Course Title:	Formal Methods in SE	**Semester:**	Spring-2018
Course Code:	SE-364	**Max Marks:**	30
Instructor:	Engr. Afzal Ahmed		

INSTRUCTIONS:

i. There shall be no submission after deadline.

ii. Report shall follow the IEEE standards.

Title	**Centralized Control for Multi Agent Autonomous Systems**
Abstract	The aim of the project is to design and implement centralized intelligent control for multi-agent distributed autonomous systems which is responsible for the decision support and collaborative interaction of the individual agents. The aforementioned scheme is implemented for the development of a team of autonomous robots which could effectively play a game of soccer in real-time dynamic environments. The basic software architecture follows a synchronous modular approach which basic modules responsible for data acquisition, strategy planning, path planning, control generation, and transmission of command signals. The system first acquires the visual data for the environment and detects the respective physical objects. The acquired positional data is then transferred to a strategy planner, which uses statistical models and algorithms to predict the most optimal position for each agent. The data containing final positions is passed to the path planner whose basic task is to plan the path from initial to final positions. Next, the control generates the necessary control signals to follow the predicted path. Finally the transmitter transmits these control signals to the individual agents. The language domain for the system is C# which implements a highly parallel system through Task Parallel Library.

Good Luck