

# 강 의 계 획 서(Syllabus)

## [1] 기본 정보(Basic Information)

### ■ 강의 정보(Course Information)

개설년도/학기 (Year/Semester)	2019 / 2		개설 캠퍼스 (Campus)	서울(Seoul Campus)		
교과목번호 (Course No.)	10576		분반번호 (Class No.)	01	학점 (Credit)	3
교과목명 (Course Title)	생물통계학(STATISTICS IN BIOLOGY)		강의시간/강의실 (Time/Room)	310관 701호 <강의실> 월 (13:30~14:45) / 수 (13:30~14:45)(310관 701호 <강의실> MON(13:30~14:45) / WED(13:30~14:45))		
이수구분 (Course Classification)	전공(Major)		과목구분 (Lecture Type)	단독강의(Lone-teaching course)		
강의유형 (Course Type)	이론(Theoretical course)		원어강의 여부 (Medium of Instruction)	영어A(ENGLISH A)		
대학 자체 인증 여부 (Accreditation)			공학교육인증 여부 (Accreditation of Engineering Education)			
개설대학 (College)	경영경제대학(College of Business & Economics)		개설학과(부) (Department)	경영경제대학 응용통계학과 (Department of Applied Statistics)		
e-class 활용여부 (Usage of e-class)	Yes		유연학기			

### ■ 교수자 정보(Instructor Information)

교수명 (Name)	곽일엽(IL YOUP KWAK)	소속 (Department)	응용통계학과(Department of Applied Statistics)
연구실전화번호 (Office Phone No.)		연락처 (Contact No.)	<input type="text"/>
E-mail 주소 (E-mail)	<input type="text"/>	학과전화번호 (Department Phone No.)	<input type="text"/>
상담가능시간 (Office Hour)	Monday 3pm~4pm	연구실위치 (Office Location)	310관 1006호
홈페이지 (Course Web-site)			

**[2] 학습 목표/성과(Learning Objectives/Outcomes)**

**■과목 설명(Course Description)**

The course is intended to impart an understanding of the principles and methods of reasoning that underlie modern biostatistics, providing the basis for further study in epidemiology and biostatistics. The course will provide information concerning specific descriptive and inferential techniques commonly used in public health research.

**\* Notice on Davinci Learning**

- Davinci Learning will be applied on this Biostatistics course.
- Before attending classes on the Davinci Learning Week indicated in the weekly schedule, students must take pre-classes uploaded in the e-class platform. Check 'Additional Description' in weekly schedule for the information on Davinci Learning.
- As students need more time to study pre-class clips on Davinci learning weeks, class time would be shortened based on the expected time needed for studying clip materials.

**■선수과목 및 공통필수과목(Prerequisites and Co-requisites)**

기초통계학

**■학습 목표(Learning Objectives)**

- Understand public health research and clinical trial.
- Understand the statistical methods used in public health research.
- Survival analysis
- Statistical Genetics

**■학습 성과(Learning Outcomes)**

- Understand public health research and clinical trial.
- Learn statistical methods and tools used in public health research.

**[3] 강의 진행 정보(Course Methods)**

**■강의 진행 방식(Teaching and Learning Methods)**

강의 진행 방식(Teaching and Learning Methods)	추가 설명(Additional Description)
강의(Lecture)	Lecture based on slides.
중간시험(Mid-term Exam)	
기말시험(Final Exam)	

**■과제(Assignments)**

과제(Assignments)	횟수(No.)	과제 설명(내용, 양식, 분량 등)(Assignments Description)
연습(Practice)	6	

**■수업 자료(Textbooks, Reading, and other Materials)**

수업 자료 (Textbook/Reference)	제목(Title)	저자(Author)	출판일/게재일(Year of Publication/etc)	출판사/학회지 (Publisher/Name of Journal)
참고도서(Reference)	Essentials of biostatistics in public health	Sullivan, Lisa M	2011	McGraw Hill

수업 자료 (Textbook/Reference)	제목(Title)	저자(Author)	출판일/게재일(Year of Publication/etc)	출판사/학회지 (Publisher/Name of Journal)
참고도서(Reference)	생명과학연구를 위한 통계적 방법	이재원 등	2006	자유아카데미

**[4] 학습 평가 방법(Student Assessment)**

평가 항목(Assessment Item)	평가 비율 (%)(Assessment Ratio)	추가 설명(Additional Description)
출결(Attendance)	10	
중간시험(Mid-term Exam)	30	
기말시험(Final Exam)	30	
과제(Assignment)	10	
기타(Others)	20	team project presentation

**[5] 수업 일정(Course Schedule)**

주(Week)	강사명 (Instructor)	수업주제 및 내용(Topic & Content)	학습과제 (Student Assignment)	추가설명 및 교수과제 (Additional Description & Instructor Assignment)
1	곽일엽	Introduction		
2	곽일엽	Study Design (pre) e-class (mid/discussion) Discussion on when to use which study designs	Pre-class (e-class) is about Study Design: Observational and randomized	Davinci Learning, Discussion on Research question and appropriate Study designs for each senario.
3	곽일엽	Quantifying the extent of Disease / Summarizing Data Collected in the Sample	HW1	
4	곽일엽	Real world big public health data analysis(BRFSS), (mid/discussion) discussion	Pre-class(e-class) BRFSS data intro, data analysis using R program	Davinci Learning, Discussion on research question setup, summarizing, visualizing results, in the example of BRFSS data( <a href="https://www.cdc.gov/brfss/">https://www.cdc.gov/brfss/</a> )
5	곽일엽	R and Jupyter notebook tutorials, The role of probability, Confidence interval estimation	HW2	
6	곽일엽	(pre) e-class, (mid/discussion) Discussion on CI derivation for RR, public health data analysis using R	Pre-class(e-class)	Davinci Learning
7	곽일엽	Confidence interval estimation, Hypothesis Testing Procedures	HW3	
8	곽일엽	Mid-term exam		Mid-term exam
9	곽일엽	Power and Sample Size Determination, Multivariable Methods	HW4	
10	곽일엽	How to read research papers, Multivariable methods. (pre) e-class, (mid/discussion) discussion on how to read research paper	Pre-class(e-class) on How to read research paper in biostatistics	Davinci Learning, Sample paper reading. Discussion on paper and how to read research paper
11	곽일엽	Nonparametric Tests	HW5	

주(Week)	강사명 (Instructor)	수업주제 및 내용(Topic & Content)	학습과제 (Student Assignment)	추가설명 및 교수과제 (Additional Description & Instructor Assignment)
12	곽일엽	Survival Analysis 1 (pre) e-class, (mid/discussion)	Pre-class(e-class)	Davinci Learning
13	곽일엽	Survival Analysis 2	HW6	
14	곽일엽	(pre) e-class on Statistical Genetics 1 (after) team project presentation 1	Pre-class(e-class)	Davinci Learning, In team project, each team will select a paper and review it.
15	곽일엽	(pre) e-class on Statistical Genetics 2 (after) team project presentation 2	Pre-class(e-class)	Davinci Learning
16	곽일엽	Final exam		Final exam

**[6] 수강생 학습 안내 사항(Guide to Learning)**

- It is recommended that you review the lecture notes after the class.
- Davinci Learning will be applied on seven weeks as described in Weekly Schedules.
- On Davinci learning weeks, pre-class clips will be provided as e-class, and it is mandatory to study pre-class clips before the class.
- As students need more time to study pre-class clips on Davinci learning weeks, class time would be shortened based on the expected time needed for studying clip materials.

**기출문제(Previous Exam Samples)**

**<추가 자료 다운로드>(Download Additional Sample)**

첨부 자료가 없습니다.

※시험 부정 행위 적발 시 중앙대학교 학칙 제71조 **【징계】** 및 학사운영규정 I 제 6장 제 47조 **【시험 부정행위자의 처벌】**에 따라 징계 처분 대상이 될 수 있습니다.

(※In pursuant to the Article 71 “Discipline” of the Chung-Ang University Regulations, and Article 47 “Punishment for Cheating during Examination” under Chapter 6 of the Academic Affairs Management Rules, any student caught engaging in academic misconduct during an exam will be subject to disciplinary action.)

본 수업을 수강하는 장애학생은 장애유형 및 등급에 따라 학습을 위한 도우미 지원 및 학습 조정 지원(강의자료 사전제공, 과제 및 평가 조정, 시험시간 연장 등)이 가능 하오니, 필요한 학생은 강의시간표 OPEN후 일주일 이내 장애학생지원센터에 문의해 주시기 바랍니다.

- \* 서울 캠퍼스 : 02)820-6577~9
- \* 안성 캠퍼스 : 031)670-4816
- \* 장애학생지원센터 홈페이지 : <http://able.cau.ac.kr>

Students with disabilities who take this class can be provided with student support services such as a tutor or learning adjustments (e.g. providing lecture materials in advance, adjusting assignments and examinations, extending a duration of examinations) by disability type and grade. As such, please contact Chung-Ang University Support Center for Students with Disabilities within one week since a timetable is published.

- Seoul Campus: 02) 820-6577~9
- Anseong Campus: 031) 670-4816
- The official website of Chung-Ang University Support Center for Students with Disabilities:  
<http://able.cau.ac.kr>