Course No.	459.573	Lecture No.	001	Course Title (Subtitle)	Monte Carlo Radiation Analysis (null)	Credit	3

Representative Instructor				
Name	KIM, EUN-HEE (post : Professor)	Homepage	radbio.snu.ac.kr	
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Interview Time/Place : Tue, Thr 1:00-2:30 pm/ Bldg.32 Rm.212				

Attachment	
(Korean)	
(English)	

Prerequisite Course	

*1.Purpose of Course	- To Introduce Monte Carlo methodology, which is a computational tool for quantitative analysis of the phenomena under statistical variation. - To investigate the technical approaches for improving statistical precision and accuracy of the calculational data. - To discuss on the indicators by which the estimated data would be approved or not. - To perform the projects of writing Monte Carlo programs with practical subjects.

*2.Materials and Reference	Materials-Monte Carlo Simulation in the Radiological Sciences-Richard L. Morin (ed.)-CRC Press, Inc.-1988

*3.Evaluation Method	Attendance	Task	Medium	Final	Random Evaluation	Attitude	Other	Total
	20	40	0	40	0	0	0	100
	Attendance Policy	Students who are absent for over 1/3 of the class will receive a grade of 'F' or 'U' for the course. (Exceptions can be made when the cause of absence is deemed unavoidable by the course instructor.)						
	Remark of Others							

*4.Lecture Plan

[1 Week]
Introduction/ Probability and Statistics: Basics
[2 Week]
Probability and Statistics: Key Issues
[3 Week]
Random Sampling/ Random Number Generation
[4 Week]
Random Number Testing
[5 Week]
Variance Reduction: Techniques
[6 Week]
Variance Reduction: Practices/ Correlated Sampling
[7 Week]
Estimators
[8 Week]
Photon Transport
[9 Week]
Electron transport 1
[10 Week]
Electron transport 2
[11 Week]
Electron-Gamma Inter-transport Simulation I
[12 Week]
Electron-Gamma Inter-transport Simulation II
[13 Week]
Reading Assignment
[14 Week]
Boundary Conditions in Media Transport
[15 Week]
Q&A, Final Test

5.References to Course Registration	- There will be a homework given at the end of the lecture on the relevant topic. Each homework is due on Tuesday of the 2nd week from the assignment date. Penalty will be given for late or no submission of the material (10% deduction in points per week).

6. Services for Students with Disabilities	Taking a Class	○ Visual Impairment: Make textbooks(digital textbook, braille textbook, enlarged textbook etc.), Allow note takers ○ Physical Disability: Make textbooks (digital textbook), Allow note takers and assistants ○ Hearing Impairment: Allow note takers and translators, Allow lecture recording ○ Health Impairment: Excuse absence due to health problems, Allow note takers ○ Learning Disability: Allow note takers ○ Intellectual Disability / Autism Spectrum Disorder: Allow note takers and mentors
	Assignments & Evaluation	○ Visual Impairment / Physical Disability / Hearing Impairment / Health Impairment / Learning Disability: Extend assignment deadlines, Offer alternate assignment submission and response method, Extend testing period, Offer alternate testing method, Offer different testing room ○ Intellectual Disability / Autism Spectrum Disorder: Offer individualized assignments and alternative evaluations
	Others	Students who take this course can get appropriate level of support service including the support listed above depending on the students' individual characteristics and needs through consultation with professors and the Support Center for Students with Disabilities. If you have any questions concerning support service for students with disabilities you can contact Professor KIM, EUN-HEE(02-880-7208) or Support Center for Students with Disabilities (02-880-8787).