

## RSCH690 – Research Methodology

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|---------------------------------|---|-------------------------|
| <b>Curricular Area</b>          | <b>Master of Engineering/ All departments</b>   |                         |
| <b>Type of Course</b>           | Mandatory – Major   |                         |
| <b>Catalogue Description</b>    | Research: a way of thinking, entering into research and research methodology, steps for conducting a successful research: formulating a research problem, conceptualizing a research design, constructing an instrument for data collection, selecting samples, writing a research proposal, collecting data, processing & displaying data, writing a research report. Research at Beirut Arab University: enrollment, intramural grants, incentives ... The course contains a project that will help students start their master thesis or project. Usually the project is to write a first draft of their M.E. thesis proposal. |                         |
| <b>Prerequisites by Courses</b> | NA  |                         |
| <b>Prerequisites by Topics</b>  | NA  |                         |
| <b>Instructors</b>              | Dr. Hamza Issa<br>h.issa@bau.edu.lb<br>Engineering Building – Department of Electrical Engineering<br>Office G 110 (Phone Ext 3403)   |                         |
| <b>Office Hours</b>             | Monday: 15:00 – 16:00; Wednesday: 14:00 – 16:00; Thursday : 12:00 – 13:00   |                         |
| <b>Load</b>                     | 3 credits; 2 Lecture-sessions/week – 80 min per session,<br>Monday: 11:00-14:20 (Room: B227);   |                         |
| <b>Textbook</b>                 | Ranjit Kumar, “Research Methodology: a step by step guide for beginners”, SAGE, 3rd edition, 2011   |                         |
| <b>Topics</b>                   | <i>Subjects covered</i>   | <i>80 min. lectures</i> |
|                                 | Research: a way of thinking   | 2                       |
|                                 | Entering into research and research methodology   | 2                       |
|                                 | Formulating a research problem  | 2                       |
|                                 | Conceptualizing a research design   | 2                       |
|                                 | Constructing an instrument for data collection  | 2                       |
|                                 | Selecting samples   | 2                       |
|                                 | Writing a research proposal   | 4                       |
|                                 | Collecting data   | 4                       |
|                                 | Processing & displaying data  | 2                       |
|                                 | Writing a research report   | 4                       |
|                                 | Research at Beirut Arab University: enrollment, intramural grants, incentives ...   | 2                       |
|                                 | Project: discussions before and after submission  | 2                       |
| <b>Total</b>                    | <b>30</b>   |                         |

| <b>Learning Outcomes</b>  | <b>Correlation with</b> | <b>Program Outcomes</b>   | <b>Program Objectives</b> |
|---|-------------------------|---|---------------------------|
| <i>At the end of this course students should be able to:</i>  |                         |   |                           |
| Define the general field of research and research methodology   |                         | <b>Depend<br/>on the<br/>program<br/>in which<br/>the<br/>student is<br/>registered</b> |                           |
| Initiate and sustain in-depth research  |                         |   |                           |
| Formulate a research problem  |                         |   |                           |
| Apply skills, personal attributes and competencies that will be required for writing a successful research proposal   |                         |   |                           |
| Conceptualize a research design   |                         |   |                           |
| Construct and validate an instrument for data collection  |                         |   |                           |
| Describe all ethical issues related to research   |                         |   |                           |
| Use technical terms used in the domain  |                         |   |                           |
| Cultivate a professional attitude and develop skills relation to communication, teamwork, planning and management, and responsibility for individual learning |                         |   |                           |
| Demonstrate knowledge about research in Beirut Arab University  |                         |   |                           |

This table depends on the program itself

| <b>Learning Outcomes Assessment Tools</b>   | <b>Exams</b> | <b>HW s</b> | <b>Lab Reports</b> | <b>Project</b> | <b>Course Survey</b> |
|---|--------------|-------------|--------------------|----------------|----------------------|
| Define the general field of research and research methodology   | ☒            | ☒           |                    | ☒              | ☒                    |
| Initiate and sustain in-depth research  | ☒            | ☒           |                    | ☒              | ☒                    |
| Formulate a research problem  | ☒            | ☒           |                    | ☒              | ☒                    |
| Apply skills, personal attributes and competencies that will be required for writing a successful research proposal   | ☒            | ☒           |                    | ☒              | ☒                    |
| Conceptualize a research design   | ☒            | ☒           |                    | ☒              | ☒                    |
| Construct and validate an instrument for data collection  | ☒            | ☒           |                    | ☒              | ☒                    |
| Describe all ethical issues related to research   | ☒            | ☒           |                    | ☒              | ☒                    |
| Use technical terms used in the domain  |              |             |                    |                |                      |
| Cultivate a professional attitude and develop skills relation to communication, teamwork, planning and management, and responsibility for individual learning | ☒            | ☒           |                    | ☒              | ☒                    |
| Demonstrate knowledge about research in Beirut Arab University  | ☒            | ☒           |                    | ☒              | ☒                    |

**Assessment:**

| <b>Assessments</b>        | <b>Dates</b>  | <b>Weighing</b> |
|---------------------------|---|-----------------|
| <b>Class work</b>         | Through the whole semester (class discussions and group work) | 10%             |
| <b>Home work</b>          | Through the whole semester (biweekly assignments)             | 10%             |
| <b>Midterm assessment</b> | 7 <sup>th</sup> week  | 20%             |
| <b>Project work</b>       | At the end of the semester                                    | 20%             |
| <b>Final Exam</b>         | TBS   | 40%             |
| <b>Total</b>              |   | <b>100%</b>     |

**Attendance:**

*As set by BAU regulations, and specified in Student Manual, students who miss more than 20% of the sessions of any course excluding the first week of the semester will be withdrawn from the course with and will get a grade of “WF”. The first attendance warning is issued after 10% absence. The second sued when the absence percentage becomes 15%. The course is withdrawn when the percentage reaches 20%. The “WF” grade is not taken into account in the calculation of the SGPA.*

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| <b>Course Coordinator</b> |
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| Dr. Hamza Issa |
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31/01/2016