

강의계획서

검색조건 :

교양/교직/군사학

핵심교양(영역1) 글쓰기(1-①)

[수업시간][건물 및 교과구분 코드][검색]

[영문강의계획서보기(Syllabus)]

과목명	확률과정론
과목번호	ELEC743001
학점	3.0
개설대학	전자공학부
개설학기	20161
교과구분	전공
담당교수	홍순목
강의시간	월8B9A9B 수5B6A6B
강의실명	IT대학1호관(공대10호관)713 IT대학1호관(공대10호관)713
연락처/E-mail	** 통합정보시스템 로그인- 수업/성적- 수업- "강의담당교수조회"에서 확인 가능함.
면담시간	
강의언어	한국어

☼ [강의계획서]

강의개요 및 목적
This course provides a broad introduction to probability theory and random processes and their applications to engineering problems.
교재 및 참고문헌
Text: Dimitri P. Bertsekas and John N. Tsitsiklis, Introduction to Probability (2nd edition), Athena Scientific, 2008.
References: Sheldon Ross, A First Course in Probability (6th edition), Prentice-Hall, 2002. Roy D. Yates and David J. Goodman, Probability and Stochastic Processes (3rd edition), Wiley, 2012.

Alberto Leon-Garcia, Probability, Statistics, and Random Processes For Electrical Engineering (3rd edition), Prentice-Hall, 2008.
강의진행 방법 및 활용매체
This course covers basic concepts of probability theory and random processes. Topics include: set theory, axioms of probability, counting, conditional probability, independence, discrete and continuous random variables, functions of random variables, probability distribution functions, joint and conditional distribution, expectations, variances, covariances, the law of large numbers, the central limit theorem, Bernoulli and Poisson random processes, and Bayesian and non-Bayesian parameter estimation.
과제, 평가방법, 선수과목
Grades will be based on the midterm exam (100 points), the final exam (120 points) and class participation (20 points).
수강에 특별히 참고할 사항
Students repeating this course will receive grades no higher than A-.
This is a demanding course. The only way to learn this course is to solve problems and this will take a substantial amount of time. Be prepared to commit the time.
장애 학생을 위한 학습지원 사항
Aids will be provided depending on specific disabilities.

 [강의 내용 및 일정]

no	강의 요목 및 수업목표	과제 및 연구문제	교재 및 참고자료	비고
1	Set theory, Sample Space, Probability Axioms, Some Consequences of the Axioms.		Chapter 1	
2	Conditional Probability, Bayes' Rule, Independence, Counting. Discrete Random Variables: PMF, CDF, Expectation, Variance and Standard Deviation, Joint PMF, Conditioning, Independence.		Chapters 1/2	
3	Discrete Random Variables: PMF, CDF, Expectation, Variance and Standard Deviation, Joint PMF, Conditioning, Independence.		Chapter 2	
4	General Random Variables: CDF, PDF, and Gaussian RV's, Joint PDF, Continuous Conditioning.		Chapter 3	
5	General Random Variables: CDF, PDF, and Gaussian RV's, Joint PDF, Continuous Conditioning. Further Topics on Random Variables: Derived Random Variables, Covariance and Correlation, Conditional Expectation and Variance, Transforms, Sums of Independent Random Variables.		Chapters 3/4	
6	Further Topics on Random Variables: Derived Random Variables, Covariance and Correlation, Conditional Expectation and Variance, Transforms, Sums of Independent Random Variables.		Chapter 4	

7	Limit Theorems: Markov and Chebyshev Inequalities, The Weak Law of Large Numbers, Convergence in Probability, The Central Limit Theorem.		Chapter 5	
8	MID-TERM EXAM			
9	Limit Theorems: Markov and Chebyshev Inequalities, The Weak Law of Large Numbers, Convergence in Probability, The Central Limit Theorem. Stochastic Processes: Bernoulli and Poisson Random Processes.		Chapters 5/6	
10	Stochastic Processes: Bernoulli and Poisson Random Processes.		Chapter 6	
11	Stochastic Processes: Bernoulli and Poisson Random Processes. Bayesian Statistical Inference: Point Estimation, Hypothesis Testing, MAP, Least Mean Square Estimation.		Chapters 6/8	
12	Bayesian Statistical Inference: Point Estimation, Hypothesis Testing, MAP, Least Mean Square Estimation.		Chapter 8	
13	Bayesian Statistical Inference: Point Estimation, Hypothesis testing, MAP, Least Mean Square Estimation. Non-Bayesian Statistical Inference: Linear Regression, Binary Hypothesis Testing, Significance Testing.		Chapters 8/9	
14	Non-Bayesian Statistical Inference: Linear Regression, Binary Hypothesis Testing, Significance Testing.		Chapter 9	
15	FINAL EXAM			

수험부정행위시, 경북대학교 수험부정행위에 관한 처벌규정에 의거 그 정상에 따라 수험자격박탈, 근신, 유기·무기정학, 또는 제적 처분될 수 있으니, 각별히 유의하여 주시기 바랍니다.