Syllabus for SY202 Cyber Systems Engineering – Spring AY20

(Subject to change)

Month	Monday	Tuesday	Wednesday	Thursday
January 2020	**6** No Class	**7** First Day of Class (Monday Schedule) Intro to Cyber Eng.	**8** Mechatronics & Functional Block Diagrams	**9** SCADA Systems/ Modeling Mech. Syst.
	13 Transfer Functions	**14**	**15** Transfer Functions	**16** Lab #1: MATLAB and Simulink
	20 No Class MLK Day	**21**	**22** Transfer Functions: Block Reduction	**23** Lab #2: CPS Simulation
	27 System Response	**28**	**29** System Response	**30** Lab #3: System Response
February 2020	**3** PID Control	**4**	**5** PID Control	**6** Lab #4: Simulation of PID Control
	10 Exam I Review	**11**	**12** Exam I	**13** Embedded Systems ICE 01: mbed Tutorial
	17 No Class Washington's Birthday	**18**	**19** Serial Comm I	**20** Lab #5: Intro to mbed (Morse Code)
	24 Serial Comm II	**25**	**26** Actuators	**27** Lab #6: Serial Comm (Morse Code II)
March 2020	**2** Actuators	**3**	**4** Real-Time Control	**5** ICE 02: Actuators
	9 Spring Break	**10** Spring Break	**11** Spring Break	**12** Spring Break
	16 Sensors	**17**	**18** Lab #7: Sensor Calibration	**19** Lab #7: Sensor Calibration
	23 Project I: Elevator (Set-up)	**24**	**25** YP-703 Visit	**26** Project I: Elevator (Logic Control)
April 2020	**30** Exam II Review	**31**	**1** **Exam II**	**2** Project I: Elevator (Logic/P Control)
	6 Project I: Elevator (P and PI)	**7**	**8** NCS and Cyber Attack Examples	**9** Project I: Elevator (Wrap – Up)
	13 Cyber Attack Detection & Performance Recovery	**14**	**15** Project II: NCS (Simulation)	**16** Project II: NCS (CAN Bus: Read/Wite)
	20 Project II: NCS (PI Control)	**21**	**22** Project II: NCS (Stealth Attack)	**23** Project II: NCS (Replay Attack)
	27 Project II: NCS (Demo) Final Exam Review	**28**	**29** Review & Study Day	**30** Start of Final Exams