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|  |  | Winter 2016 MW 6:00 – 7:50 PM  Room 17-1631 |
| ARO 406  Advance Dynamics and Vibration of Aerospace Systems [Class No. 14346] |  | Instructor: Try Lam E-Mail: trylam@cpp.edu Phone: x2615 Office: 17-2120 Office Hours: By Appointment |
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| Overview Vector dynamics of aerospace systems; moving coordinates and vehicle motion; Lagrangian dynamics; equations of motion and free forced vibrations of single and multi-degree of freedom and continuous systems. Applications of Fourier analysis. Random analysis. Schedule  |  |  |  | | --- | --- | --- | | **Week** | **Monday** | **Wednesday** | | 1/4 | Introductions | Review of Forces and Moments | | 1/11 | Conservation Laws | Energy Method  Lagrange Equation | | 1/18 | Holiday (No Class) | Homework Walkthrough  Quiz #1 | | 1/25 | Fundamental of Vibrations | Fundamental of Vibrations | | 2/1 | Free Vibration | Forced Vibration | | 2/8 | Damped Free Vibration | Midterm Exam | | 2/15 | Damped Free Vibration | Damped Forced Vibration | | 2/22 | Damped Forced Vibration | Homework Walkthrough  Quiz #2 | | 2/29 | Multi-degree Vibration | Multi-degree Vibration | | 3/7 | Homework Walkthrough  Quiz #3 | Special Topics  Class Review | | 3/14 | Final Exam (6-8 PM) |  |  Prerequisites ENG 103, ENG 104, ENG 107, ENG 109, ENG 110, IGE 120, IGE 121, or IGE 122; and C or better in ME 215 and MAT 318 Grades 20% Homework, 30 % Quizzes (10% each), 10% Project, 20% Midterm Exam, 20% Final Exam |  | Textbooks  * Thorby, Structural Dynamics and Vibration in Practice – An Engineering Handbook * Curtis, Orbital Mechanics for Engineering Students  Dates 1/18/2016  Holiday – Campus Closed  1/20/2016  Quiz #1  2/10/2016  Midterm Exam  2/24/2016  Quiz #2  3/7/2016  Quiz #3  3/14/2016  Final Exam 6-8 PM |