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## INS5004 RESEARCH METHODS AND SCIENTIFIC ETHICS

Week	Date	Subjects
2	27.02.2024	<b>General information about the course</b> <b>(Course Objectives, Course Contents, Evaluation system)</b>
3	05.03.2024	<b>Developing an Effective Scientific Writing– I</b> <ul style="list-style-type: none"> <li>• How to Prepare the Title</li> <li>• How to List the Authors and Addresses</li> <li>• How to Write Effective Abstract &amp; Introduction</li> <li>• How to Develop Effective Tables and Figures</li> <li>• How to Write an Effective Materials and Methods</li> </ul>
4	12.03.2024	<b>Developing an Effective Scientific Writing– II</b> <ul style="list-style-type: none"> <li>• How to Write Effective Results &amp; Discussion &amp; Conclusion</li> <li>• How to State the Acknowledgments</li> <li>• How to Cite the References</li> <li>• Effective Word Usage in Scientific Writing</li> </ul>
5	19.03.2024	<b>Presentation Skills and Techniques</b> <b>Ethics Interests</b> <ul style="list-style-type: none"> <li>• Engineering Ethics / Research Ethics / Publication Ethics</li> <li>• Related Regulations</li> </ul>
6	26.03.2024	<b>NO CLASS</b>
7	02.04.2024	<b>NO CLASS</b>
8	09.04.2024	<b>NO CLASS (Eve of Ramadan Fest)</b>
9	16.04.2024	<b>NO CLASS</b>
10	23.04.2024	<b>NO CLASS (National Sovereignty and Children's Day)</b>
11	30.04.2024	<b>Student Presentations (Article Review)</b> <ul style="list-style-type: none"> <li>• An oral presentation of an article review</li> </ul>
12	07.05.2024	<b>Student Presentations (Article Review)</b> <ul style="list-style-type: none"> <li>• An oral presentation of an article review</li> </ul>
13	14.05.2024	<b>Student Presentations (Article Review)</b> <ul style="list-style-type: none"> <li>• An oral presentation of an article review</li> </ul>
14	21.05.2024	<b>Student Presentations (Article Review)</b> <ul style="list-style-type: none"> <li>• An oral presentation of an article review</li> </ul>

## **Assignments for INS5004 for the remainder of the term.**

### **ASSIGNMENT-1 (ARTICLE REVIEW):**

**Assignment Content:** PP Presentation + Article review report.

- Find a **KEY ARTICLE** related to your research. The article should be published in a journal that should be **indexed in SCI or SSCI or SCI-Expanded**.
- Give a brief information about the article's:
  - Title
  - Writers
  - Journal name, volume, number, pages, year of publication
- Give a brief information obtained from the content of article
  - Description of the problem
  - Background of the study or related literature
  - Research question of the article
  - Hypothesis of the article (if there is any)
  - Methods used in the article (model development, experimental study, case study, comparative evaluation, literature research etc.)
  - Basic quantities (variables, parameters, constants)
  - Findings (results) related with research question
  - Is there any other interesting findings or secondary outcomes of the paper other than research question?
  - Discussions of the article
  - Limitations of the study (if there is any)
  - Conclusion of the article (main contribution of the study, suggestions for future studies)
- Write down your evaluation about the importance of the research paper in couple of paragraphs.
- **ARTICLE REVIEW** should also include the following information:
  - Analysis of references cited in the article. How many (as percentages) references belong to last 5, 10, 15, 20 years or so on?
  - When is the article submitted and when is accepted? And when is published?
  - Search the authors of in Google Scholar or Web of Science and try to find their H-index or their number of publications etc.
  - Find out how many times this article was cited by others.
  - Find out Q index and impact factor of the journal.
  - Or any other interesting findings about the paper or about the authors, their research group or their project that supports their study.
- The presentation duration is about 15 minutes that means you should prepare 15±5 slides for your presentation.
- Prepare your presentation in PowerPoint 2003 format.
- Presentations will be held on 11 and 14<sup>th</sup> week.
- Along with your presentation, prepare an article review report as a word document (no more than three pages).
- Send your PP presentation and article review to the lecturer's e-mail before your presentation day. ([haladag@yildiz.edu.tr](mailto:haladag@yildiz.edu.tr))

## **ASSIGNMENT-2:**

**Assignment Content:** Students are expected to write a scientific article.

- **On the final examination date, submit your research paper (article) both as a soft and hardcopy.** For softcopy submission use [haladag@yildiz.edu.tr](mailto:haladag@yildiz.edu.tr)
- Your final work should be eligible in terms of suggested steps of scientific research methods.
- Final work should include the following content:
  - Present background of your study,
  - Present your problem statement,
  - Conduct a literature review for your own research and explain originality of the work,
  - Explain hypotheses of your research in couple of paragraphs (if you have),
  - Determine and give information about the suggested methodology that you are going to use (why this method? How will you use this method? If there are, explain the Challenges for this method?),
  - Give information about data collection and data analysis processes,
  - Explain preliminary findings of your work,
  - Make a discussion based on your key findings,
  - Conclude the work by highlighting study's limitations, contribution of the work and the future studies.
- Plagiarism control will be done for the submitted papers. Papers with high similarity ratio (higher than %20) will not be considered for evaluation. Along with submitting your research paper (article), students should also submit their similarity check report.
- Use the INS5004\_FullPaper template.