

**DISCIPLINE SHEET**

**ACADEMIC YEAR**

**2022- 2023**

**1. DATA ABOUT THE STUDY PROGRAM**

|                                     |  |
|-------------------------------------|--|
| 1.1 Institution of higher education | UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA |
| 1.2 Faculty                         | <b>MEDICINE</b>                                |
| 1.3 Department                      | 3  |
| 1.4 Study Domain                    | HEALTH   |
| 1.5 Study cycle                     | LICENCE  |
| 1.6 Study program/ Qualification    | MEDICINE                                       |

**2. DATA ABOUT THE DISCIPLINE**

|                                       |           |  |           |   |
|---------------------------------------|-----------|--|-----------|---|
| 2.1 DISCIPLINE NAME                   |           | <b>SCIENTIFIC RESEARCH METHODOLOGY</b> |           |   |
| 2.2. Discipline code                  |           | MED 4211                               |           |   |
| 2.3 Holder of course activities       |           | Roxana Cruce                           |           |   |
| 2.4 Holder of seminar activities      |           | Roxana Cruce                           |           |   |
| 2.5. Academic degree                  |           | Lecturer                               |           |   |
| 2.6. Employment (base norm/associate) |           | Base norm                              |           |   |
| 2.7. Year of study                    | <b>IV</b> | 2.8. Semester                          | <b>II</b> | 2.9. Course type (content)<br>2.10. Regime of discipline (compulsoriness) |
|                                       |           |  |           | <b>CCD</b>  |

**3. TOTAL ESTIMATED TIME (teaching hours per semester)**

|  |           |                        |           |                          |           |
|--|-----------|------------------------|-----------|--------------------------|-----------|
| 3.1 Number of hours per week   | <b>2</b>  | 3.2 of which – course: | <b>1</b>  | 3.3 seminary/laboratory: | <b>1</b>  |
| 3.4 Total hours in curriculum  | <b>28</b> | 3.5 of which – course: | <b>14</b> | 3.6 seminary/laboratory: | <b>14</b> |
| Total time distribution (hours)  |           |                        |           |                          |           |
| Study by text-book, course support, bibliography, and notes                                |           |                        |           |                          | <b>7</b>  |
| Additional documentation in the library, specialized electronic platforms and on the field |           |                        |           |                          | <b>5</b>  |
| Training seminars / labs, homework, reports, portfolios, and essays                        |           |                        |           |                          | <b>6</b>  |
| Tutoring   |           |                        |           |                          | <b>-</b>  |
| Examinations   |           |                        |           |                          | <b>1</b>  |
| Other activities, counselling, student circles   |           |                        |           |                          | <b>3</b>  |
| 3.7 Total hours of individual study  | <b>22</b> |                        |           |                          |           |
| 3.9 Total hours per semester   | <b>50</b> |                        |           |                          |           |
| 3.10 Number of credits   | <b>2</b>  |                        |           |                          |           |

**4. PREREQUISITES** (where appropriate)

|                |  |
|----------------|--|
| 4.1 curriculum | Students must have basic knowledge in: Physiology, Physiopathology, Biostatistics, Internal Medicine |
| 4.2 competency | -  |

**5. CONDITIONS** (where appropriate)

|                                  |  |
|----------------------------------|--|
| 5.1. of course deployment        | -  |
| 5.2. of seminary/ lab deployment | Individual study prior to the practical assignment |

**6. SPECIFIC COMPETENCES ACCRUED**

|                                 |   |
|---------------------------------|---|
| <b>PROFESSIONAL COMPETENCES</b> | <b>C3</b> - To properly assess the risk of occurrence of an individual/collective medical condition, followed by selection and application of appropriate prophylaxis |
|                                 | <b>C4</b> - To address health / illness issues from the perspective of particularities within a community, related to the social, economic and / or cultural aspects  |
|                                 | <b>C5</b> - To initiate and conduct scientific research and / or a formative activity depending on the field of competence  |
|                                 |   |

|                                |   |
|--------------------------------|---|
| <b>TRANSVERSAL COMPETENCES</b> | <p><b>CT1. Autonomy and responsibility</b></p> <ul style="list-style-type: none"> <li>To acquire moral norms, to develop their professional attitude, which will allow the students to be fair, honest, cooperative and willing to help people, to be interested in community development;</li> <li>to know, respect and contribute to the development of moral values and professional ethics;</li> <li>to learn to recognize when a problem arises and to provide responsible solutions for solving it;</li> <li>to acknowledge the importance of comprehending and observing ethical and methodological norms, when working with either human or animal subjects</li> </ul> <p><b>CT2. Social interaction:</b></p> <ul style="list-style-type: none"> <li>to be able to recognize and respect diversity and multiculturalism;</li> <li>to cultivate teamwork skills;</li> <li>to be able to communicate orally and in writing the objectives and requirements of their research, the methods, their results, and to communicate efficiently within a team;</li> </ul> <p><b>CT3. Personal and professional development:</b></p> <ul style="list-style-type: none"> <li>to optimally and creatively capitalize on their own potential in collective activities;</li> <li>to acquire the basic knowledge regarding the main types of medical scientific works and their elaboration;</li> <li>to develop their computer skills for documentation and results analysis in the process of scientific research;</li> <li>to appreciate the need for individual study as the basis of personal autonomy and professional development.</li> </ul> |
|--------------------------------|---|

### 7. DISCIPLINE OBJECTIVES (based on the grid of specific acquired competences)

|   |  |
|---|--|
| 7.1 The general objective of the discipline | Acquiring general knowledge on medical scientific research, its ethical standards, and the use of modern methodologies in scientific research  |
| 7.2 Specific objectives of the discipline   | <ul style="list-style-type: none"> <li>writing specific types of medical papers</li> <li>knowledge of ethical norms for research on humans and animals</li> <li>becoming more familiar with the use of specific programs for medical statistics and medical research</li> <li>developing the capacity to pertinently appreciate the value of scientific information available in the literature and its applicability in medical practice</li> <li>developing the aptitudes of identifying the areas of medical practice and public health where more research efforts are needed and of delineating directions for research and ways of implementing it, in those specific areas</li> </ul> |

### 8. CONTENTS

| 8.1 Course (content units)   | Nr. ore |
|--|---------|
| MSR1.C1. Introduction, history, types of scientific research, principles of scientific research  | 2       |
| MSR1.C 2. Design of a research study. Types of clinical trials. Cross-sectional studies, case-control studies, cohort studies  | 2       |
| MSR1.C 3. Types of clinical trials: Randomized control trials, the cross-over design   | 2       |
| MSR1.C 4. Notions regarding bibliographic documentation for scientific research in health sciences   | 2       |
| MSR1.C 5. Questionnaires and interviews in medical scientific research   | 2       |
| MSR1.C 6. Valorization of research results. Notions of ethics in medical scientific research   | 2       |
| MSR1.C7. Integrative course: designing and implementing scientific studies in the medical field, capitalizing on researchers' own results; evaluating and using scientific results of other studies - the perspective of <i>implementing</i> research and that of <i>using</i> research findings. Communities of practice, communities of research | 2       |
| <b>BIBLIOGRAPHY</b>  |         |
| 1. Creswell, J.W. and Creswell, J.D., 2017. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. SAGE Publications  |         |
| 2. Forister, J.G. and Blessing, J.D., 2019. Introduction to research and medical literature for health professionals. Jones & Bartlett Learning  |         |
| 3. Laake, P. and Benestad, H.B., 2015. Research in medical and biological sciences: From planning and preparation to grant application and publication. Academic Press.  |         |
| 4. Pirici, N.D., Streba C., Cruce R. (in press) Methodology of Scientific Research, Editura Medicală Craiova   |         |
| 5. Polgar, S. and Thomas, S.A., 2019. Introduction to Research in the Health Sciences. Elsevier Health Sciences  |         |
| <b>8.2 Seminars (topics / themes)</b>  |         |
| MSR1.S 1. The structure of an original paper   | 2       |
| MSR1.S 2. Types of clinical trials - examples; comparative analysis: case-control versus cohort studies; Randomized Control Studies; cross-over design studies   | 2       |

|   |   |
|---|---|
| MSR1.S 3. How to read / write a scientific paper? Types of scientific papers in health sciences research  | 2 |
| MSR1.S 4. Bibliographic documentation. Reference management, frequently used citation methods   | 2 |
| MSR1.S 5. Elements of data processing in health sciences research   | 2 |
| MSR1.S 6. Valorization of research results; presentation of a scientific work   | 2 |
| MSR1.S 7. Integrative seminar: implementing and using scientific research results in the medical field – practical aspects. Ethical issues in medical research.         | 2 |
| <b>BIBLIOGRAPHY</b>   |   |
| 1. Creswell, J.W. and Creswell, J.D., 2017. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. SAGE Publications                                 |   |
| 2. Forister, J.G. and Blessing, J.D., 2019. Introduction to research and medical literature for health professionals. Jones & Bartlett Learning                         |   |
| 3. Laake, P. and Benestad, H.B., 2015. Research in medical and biological sciences: From planning and preparation to grant application and publication. Academic Press. |   |
| 4. Pirici, N.D., Streba C., Cruce R. (in press) Methodology of Scientific Research, Editura Medicală Craiova  |   |
| 5. Polgar, S. and Thomas, S.A., 2019. Introduction to Research in the Health Sciences. Elsevier Health Sciences   |   |

### 9. CORROBORATING THE DISCIPLINE CONTENT WITH THE EXPECTATIONS OF THE EPISTEMIC COMMUNITY, OF THE PROFESSIONAL ASSOCIATIONS AND OF THE REPRESENTATIVE EMPLOYERS RELATED TO THIS PROGRAM

Methodology of Scientific Research is mandatory discipline for a student to gain a complete, rounded perspective on the process of continuous evolution and innovation in the field of health sciences. The knowledge and practical skills learned in this discipline provide the necessary support for the student to be able to pertinently evaluate a scientific work and to conduct/ participate in the process of implementing research activities and to elaborate, write and publish a "peer reviewed" scientific paper

### 10. METHODOLOGICAL LANDMARKS

|                   |   |
|-------------------|---|
| Types of activity | Teaching/ learning techniques, materials and resources: lectures, interactive group work, problem-based and project-based learning, team-based learning, flipped classroom, etc.  |
| Lectures          | Course teaching uses modern methods, employing video projection, diagrams, using examples from the medical literature, depicting positive and negative aspects of scientific research   |
| Seminars          | Seminars are interactive and foster student involvement in debates on various types of papers. Students also participate in interactive computer work for learning modern methods of online documentation and appropriate statistical methods. Seminars also aim at stimulating students' curiosity for scientific research by presenting various types of medical studies and the methodology involved |
| Individual study  | Individual study prior to, during and after the seminar   |

### 11. CLASS RECOVERY SCHEDULE

|  | Number of absences that can be recovered | Location                     | Scheduling   | Academic staff in charge | Scheduling of topics                                  |
|--|--|------------------------------|--|--------------------------|---|
| Absence recovery schedule                                | 5  | Official department location | The last two weeks of the semester, Wednesday and Thursday | Lecturer Roxana Cruce    | = based on the specific seminars to be recovered      |
| Schedule for consultations / Students' Scientific Circle | 2h                                       | Official department location | Friday   | Lecturer Roxana Cruce    | = based on students' requests                         |
|  | 2h                                       | Building A                   | Thursdays - monthly  | Lecturer Roxana Cruce    | - Scientific research and humanism in health sciences |
| Program for poorly trained students                      | 2h                                       | Official department location | Wednesday  | Lecturer Roxana Cruce    | = based on students' needs                            |

### 12. ASSESMENT

| Activity | Types of assessment | Methods of evaluation | Percentage of the final |
|----------|---------------------|-----------------------|-------------------------|
|----------|---------------------|-----------------------|-------------------------|

|   |   |  |                       |
|---|---|--|-----------------------|
|   |   |  | <b>grade</b>          |
| <b>Course</b>   | <i>Formative assessment</i> through essays, projects and surveys during the semester<br><i>Summative assessment</i> during the exam   | Multiple Choice Questions (MCQ) Answering System - using the University Student Platform in the online version | 50%                   |
| <b>Seminars</b>   | <i>Formative assessment</i> through Multiple Choice Questions (MCQ) or/and descriptive projects, surveys, active participation in class, periodic assessment during the semester<br><i>Summative assessment</i> during the exam | Multiple Choice Questions (MCQ) Answering System - using the University Student Platform in the online version | 30%                   |
| <b>Periodic evaluation</b>  |   |  | 10%                   |
| <b>Course attendance</b>  |   |  | 10%                   |
| <b>13. GUIDANCE AND COUNSELLING PROGRAMS</b>                            |   |  |                       |
| <b>Professional guidance and counselling programs (2 hours/monthly)</b> |   |  |                       |
| <b>Scheduling</b>   |   | <b>Location</b>  | <b>In charge</b>      |
| Last Friday of each month   |   | Official Discipline location   | Lecturer Roxana Cruce |

Endorsement date in the department: 28.09.2022

Department Director,  
Prof. univ. dr. Cristin VERE

Coordinator of study program,  
Prof. univ Dr. Marius-Eugen CIUREA

Discipline holder,  
Lecturer Roxana CRUCE