**UNLV ME 729 – Advanced Robotics – Fall 2016 (last updated 08/27/16)**

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| Week | Topic |
| Week 1  08/29/16 | |  |  | | --- | --- | | Lecture | Course Intro – Issue Purchase List | |  |  | |
| Week 2  09/05/16 | **UNLV Holiday – Labor Day** |
| Week 3  09/12/16 | |  |  | | --- | --- | | Lecture | **Robot Sensing**: ADC: binary, voltage dividers | | Lab | LEGO touch sensor; ohmmeter; potentiometer, voltmeter | |
| Week 4  09/19/16 | |  |  | | --- | --- | | Lecture | **Robot Actuation**: ADC: operational amplifiers | | Lab | LEGO temperature sensing; DAC power supply; aliasing | |
| Week 5  09/26/16 | |  |  | | --- | --- | | Lecture | **Robot Communications**: I2C | | Lab | LEGO PCF8574 LEDs, DIPs | |  |  | |
| Week 6  10/03/16 | |  |  | | --- | --- | |  | Project #1 (Issued) | |  |  | |
| Week 7  10/10/16 | |  |  | | --- | --- | |  | Project #1 In-class time (P.Oh on-travel for IROS) | |
| Week 8  10/17/16 | Project #1 Due (Presentation and Hard-copy) – and Mid-term |
| Week 9  10/24/16 | |  |  | | --- | --- | | Lecture | **Robot Control**: Lagrange and State Space | | Lab | LEGO Ball-and-Beam (BNB) – Construction | |
| Week 10  10/31/16 | |  |  | | --- | --- | | Lecture | Robot Control: PID and LQR | | Lab | LEGO Ball-and-Beam (BNB) – Simulation and Real-World | |
| Week 11  11/07/16 | |  |  | | --- | --- | |  | Project #2 (Issued) | |  |  | |
| Week 12  11/14/16 | |  |  | | --- | --- | |  | Project #2 In-class time (P.Oh on-travel for Humanoids) | |  |  | |
| Week 13  11/21/16 | **Project #2 Due (Presentation and Hard-copy) – Thanksgiving 11/24/16**   |  |  | | --- | --- | | Lecture | **Robot Computer Vision** | | Lab | AR Toolkit | |
| Week 14  11/28/16 | |  |  | | --- | --- | | Lecture | **Robot Path Planning:** Potential Fields | |  | Project #3 (Issued) | |
| Week 15  12/05/16 | **Study Week Begins**   |  |  | | --- | --- | |  | Project #3 In-class time | |  |  | |
| Week 16  12/12/16 | **Project #3 Due (Presentation and Hard-copy) – Finals Week** |