

강 의 계 획 서

(2012년 2학기)

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| 교과목번호 (Course Number) | 446.728 | 강좌번호 (Lecture Number) | - | 교과목명 (Course Title) | 고급항공우주비행동역학 및제어 (Guidance and Control Algorithms for Unmanned Vehicles) | 학점 | 3 |
| 담당교수 (Instructor) | Name : 김 현 진 (Hyoun Jin Kim) | | | Homepage : http://icsl.snu.ac.kr | | | |
| | E-mail : hjinkim@snu.ac.kr | | | Tel : 02-880-9252 | | | |
| | 면담시간 / 장소 (Office Hour): M/W 10:45-12:00 / Bldg 301-1305 | | | | | | |
| 1. 수업목표 (Objective s) | - Learn techniques used for guidance and control of various unmanned vehicle platforms, including : path planning, localization, control, learning and optimization, multiagent systems | | | | | | |
| 2. 교재 및 참고문헌 (Text and References) | There is no required text. (REF) Planning Algorithms, Steven M. LaValle, Cambridge University Press, 2006 http://msl.cs.uiuc.edu/planning/ (REF) Robot Motion Planning, J.-C. Latombe, Kluwer, 1991. (REF) Principles of Robot Motion: Theory, Algorithms, and Implementation, H. Choset, K. M. Lynch, S. Hutchinson, G. Kantor, W. Burgard, L. E. Kavraki, and S. Thrun, MIT Press, 2005 (REF) Reinforcement Learning: An Introduction, R. S. Sutton and A. G. Barto, MIT Press, 1998 http://webdocs.cs.ualberta.ca/~sutton/book/ebook/the-book.html | | | | | | |
| 2. 평가방법 (Grading Policy) | 출석 (Attendance) | 과제 (Assignments) | 중간 (Midterm) | 기말 (Final) | 평소학습 | 기타 (Final Project) | 합계 (Total) |
| | % | 30% | 15% | 15% | % | 40% | 100% |
| (In-class quizzes for midterm and final) | | | | | | | |
| 3. 강의계획 (Schedule) | 주 (Week) | 강의내용 (Topics) | | | | | |
| | 1 | Path planning | | | | | |
| | 2 | Path planning | | | | | |
| | 3 | Localization | | | | | |
| | 4 | Localization and mapping | | | | | |
| | 5 | Dynamics and Control | | | | | |
| | 6 | Dynamics and Control | | | | | |
| | 7 | Dynamics and Control | | | | | |
| | 8 | Dynamics and Control, Midterm | | | | | |
| 9 | Function approximation – neural networks | | | | | | |

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| | 10 | Markov Decision Processes |
| | 11 | Dynamic Programming |
| | 12 | Reinforcement learning |
| | 13 | Multiagent systems |
| | 14 | Multiagent systems |
| | 15 | Course summary |
| | 16 | Final |
| 5. 수강생 참고사항 (Other info) | - Prerequisites : linear control systems, linear algebra | |
| 6. 부정행위자 에 대한 처리 (Policy against academic dishonesty) | All students are presumed upon enrollment to have an understanding of the Honor System. | |