Professionalism, Bioethics and History of medicine

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Year/Semester: Year 1, Semester 2

Credits 4

OVERVIEW OF THE COURSE

The course Professionalism, Bioethics and History of Medicine aims to offer future medical doctors an introduction to some fundamental aspects of medical practice.

In the MEDTEC medical program, future doctors will combine clinical competences, with the ability to use a breadth and depth of knowledge and resources, including those of technology and engineering, to then be put at the service of advanced medicine. Nevertheless, medicine is and will always remain a human matter, practised by human beings and addressed to other human beings.

Considering this premise, through the lens of history of medicine students will understand how medical scientific thought has developed, and how serious health problems and diseases have been dealt with, offering the opportunity to reflect on strategies to solve problems on which medical practice is still based today. On the other side, because medicine is meanly a *way of being*, the lens of bioethics and pedagogy will help students to reflect on the fact that every human action on another human involves adherence to principles and values.

Textbooks and Articles

History of Medicine

The Cambridge History of Medicine by Roy Porter 2011

Blood and Guts: A History of Surgery by Richard Hollingham 2016

Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again

By Eric Topol 2019

Slides and articles provided directly by the Professor on the LMS

Bioethics
Selected parts of:
- A. Campbell (2017), Bioethics, Routledge
- I. van de Poel, L. Royakkers (2011), Ethics, technology, and engineering: An introduction, Wiley-Blackwell

Scientific papers made available by the Professor.

Pedagogy

General issues related to medical professionalism can be found on:
- Pellegrino E., (2002), "Professionalism, Profession and the Virtues of the Good Physician", The Mount Sinai Journal of Medicine Vol. 69 No.6
- Cruess R.L., S. R. Cruess, "The cognitive base of Professionalism" in Cruess R.L., Cruess S. R., Steinert, Y. Teaching medical Professionalism, Cambridge, 2009 – Chapter 1,2,3
- Cruess R.L., Cruess S.R., Boudreau J.D, Snell L., Steinert Y, (2014), "Reframing Medical Education to Support Professional Identity Formation", Academic Medicine, Nov 89(11); pp. 1146-51
- Wynia M.K. et al., More than a list of values and desired behaviours: a foundational understanding of medical professionalism, Academic Medicine, 2014; 89: pp. 712-714
- Montagna L., Consorti F., Medical professionalism e costruzione dell'identità professionale negli studenti di medicina. Franco Angeli Milano, 2022

Teaching Methods
The course offers lectures, seminars with experts and an interdisciplinary group work that will take place in two steps (23 March and 8 May).

The aim of the group work (which will be presented in detail during the lecture on 23 March) is the preparation of a presentation that each group will make in class (8 May) on topics related to the 3 course modules. Each group will be assigned a topic, consisting of some specific reflective questions and a minimum reference bibliography. The lecturers will be on hand to supervise group work and presentation.

The group presentation is preparatory to the individual work (individual essay) that is required of each student in order to pass the examination and which must take into account the suggestions provided by the lecturers following the in-class presentation.

Assessment

In addition to the group presentation in class on 8 May, the examination will consist of a written essay (max. 1500 words) in which each student individually presents the topic analyzed during the group work and presented in class. The essay must be a personal synthesis of what was elaborated during the group work.

The final examination grade will include an assessment of the group work and the written essay.

Lecturers will be available to supervise the process in person or by email.

The assessment criteria for both the presentation and the essay will concern:

- Clarity of presentation of the problem
- Logical structure of the argumentation
- Presence of literature supporting what is stated and discussed in the essay.
- Capacity for analysis and reflection

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GENERAL OVERVIEW AND GENERAL LEARNING OUTCOMES OF THE MODULES

History of medicine (prof. Giovanni Capretti)

The module of History of medicine focuses both on the human aspects (patients and doctors) and on the med-tech aspects (technological discoveries) that in the past centuries have affected medical progress, leading to the current concepts of Medicine and Health in modern times. This module, therefore, focuses on the understanding of how the available knowledge, sociological background and availability of instrument/technology have changed the way of reasoning and practise of doctor through time. The module will focus on the people, on the facts and technical, ethical, and cultural aspects of the different medical eras.

General Learning Outcomes:

- Present key discoveries that gave birth and shaped medicine as an art and as a science as we know it today.

- Confront which aspects of being a medical doctor had changed, had fortunately or unfortunately been lost through time and which had remained the same over the centuries.
- Illustrate the evolution process of Medicine over the centuries and how this has impacted the present concept of medicine.
- Describe how technology and engineering have contributed to medical advances.
- Discuss how discoveries have moved from empirical observations to methodological research.
- Discuss the thinking process that led to a breakthrough in healthcare in history and how this could be applied in present and future challenges.
- Discuss how ethical approach and doctor-patients relationship had changed through time. Starting from this analysis improve our understanding the actual scenario and lay the foundations for the improvement of our own ethical and interaction models.

MODULE OF BIOETHICS (prof. Viola Schiaffonati)

The module of Bioethics deals with the application of ethical theories to problems created, aggravated, or transformed by biomedical and health technologies. It aims to give students a chance to reflect on the ethical, social, and cultural impact of these technologies and the associated practices. The course focuses on theories and issues at the intersection of medical and biological ethics and ethics of technology and engineering.
The module includes lectures by the instructor and students' discussions; class participation is expected, and students should apply what they learn through reading and lectures by looking at current events through an ethical lens.

General Learning Outcomes:
- Acquire a broad perspective on the ethical impacts and implications of problems in health care and biomedical sciences.
- Be acquainted with normative ethics through the critical analysis of paradigmatic case studies.
- Learn how to recognize and analyse ethical aspects inherent in health and biomedical sciences.
- Be able to use critical skills in clarifying and ethically analysing case-studies and to apply ethical theories to problems created, aggravated, or transformed by digital technologies in health care and biomedical sciences.
- Analyse the ethical issues of a technology.
- Present in an effective way the results of their independent research, being able to justify their choices.

- Present in an effective way the results of their independent research, being able to justify their choices.
- Be better prepared for their future professional life in an ethically and socially responsible way.
- Be able to analyse problems through an ethical lens.

MODULE OF GENERAL PEDAGOGY (prof. Licia Montagna)

The module of Pedagogy will offer an insight into the nature of medical professionalism and stimulate from the start of the journey an awareness of the human aspect of medical practice, offering students their first opportunity to think on the call to becoming doctors.

General Learning Outcomes:
- Present the cognitive knowledge of medical Professionalism, its attributes, and values and be able to recognize and reflect on professional and unprofessional behavior.
- Discuss the main characteristics of teamworking and the role of leadership.
- Discuss the main medical approaches in the healthcare system and how they influence doctor-patient relationship.
- Discuss some issues related to medical Professionalism such as: social media, data interpretation, innovation technologies.
- Reflect on the issue of death and dying from personal to professional perspective.

COURSE STRUCTURE

Introduction to the course (presentation)

History of medicine (lecture): From the beginnings to modern medicine, the role of the doctor

The lesson will be a brief journey into the History of Medical thinking. It will focus on the most important medical figures in history and illustrate how they have contributed to the development of Medicine their role in the society and their philosophical approach to the discipline. The birth of specializations and its effect on the role of medical practitioners. The lesson will also explain how the past still permeates present times.

- Describe the historical background where the important medical figures in history grew and how their ideas had change history and medicine.
- Discuss important key discoveries and facts from the past still relevant today.

- Discuss the links with the past of aspects and traditions in modern medicine.

History of medicine (lecture): Evolution of surgery, overcoming the obstacle with science technology and friends.

The lesson will be a journey into the timeline of surgery with its intimate correlation with technological inventions (engineering) that changed medicine and human health in modern times. Starting from the Middle Ages and fast pacing with the enlightenment, technology has given a continuous opportunity for medicine to evolve. We will focus of the major aspects that hinder the spread of surgical procedure and that thousands of years after still affect this specific field.

- Describe key breakthrough technological discoveries in surgery.
- Discuss how technological progress has impacted human life, healthcare systems, and the bilateral relationship between progress and health.
- Discuss how the advent of new technology and scientific concepts had changed the role of the surgeons and their interaction with colleagues.
- Understand the change from one-man show to the multidisciplinary approach one of its more stenographic scenarios.

Bioethics (lecture): Introduction to Bioethics and the concept of values

The lesson will introduce students to Bioethics, engineering ethics and digital bioethics, ethical and social issues at the intersection of biomedicine and engineering. Students will be introduced to the difference between Ethics and Morality and the concept of *moral dilemmas* and *ethical issues* in biomedical research, patient care, and public health. All issues will be discussed in the light of the main ethical normative theories.

Bioethics (lecture): The concept of Responsibility

Through specific case-studies students will be introduced to the concept of responsibility; they will discuss the difference between passive and active responsibility; they will reflect on active responsibility and the ideals of medicine and engineering.

General Pedagogy (lecture): Medical Professionalism

The aim of the lesson is to introduce students to the cognitive base of medical professionalism and stimulate a personal reflection on their values and beliefs related to those of medicine.

- Be aware of the professional core values of medical profession.
- Be able to define and discuss the concept of medical professionalism.
- Be able to apply medical professionalism to some cases picked out from the GMC situational judgement tests.

1st workshop presentation of the assignment and of the group organization

History of medicine (lesson): The "Hearth" of evolution, from the adoption of the epidemiology by cardiologist, through the transplant, to the technological birth of interventional cardiology.

The lesson will give an overview how scientific and technological progress can transform the role of a doctor, changing his/her perspective, his/her interaction with colleagues, patients, and society.

- Understand how a profession can dramatically change his nature through time affected by scientific and technological advancement. Understand the delicate interaction between doctors, specialists, and patients and how it can change through time and technological advancement.

General Pedagogy (lecture): Teamworking
Doctors should be able to lead teams, motivate their clinical decisions and communicate with different health professionals for the interest of the patient. To achieve this learning outcome, a part of the module will be focused on group work and its characteristics and strategies.
Learning outcomes
- Discuss the process of team building and its stages.
- Define interdependence and its importance in group work.
- Describe the characteristics of an effective or ineffective group work.
- Identify and reflect on personal social and interpersonal skills in a practical experience of collaborative learning group.

General Pedagogy (lecture): Different approaches in Doctor- Patient relationship
Doctors should always be able to understand and interpret a disease that "belongs" to a human being, who will live and talk about his/her disease starting from his/her perspective and perception (illness). Doctors should also be able to work with other colleagues and health

professionals (nurses, physiotherapists…). This 'delicate' processes of interpretation, interaction and interdependence with other people and other points of view, start from the ability to manage challenging situations and adapt our own behaviour to different contexts.

- Define the Biomedical, the Bio-Psycho-Social Model and the Patient Centred Model of Medicine
- Explain why the need for a new model of medicine was perceived at the end of the 1970s (according to Engel's perspective)
- Define the concepts of Disease, Illness and Sickness
- Explain the aims and the roles of both the patient and the Doctor in a disease centred and patient centred medical interview.

Bioethics (lecture): The concept of Privacy

The lesson will discuss *informational* and *constitutional privacy*; the issue of "privacy as an individual good" and "privacy as a social good". Students will reflect on some privacy issues in biomedical research, patient care and public health and relevant governance approaches.

Bioethics (lecture): The concept of Justice

The lesson will deal with social and distributive justice in public health ethics, discussing fair access, the paradox of health care and global inequality in the digital era.

General Pedagogy (lecture): Professionalism and social media

- Present the use of social media in the medical environment and in relation to doctor's job.
- Acquire awareness on cognitive bias in data interpretation from social media.
- Encourage a personal reflection on a mindful use of social media in relation to medical professionalism.

General Pedagogy (lecture) An introduction to A.I. and its use in medicine

- Discuss the basic principles of A.I.
- Discuss some applications of A.I. in medical practice.

History of medicine (lecture): The evolution of medical knowledge diffusion from oral transmission to "Doctor Google"

These lessons will focus on how medical knowledge has evolved not only in its content but also in its diffusion. The lesson will give an overview on the organization, the function and the

importance of Hospitals, Medical Schools, and Medical Universities along the History of Medicine. It also will deal with the broader diffusion of medical information thorough social, mass media, dedicated service, web, peer reviewed journals and open access.

- Discuss the evolution from the diffusion of medical knowledge.
- Discuss the peculiar relationship between medical information, society, mass media and public opinion.
- Discuss the importance of external influence of scientific production trough time.
- Understand how the transformation of the medical knowledge spreading had change the doctor-patients relationship.

2nd workshop presentation of the group work

A reflection on Death and Dying through Humanities
- Reflect on patient's end-of-life experience.
- Reflect on personal values, thoughts, emotions in dealing with the process of care and caring a dying patient.
- Identify professional and unprofessional effective caring behaviour in dying patients.