**Course Syllabus**

School of Mechanical and Aerospace Eng, Seoul National University (Fall 2008)

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| **Course Number** | 446.728 | | **Section** |  | **Course Title** | | | Advance Flight Dynamics and Control: Multivariable Control Systems | **Unit** | | 3 |
| **Instructor** | Name : Kim, Hyoun Jin | | | | | | website : http://icsl.snu.ac.kr | | | | |
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| Office Hour / Place : M 16:00-18:00 / Bldg 301-1035 | | | | | | | | | | |
| **1.Objectives** | This course covers tools and methods for the analysis and synthesis of linear multivariable feedback systems. The emphasis is on contemporary control system design, connection between frequency domain and state space methods, systematic consideration of model uncertainty and closed loop performance, and convex analysis and design methods.   * Analysis: Given a controller, determine if desired properties are satisfied in the presence of noise, disturbance, and model uncertainties. * Synthesis: Design a controller so that the desired properties are satisfied. * Other considerations: mechanical design and sensor/actuator selection/placement to make a control problem easier. | | | | | | | | | | |
| **2. Text & References** | Lecture notes will be available on the course web site. Some contents are from various course materials offered at MIT, Stanford, Berkeley, Delft, KAIST, and some examples from Matlab toolboxes will be used. There is no required textbook, although the following reference will be helpful if you want to understand technical details:  (Ref) Essentials of Robust Control by Kemin Zhou and John C. Doyle, Prentice | | | | | | | | | | |
| **3. Grading** | **HW** | **In-Class Exam** | | | | **Project and In-class Activities** | | | | **Total** | |
| 30% | 30% | | | | 40% | | | | 100% | |
| **4. Information for Students** | classical feedback control for single-input single output (SISO) systems, linear systems course | | | | | | | | | | |
| **5. Honor Code** | All students are presumed upon enrollment to have an understanding of the Honor System. Academic dishonesty by a student will not be tolerated and will be treated in accordance with the SNU procedures. A score of “0” can be assigned for the corresponding test/assignment and/or a course grade of ‘F’ can be assigned. | | | | | | | | | | |