[Medicinski fakultet u Rijeci]

**Curriculum**
**2022/2023**

[Za kolegij]

# Medical Physics and Biophysics

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|---|---|
| Study program: | **Medical Studies in English (R)**<br>[Sveučilišni integrirani prijediplomski i diplomski studij] |
| Department: | **[Katedra za medicinsku fiziku i biofiziku]** |
| Course coordinator: | **prof. dr. sc. Žauhar Gordana, prof. fizike i kemije** |
| Year of study: | **1** |
| ECTS: | **6** |
| Incentive ECTS: | **0 (0.00%)** |
| Foreign language: | **Possibility of teaching in a foreign language** |

## Course information:

Medical Physics and Biophysics is an introductory course, which gives students an insight into the physical principles required for a better understanding of processes in other fields, such as anatomy, biochemistry, physiology, histology, pathology, etc. The purpose of this course is to motivate students to use the analytical and quantitative approach in the research of human body functions.
COURSE STRUCTURE
Lectures: 30 hours
Seminars: 20 hours
Practicals: 25 hours
Total hours: 75

The lectures and practicals will be held at the University Campus on Trsat at the Faculty of Physics (Address: Radmile Matejčić 2, 51000 Rijeka).
During practicals, students will develop abilities and skills in using various measuring devices, which are a part of different medical devices. Upon completing this course, students will be able to collect data, critically evaluate and interpret the results, as well as correctly use the International System of Units and Measurements in medicine.

## List of assigned reading:

I.P. Herman. Physics of the Human Body, Springer, Berlin, 2016

## List of optional reading:

R. K. Hobbie, B.J. Roth. Intermediate Physics for Medicine and Biology, Springer, New York, 2015

## Curriculum:

## Student obligations:

The attendance at lectures, seminars and practicals is mandatory. If necessary, a student can be absent from 30% of the classes of the overall course workload but has to make up for the practicals he/she failed to attend. Students' obligations are course attendance and active participation in all practicals and seminars.

Throughout the course, students have two midterm exams (tests) consisting of 14 questions each.
Test 1 covers the topics presented in seminars 1-5.
Test 2 covers the topics presented in seminars 6-10.

The completion and proper documentation of each practical as well as the consent of the course instructor are required for course completion.

Evaluation of students' work:
Students can obtain a total of 100 credits (a maximum of 50 credits during the course and a maximum of 50 credits on the final exam). Students are allowed to take the final exam if they acquire a minimum of 25 credits during the semester.
Students who did not gain 50% on each midterm exam may retake their midterm exams. A student can repeat the mid-term exam a maximum of two times, and if he/she still does not pass it, he/she must re-enrol for the course.

On the final exam, students can obtain a maximum of 50 credits. The final exam is oral.

## Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):

**Assessment (exams, description of written / oral / practical exam, the scoring criteria):**

| | Assessment | Grade Point Maximum |
|---|---|---|
| **Midterm Exams** | Midterm 1 (14 questions) | 14 |
| | Midterm 2 (14 questions) | 14 |
| | **total** | **28** |
| **Practicals** | Accepted practicals and reports<br>10 x 5 x 0.4 credits | 20 |
| | **total** | **48** |
| **Active participation** | Active participation during seminars | **2** |
| **TOTAL** | | **50** |
| **Final exam** | Oral part | 50 |
| | **total** | **50** |
| **TOTAL** | | **100** |

Partial exams:
Two midterm exams are scheduled during the trimester.
1. Midterm exam. 14 questions
2. Midterm exam. 14 questions

**Practicals:**
Throughout 10 practicals a student can obtain a maximum of 20 credits.
Each completed and accepted practical is assessed. A student may miss a maximum of two practicals, which he/she must make up in order to fulfil the requirements for taking the final exam.

**Active participation during seminars:**
During the trimester student participation and dedication will be monitored. A maximum of 2 points is awarded through active participation.

**Final exam:**

The final exam is oral.

**Assessment of the oral part of the final exam:**

| Grade on oral exam | Credits |
|---|---|
| sufficient | 10-20 |

| | |
|---|---|
| good | 21-30 |
| very good | 31-40 |
| excellent | 41-50 |

**Assessment of the oral part of the final exam:**

| Grade on oral exam | Credits |
|---|---|
| sufficient | 10-20 |
| good | 21-30 |
| very good | 31-40 |
| excellent | 41-50 |

The ECTS grading system is defined by the following criteria:

A (5) – 90 - 100 credits

B (4) – 75 - 89,9 credits

C (3) – 60 - 74,9 credits

D (2) – 50 - 59,9 credits

### Other notes (related to the course) important for students:

Retaking the course: A student who acquires less than 25 credits during the course has failed the course, is graded with F, and must retake the course MEDICAL PHYSICS AND BIOPHYSICS.

### COURSE HOURS 2022/2023

Medical Physics and Biophysics

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### List of lectures, seminars and practicals:

### EXAM DATES (final exam):

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