool level controller* - Hemang K Jayant
- Camera orientation stabilization
- Sorting of apples based on size and color

Project expenses are to be borne by students and projects can be dismantled at the end of the course to recover modules.

Project title/concept to be shared by Feb 25th, 2020 – 11AM. Project demos and interviews will be scheduled in 3rd/4th week of April 2020. Project will carry 20% weightage of overall course marks distributed between demo, interview and written report. Creative solutions for well known situations will attract extra credit.