Alanya Alaaddin Keykubat University | Rafet Kayış Faculty of Engineering
Genetic and Bioengineering Department
2023-2024 Spring Semester

Syllabus

Code/Name	GBM 302 / Genetic Engineering II
Type	Required
Credit/ECTS	6/6
Hour per Week	3 (3+0+0)
Level/Year	Undergraduate/3
Semester	Spring
Classroom	D305
Content	In the second part of the genetic engineering course, timeline of genetic engineering, the artificial manipulation, modification, and recombination of DNA, methods of recombinant DNA technology, medically important products, including human insulin, human growth hormone, and hepatitis B vaccine, as well as to the development of genetically modified organisms such as disease-resistant plants, gene expression, gene regulation, CRISPR are introduced.
Prerequisites	
Textbooks	***Primary*** Class Notes ***Supplementary*** Desmond S. T. Nicholl, An Introduction to Genetic Engineering, Third Edition, Cambridge University Press, ISBN-13 978-0-511-39858-2, 2008.
Objectives	• To learn recombinant DNA technology • To learn gene expression • To learn gene regulation mechanisms
Course Outcomes	In this course you will be able to: CO1 Outline the genetic engineering concepts. CO2 Outline the scope and applications of genetic engineering CO3 Classify fundamental areas of recombinant DNA technology. CO4 Improve problem solving ability. CO5 Practice professional responsibilities and ethics.

Weekly Schedule of Topics

W	Topic
1	Introduction to genetic engineering II and Concepts of Genetic Engineering II
2	Enzymes of Genetic Engineering
3	Tools Used in Genetic Engineering
4	Introduction of Recombinant DNA into Host Cells
5	Linking of Desired Gene with DNA Vector/Gene Cloning Vector
6	Blotting techniques
7	Applications of recombinant technology
8	Genetically Engineered Microorganisms
9	introduction to gene expression: principles, mechanism and expression
10	Protein synthesis Part I and II
11	Protein synthesis Part III

12	Gene regulation mechanisms
13	Operons
14	Molecular Markers and Their Applications
Professional Contribution	Understand the field of genetic engineering and its applications

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	4	3	1	5	4	3	1	3	2	3	5
CO2	4	4	1	5	5	3	1	3	4	3	5
CO3	4	4	1	4	5	3	1	3	2	3	5
CO4	0	0	3	1	3	3	2	3	4	4	5
CO5	0	0	1	1	1	3	4	3	5	1	4

* Contribution Level | 0: None | 1: Very Low | 2: Low | 3: Medium | 4: High | 5: Very High

Special Conditions	
Requirements	
Course Policy	• Be in the class on time. • English should be used to communicate with one another. • Mobile phone should be switched off and put away during the class. • At least 70% attendance is required, otherwise a grade of **DZ** will be assigned.
Cheating & Plagiarism	• Copying or letting someone copy your work on exams, assignments, or reports is cheating. • Cutting and pasting text, figures and tables from web sources or any other electronic source is plagiarism. • The consequence of academic dishonesty is to receive a grade of **FF** for the course.
Evaluation	Midterm 50% Final Exam 50% Total 100%
Rubric	A rubric will be announced prior to exams.

Instructor

Name/Surname	Aslı Giray	Email	asli.giray@alanya.edu.tr
Room		Office Hours	W 11.30-12.30 | T 13.30-14.30

Prepared by Aslı Giray.