



UNIVERSITÀ DEGLI STUDI DI PALERMO

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| DEPARTMENT | Biomedicina, Neuroscienze e Diagnostica avanzata | | |
| ACADEMIC YEAR | 2023/2024 | | |
| MASTER'S DEGREE (MSC) | DIAGNOSTIC TECHNICAL HEALTH PROFESSIONS | | |
| INTEGRATED COURSE | STATISTICS, EPIDEMIOLOGY AND BIOETICS - INTEGRATED COURSE | | |
| CODE | 22314 | | |
| MODULES | Yes | | |
| NUMBER OF MODULES | 3 | | |
| SCIENTIFIC SECTOR(S) | MED/42, MED/02, MED/01 | | |
| HEAD PROFESSOR(S) | MATRANGA DOMENICA | Professore Ordinario | Univ. di PALERMO |
| OTHER PROFESSOR(S) | TRAMUTO FABIO MATRANGA DOMENICA CRAXI' LUCIA | Professore Associato Professore Ordinario Ricercatore a tempo determinato | Univ. di PALERMO Univ. di PALERMO Univ. di PALERMO |
| CREDITS | 7 | | |
| PROPAEDEUTICAL SUBJECTS | | | |
| MUTUALIZATION | | | |
| YEAR | 1 | | |
| TERM (SEMESTER) | 1° semester | | |
| ATTENDANCE | Mandatory | | |
| EVALUATION | Out of 30 | | |
| TEACHER OFFICE HOURS | CRAXI' LUCIA Monday 9:30 11:30 DIBIMED. Sezione di Patologia Generale Corso Tukory, 211 MATRANGA DOMENICA Friday 12:00 13:30 Stanza della docente, Dipartimento di Promozione della Salute, Materno-Infantile, Medicina interna e specialistica di eccellenza "G. D'Alessandro", Via del Vespro, 133, piano terra TRAMUTO FABIO Monday 14:00 16:00 Dipartimento di Promozione della Salute, Materno-Infantile, Medicina Interna e Specialistica di Eccellenza "G. D'Alessandro"AOUP "P. Giaccone" Via del Vespro, 133Piano terra Wednesday 14:00 16:00 Dipartimento di Promozione della Salute, Materno-Infantile, Medicina Interna e Specialistica di Eccellenza "G. D'Alessandro"AOUP "P. Giaccone" Via del Vespro, 133Piano terra Friday 14:00 16:00 Dipartimento di Promozione della Salute, Materno-Infantile, Medicina Interna e Specialistica di Eccellenza "G. D'Alessandro"AOUP "P. Giaccone" Via del Vespro, 133Piano terra | | |

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| PREREQUISITES | The student must have the skills and knowledges required to overcome the admission test. |
| LEARNING OUTCOMES | <p>Knowledge and ability to understand At the end of the course, students will need to demonstrate:</p> <ul style="list-style-type: none"> • knowledge and ability to understand both observational and experimental study design; • knowledge and understanding of molecular methods applied to epidemiology and supporting technologies • knowledge and ability to understand the statistical methodologies necessary for the analysis of data resulting from a clinical and epidemiological study • Knowledge and understanding of the main ethical approaches and the most relevant ethical issues in the biomedical field • Awareness of the relevance of the patient, his experience and the care function of the hospital, in line with the basic principles of medical ethics <p>Ability to apply knowledge and understanding</p> <p>At the end of the course, students will be able to read and interpret critically the most relevant scientific literature in the clinical and epidemiologic field, they will have analytical, synthesis and argument ability, and critical and connecting capabilities, related to treated issues. Thus, they will be able to make evidence-based decisions related to the organization and management of health services provided by staff with technical health functions of the medical area</p> <p>Students will also be able to master the essential tools to independently develop an ethical assessment on a biomedical issue, applying one of the ethical approaches studied.</p> <p>Making judgements</p> <p>At the end of the course, students will be able to judge autonomously the methodological correctness of a clinical or epidemiologic study and the appropriateness of molecular methods applied to epidemiology and supporting technologies. Finally, students will be able to independently assess the validity of an ethical judgment on a morally relevant issue in medicine</p> <p>Communication skills</p> <p>Students will be able to communicate the results of a clinical or epidemiological study using the specific language of medical statistics. In addition, they will be able to communicate molecular methods applied to epidemiology and supporting technologies. Finally, students will acquire the ability to constructively confront ethical problems in the biomedical field by arguing appropriately</p> <p>Learning capacity</p> <p>Students will build their ability to keep themselves up-to-date by reading the most important scientific national and international publications, which use rigorous statistical methods. They will gain a wealth of knowledge that they could use to attend profitably post-graduate education courses.</p> <p>Students will be able to follow the bioethical debate in medicine and to update independently, using the most reliable resources made available by the institutions operating in this field.</p> |
| ASSESSMENT METHODS | <p>Semi-structured exam articulated as:</p> <p>Medical Statistics: Oral exam. Starting from a scientific article chosen by the student, the student will have to answer at least two open questions asked orally, which concern different parts of the program, with reference to the recommended texts and teaching materials provided. The exam is completed by an Excel practical that the student will solve as interim test.</p> <p>Epidemiology and Bioethics: Oral exam. The student will have to answer at least two open questions for each module asked orally, which concern different parts of the program, with reference to the recommended texts and teaching materials provided. The final test aims to assess whether the student has knowledge and understanding of the topics, has acquired interpretative competence and autonomy of judgment. For Bioethics, there is an interim test, too.</p> <p>The assessment is done according to the following scheme: A – A+ (Excellent)=30-30 cum laude=Excellent knowledge of teaching contents; students should show high analytical and synthetic capabilities and should be able to apply their knowledge to solve highly complex problems. B (Very good)=27-29=Very good knowledge of the teaching contents and excellent language control; students should show analytical and synthetic skills and be able to apply their knowledge to solve problems of medium and, in some cases, even higher complexity. C (Good)=24- 26=Good knowledge of teaching contents and good language control; the students should be able to apply their knowledge to solve problems of medium complexity D (Satisfactory)=21-23=Average knowledge of the teaching contents, in some cases limited to the main topic; acceptable ability to use the specific discipline</p> |

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| | language and independently apply the acquired knowledge. E (Sufficient)=18-20=Minimum teaching content knowledge, often limited to the main topic; modest ability to use the subject specific language and independently apply the acquired knowledge. F (Fail)=1-17=Lack of an acceptable knowledge of the main teaching content knowledge; very little or no ability to use the specific subject language and apply independently the acquired knowledge. |
| TEACHING METHODS | Teaching is based on lectures and practice, and interactive teaching methodologies with the analysis of case histories, all supported by slides and materials provided by teachers. |

**MODULE
GENERAL AND APPLIED HYGIENE**

Prof. FABIO TRAMUTO

SUGGESTED BIBLIOGRAPHY

Rothman Kenneth J, Epidemiologia, Idelson-Gnocchi, ISBN-13: 978-8879474580
 Weiss NS, Exercises in Epidemiology, Oxford University Press, ISBN-13: 9780190651510

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| AMBIT | 20425-Scienze del management sanitario |
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| INDIVIDUAL STUDY (Hrs) | 51 |
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| COURSE ACTIVITY (Hrs) | 24 |
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EDUCATIONAL OBJECTIVES OF THE MODULE

The purposes of this module are:

- a) to outline the fundamentals of epidemiological data analysis and interpretation.
- b) to discuss the theoretical aspects of technics in molecular epidemiology.

SYLLABUS

| Hrs | Frontal teaching |
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| 4 | Epidemiological studies: cross-sectional studies, case-control studies, cohort studies |
| 4 | Epidemiological data sources and sampling strategies. Epidemiological bias and confounding factors. |
| 4 | Molecular methods applied to epidemiology. Molecular epidemiology of infectious and chronic diseases |
| 4 | Technologies in support of molecular epidemiology and surveillance systems |
| 4 | Elements of molecular evolution. Nucleic acids searches in international databases. Multiple alignment: algorithm Application of major epidemiological study models, analysis and interpretation of results. |
| 4 | Calculation and interpretation of measures of morbidity (incidence and prevalence). Calculation and interpretation of association measures in epidemiology (odds ratio, relative risk and attributable risk). Reading and interpretation of methods and results presented in scientific articles of specialized journals |

**MODULE
STATISTICS FOR EPIDEMIOLOGY AND RESEARCH**

Prof.ssa DOMENICA MATRANGA

SUGGESTED BIBLIOGRAPHY

Triola MM Triola MF Roy J, Fondamenti di Statistica per le discipline biomediche, Ed Pearson, II Edizione

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| AMBIT | 20414-Scienze statistiche e demografiche |
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| INDIVIDUAL STUDY (Hrs) | 34 |
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| COURSE ACTIVITY (Hrs) | 16 |
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EDUCATIONAL OBJECTIVES OF THE MODULE

The course aims to present the statistical methods that can be used to make evidence-based decisions regarding the organization and management of health services provided by staff with technical health functions of the medical area. The topics include the understanding of statistical methods needed to produce robust evidence from observational and experimental studies

SYLLABUS

| Hrs | Frontal teaching |
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| 2 | Introduction of the basic concepts of medical statistics |
| 4 | Analyse the results of a clinical study I: Statistical hypothesis tests and confidence intervals on two means and on two frequencies |
| 4 | Analyse the results of a clinical study II: Proportions, Odds and Risk. Statistical tests of association |
| 4 | Validation of diagnostic tests through accuracy and precision measures |
| Hrs | Practice |
| 2 | Statistical analysis of data using Excel |

**MODULE
BIOETHICS**

Prof.ssa LUCIA CRAXI'

SUGGESTED BIBLIOGRAPHY

Mori M. Introduzione alla Bioetica. 12 temi per capire e discutere. Torino: Espress edizioni; 2012; ISBN-10: 8878893056
ISBN-13: 978-8878893054

O in alternativa Viafora C. Introduzione alla bioetica, Milano: Franco Angeli; 2012; ISBN-10: 8846472624
ISBN-13: 978-8846472625

Il materiale andra' integrato con gli appunti e con i materiali forniti nel corso delle lezioni.

The material will be integrated with the notes and with the materials provided during the lessons.

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| AMBIT | 20426-Scienze umane, psicopedagogiche e statistiche |
| INDIVIDUAL STUDY (Hrs) | 34 |
| COURSE ACTIVITY (Hrs) | 16 |

EDUCATIONAL OBJECTIVES OF THE MODULE

To master the essential tools for developing a bioethical assessment, ie introducing an understanding of the main ethical approaches and moral visions that have crossed the history of philosophy and culture. To promote the development of the human and professional qualities of health workers.

To Acquire awareness of the relevance of the patient, his experience and the care function of the hospital, in line with the basic principles of medical ethics.

SYLLABUS

| Hrs | Frontal teaching |
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| 1 | Man as object or subject of the medical act? The Medical Humanities |
| 1 | Origins of Bioethics and its diffusion. Potter and Hellegers. Definitions of Bioethics |
| 2 | Ethical Frameworks: values and principles. Main methods of ethical analysis |
| 1 | Ethical frameworks. Ethics of the sacredness of life and ethics of quality of life |
| 1 | History of informed consent in clinical trials. Nuremberg Code, Declaration of Helsinki, Belmont Report |
| 2 | Informed consent in clinical practice and principle of autonomy. History of the assertion of informed consent and critical issues. Interruption of life-sustaining treatments. |
| 1 | Advance treatment provisions and treatment planning: the law 219/2017 |
| 1 | Allocation of resources in health and health rights |
| 1 | Access criteria for transplants |
| 1 | Ethics of ageing and palliative care |
| 2 | End of life issues: euthanasia and assisted suicide |
| 2 | Voluntary interruption of pregnancy |