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| **TISHK INTERNATIONAL UNIVERSITYFACULTY OF EDUCATIONDepartment of BIOLOGY EDUCATION,2020-2021 FallCourse Information for BIO 417 RESEARCH METHOD** |

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| --- | --- |
| **Course Name:** | RESEARCH METHOD |
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| --- | --- | --- | --- | --- | --- |
| **Code** | **Regular Semester** | **Theoretical** | **Practical** | **Credits** | **ECTS** |
| BIO 417 | 7 | 3 | - | 3 | 5 |

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| **Name of Lecturer(s)-Academic Title:** | Saber Wasman - |
| **Teaching Assistant:** | - |
| **Course Language:** | English |
| **Course Type:** | Main |
| **Office Hours** | 3 |
| **Contact Email:** | saber.wasman@tiu.edu.iqTel:07504601381 |
| **Teacher's academic profile:** | BSc Plant Production MSc Plant Allelopathy PhD Plant Physiology |
| **Course Objectives:** | This course will provide an opportunity for participants to establish or advance their understanding of research through critical exploration of research language, ethics, and approaches. The course introduces the language of research, ethical principles and challenges, and the elements of the research process within quantitative, qualitative, and mixed methods approaches. Participants will use these theoretical underpinnings to begin to critically review literature relevant to their field or interests and determine how research findings are useful in forming their understanding of their work, social, local and global environment . |
| **Course Description (Course overview):** | The course will discuss the methodologies and strategies of research conduct. The art of writing a scientific research paper. The component of the research with highlighting the most effective parts in a scientific paper. It aims to introduce the students to the scientific ethics of conducting a research, the challenges of plagiarism and copyrights, quality improvement of a scientific article and the elements of a high quality publication. |
| **COURSE CONTENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topic** |
| **1** | 3 | 7-8/10/2020 | Introduction to Research and the Research Process |
| **2** | 3 | 11-15/10/2020 | Research Ethics and Integrity |
|  |  |  |  |
| **3** | 3 | 18-22/10/2020 | Critical appraisal |
| **4** | 3 | 25-28/10/2020 | Introduction to Quantitative Research, Study Designs and Methods |
|  |  |  |  |
| **5** | 3 | 1-5/11/2020 | Analysis and Interpretation of Quantitative Data |
| **6** | 3 | 8-12/11/2020 | Critical Appraisal of Quantitative Research |
|  |  |  |  |
| **7** | 3 | 15-19/11/2020 | Introduction to Qualitative Research, Study Designs and Methods |
| **8** | 3 | 22-26/11/2020 | Midterm Exam |
|  |  |  |  |
| **9** | 3 | 29/11-3/12/2020 | Analysis and Interpretation of Qualitative Data |
| **10** | 3 | 6-10/12/2020 | Critical Appraisal of Qualitative Research |
|  |  |  |  |
| **11** | 3 | 13-17/12/2020 | Introduction to Mixed Methods Research, Study Designs and Methods |
| **12** | 3 | 20-24/12/2020 | Analysis and Interpretation of Mixed Methods Data |
|  |  |  |  |
| **13** | 3 | 27-31/12/2020 | Critical Appraisal of Mixed Methods Research |
| **14** | 3 | 3-7/1/2021 | Data Analysis |
|  |  |  |  |
| **15** | 3 | 10-14/1/2021 | Final Exam |
| **16** | 3 | 17-21/1/2021 | Final Exam |
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| **COURSE/STUDENT LEARNING OUTCOMES**

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| --- | --- |
|  |  |
| **1** | Understand research terminology |
| **2** | Be aware of the ethical principles of research, ethical challenges and approval processes |
| **3** | Describe quantitative, qualitative and mixed methods approaches to research |
| **4** | Identify the components of a literature review process |
| **5** | Critically analyze published research |

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| **COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES**(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced )

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| --- | --- | --- |
|  | **Program Learning Outcomes** | **Cont.** |
| **1** | Write accurately and clearly about biology topics that conform to the scientific conventions of that field. | P |
| **2** | Describe the molecular components of living things, their heredity transformations and the main concerns in these biological process | A |
| **3** | Identify and analyze the microorganisms including bacteria, fungi and virus and their roles in nature. | P |
| **4** | Characterize the features of plant organs/tissues/cells/organelles involved in cellular respiration, photosynthesis, reproduction and growth. | I |
| **5** | Describe the micro and macro anatomy of the living systems and recognize the relationship between structure and function at all biological systems and levels. | P |
| **6** | Apply safety and proper techniques in the laboratory, and report the results of conducted experiments. | P |
| **7** | Use appropriate methods and techniques to improve their students’ critical thinking, creative thinking and problem-solving skills. | A |
| **8** | Effectively organize and manage classrooms. | A |
| **9** | Use required methods and techniques for student-centered teaching by considering individual and cultural differences of students. | P |
| **10** | Develop research studies that applies quantitative or qualitative research methods that address research questions in the field. | P |

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| **Prerequisites (Course Reading List and References):** | Creswell, J. W. Research design: Qualitative, quantitative and mixed methods approaches. 5th Ed. Thousand Oaks, CA: Sage, 2018. |
| **Student's obligation (Special Requirements):** | Students are recommended to have access to a print copy of a dictionary of epidemiology, research or statistics or an online glossary. A highly recommended dictionary is: Porta, M. (2014). A dictionary of epidemiology (6th ed). New York, NY: Oxford University Press. |
| **Course Book/Textbook:** | TRU Library. APA Citation Style - Quick Guide. 6th edition. 2011. Type: Online Guide |
| **Other Course Materials/References:** | Research Methodology – C.R.Kothari |
| **Teaching Methods (Forms of Teaching):** | Lectures, Practical Sessions, Excersises, Presentation, Project, Assignments, Demonstration |
| **COURSE EVALUATION CRITERIA**

|  |  |  |
| --- | --- | --- |
| **Method** | **Quantity** | **Percentage (%)** |
| Attendance | 1 | 5 |
| Participation | 1 | 5 |
| Homework | 2 | 5 |
| Midterm Exam(s) | 1 | 30 |
| Lab/Practical Exam(s) | 1 | 10 |
| Final Exam | 1 | 40 |
| **Total** | **100** |
| **Examinations:**Essay Questions, True-False, Multiple Choices, Short Answers |  |  |

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| **Extra Notes:** |
| **ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD**

|  |  |  |  |
| --- | --- | --- | --- |
| **Activities** | **Quantity** | **Workload Hours for 1 quantity\*** | **Total Workload** |
| Theoretical Hours | 16 | 3 | 48 |
| Practical Hours | 16 | 0 | 0 |
| Final Exam | 1 | 2 | 2 |
| Attendance | 1 | 1 | 1 |
| Participation | 1 | 1 | 1 |
| Homework | 2 | 1 | 2 |
| Midterm Exam(s) | 1 | 1 | 1 |
| Lab/Practical Exam(s) | 1 | 2 | 2 |
| **Total Workload** | **57** |
| **ECTS Credit (Total workload/25)** | **2.28** |

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**Peer review**

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| --- | --- | --- |
| Signature: | Signature: | Signature: |
| Name: | Name: | Name: |
| Lecturer                                                                       | Head of Department                                                         | Dean |

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