

Alanya Alaaddin Keykubat University | Rafet Kayış Faculty of Engineering  
**Genetics and Bioengineering Department**  
2024-2025 Fall Semester

### Syllabus

<b>Code/Name</b>	SEC304.1/ SCIENTIFIC RESEARCH METHODS
<b>Type</b>	Elective (non-technical)
<b>Credit/ECTS</b>	4/4
<b>Hour per Week</b>	3
<b>Level/Year</b>	Undergraduate/3
<b>Semester</b>	Spring
<b>Classroom</b>	N/A
<b>Content</b>	SEC304.1 Scientific Research Methods provides a comprehensive introduction to research methodology and scientific writing, focusing on the principles and practices of conducting academic research.
<b>Prerequisites</b>	N/A
<b>Textbooks</b>	<b>Primary</b> Research Methodology And Scientific Writing, Thomas, 2021 <b>Supplementary</b> Various articles
<b>Objectives</b>	<ul style="list-style-type: none"><li>• Introduce students to fundamental concepts of research methodology and the scientific process.</li><li>• Develop the ability to design research proposals, collect and analyze data, and interpret findings.</li><li>• Equip students with essential skills for academic and scientific writing, including thesis and research paper preparation.</li><li>• Emphasize ethical considerations and plagiarism prevention in research and writing.</li></ul>
<b>Course Outcomes</b>	CO1. Formulate research questions and hypotheses based on sound reasoning and literature review. CO2. Choose appropriate research methods and designs for specific problems. CO3. Analyze data effectively using statistical tools and interpret results meaningfully. CO4. Prepare scientific research proposals, theses, and research papers. CO5. Apply ethical principles and avoid plagiarism in academic writing.

### Weekly Schedule of Topics

W	Topic	Content
1	Introduction to Research	Research processes and academic research
2	Research Design and Planning	Research process: Steps from problem identification to hypothesis formulation
3	Literature Review	Planning a literature search and managing information
4	Research Methods	Major research methods: observational, ethnographic, longitudinal, experimental
5	Experimental Design	Principles and types of experimental designs
6	Data Collection and Analysis	Scales of measurement and descriptive statistics
7	Statistical Tools and Software	Overview of popular statistical packages
8	Writing Research Proposals	Finding research problems and structuring a proposal

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9	Scientific Writing Basics	Preparing research papers and selecting journals
10	Thesis Writing	Structuring a thesis: Preliminary pages and content organization
11	Figures, Tables, and Illustrations	Designing and presenting visual elements in research
12	Ethics in Research	Research ethics, misconduct, and intellectual property rights
13	Plagiarism and Citations	Types of plagiarism and paraphrasing techniques
14	Presenting Research	Preparing effective presentation slides

<b>Professional Contribution</b>	N/A
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**Contribution to Program Outcomes\***

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C01	0	1	1	0	2	0	0	0	0	0	1
C02	1	1	0	0	1	0	0	0	0	0	1
C03	1	1	0	1	1	0	0	0	0	0	1
C04	0	0	0	0	0	0	0	2	2	1	1
C05	0	0	0	0	0	1	2	1	1	0	1

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

<b>Special Conditions</b>	N/A
<b>Requirements</b>	N/A
<b>Course Policy</b>	N/A

<b>Cheating &amp; Plagiarism</b>	<ul style="list-style-type: none"> <li>• Copying or letting someone copy anyone work on exams, assignments, or reports is cheating.</li> <li>• Cutting and pasting text, figures and tables from web sources, AI or any other electronic source is plagiarism.</li> <li>• The consequence of academic dishonesty is to receive a grade of <b>FF</b> for the course.</li> </ul>
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<b>Evaluation</b>	Presentation 30% Midterm Exam 30% <u>Final exam</u> 40% Total 100%
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<b>Rubric</b>	N/A
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<b>Instructor</b>			
Name/Surname	Enes Durgut	Email	<b>enes.durgut@alanya.edu.tr</b>
Room	321	Office Hours	Students can arrange meetings through Google Calendar

Prepared by Enes Durgut on November 15th, 2024