



Çanakkale Onsekiz Mart University

Education Information System

DEGREE PROGRAMMES

BOLOGNA

THE INSTITUTION

INFO FOR STUDENTS

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Course Information

COURSE INFORMATION

| Course Title | Code | Semester | L+U Hour | Credits | ECTS |
|----------------------|--------|-------------|----------|---------|------|
| Radyoteraphy Physics | FZK456 | 8. Semester | 2 + 2 | 3.0 | 8.0 |

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|----------------------|------|
| Prerequisites | None |
|----------------------|------|

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|---------------------------------|---|
| Language of Instruction | Turkish |
| Course Level | Bachelor's Degree (First Cycle) |
| Course Type | Elective |
| Mode of delivery | Face to face |
| Course Coordinator | Assoc. Prof. Dr. Emine Dilara AYDIN |
| Instructors | |
| Assistants | |
| Course Objectives | This course aims to teach basic techniques of radiotherapy and instruments, planing of therapy, simulation, immobilization, dose calculation, isodose curves, the role of physist in radiotheraph team and importance of team work |
| Course Content | Basic biology of cancer, mutagens and their mechanisms and effects, Classification of tumors, Radiobiology, Basic radiation physics, radiation units, The aim in radiotherapy, Radiotherapy team and the role of the physicist in the team, Target volume and volume of radiotherapy concepts, The purpose of the simulation tools, and simulators immobilization, treatment planning systems, Fractionation, izodoz curves and calculating, Bolus, compensators intended uses, Target of radiotherapy, Forms of radiotherapy used in the treatment, Eksternel and internel radiotherapy techniques, According to Energy ekstrenal radiotherapy devices, Radioactive sources used in brachitherapy, New methods in radiotherapy / IMRT, sterotaktik radiotherapy, gamma knife |
| Course Learning Outcomes | <ol style="list-style-type: none"> 1) Biology of cancer 2) The role of physist in radiotheraph team and importance of team work 3) Basic techniques of radiotherapy 4) Instruments, planing of therapy, simulation, immobilization, dose calculation, isodose curves. 5) Informed on new methods in radiotherapy |

Quick Access

Physics

- Qualification Awarded
- Level of Qualification
- Qualification Requirements and Regulations
- Specific Admission Requirements
- Recognition of Prior Learning
- Profile of the Program
- Program Key Learning Outcomes
- Occupational Profile of Graduates
- Access to Further Studies
- Course Structure & Credits
- Exam Regulations & Assessment & Grading
- Graduation Requirements
- Mode of Study
- Programme Director(or Equivalent)
- Evaluation Questionnaire
- TYYÇ

Course Information

- Course Information
- Weekly Course Content
- Resources
- Course Category
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

WEEKLY COURSE CONTENT

| Week | Topics | Teaching and Learning Methods and Techniques | Study Materials |
|---------|--|---|-----------------|
| 1. Week | Basic biology of cancer, mutagens and their mechanisms and effects | Oral lectures with interactive discussions, homeworks | |

| | | | |
|----------|--|---|--|
| 2. Week | Classification of tumors | Oral lectures with interactive discussions, homeworks | |
| 3. Week | Radiobiology | Oral lectures with interactive discussions, homeworks | |
| 4. Week | Basic radiation physics, radiation units | Oral lectures with interactive discussions, homeworks | |
| 5. Week | The aim in radiotherapy, Radiotherapy team and the role of the physicist in the team | Oral lectures with interactive discussions, homeworks | |
| 6. Week | Target volume and volume of radiotherapy concepts | Oral lectures with interactive discussions, homeworks | |
| 7. Week | The purpose of the simulation tools, and simulators immobilization, treatment planning systems | Oral lectures with interactive discussions, homeworks | |
| 8. Week | Fractionation, izodoz curves and calculating | Oral lectures with interactive discussions, homeworks | |
| 9. Week | Bolus, compensators intended uses | Oral lectures with interactive discussions, homeworks | |
| 10. Week | Target of radiotherapy | Oral lectures with interactive discussions, homeworks | |
| 11. Week | Forms of radiotherapy used in the treatment | Oral lectures with interactive discussions, homeworks | |
| 12. Week | Eksternal and internal radiotherapy techniques, According to Energy ekstrenal radiotherapy devices | Oral lectures with interactive discussions, homeworks | |
| 13. Week | Radioactive sources used in brachitherapy | Oral lectures with interactive discussions, homeworks | |
| 14. Week | New methods in radiotherapy / IMRT, sterotaktik radiotherapy, gamma knife | Oral lectures with interactive discussions, homeworks | |
| 15. Week | Review of the semester | Oral lectures with interactive discussions, homeworks | |
| 16. Week | Final exam | Exam | |

RESOURCES

| Recommended Sources |
|--|
| Radiation Therapy Physics, W. R. Hendee, G. S. Ibbott, E. G. Hendee, Wiley-Liss; 3 edition, 2004 |
| The Physics of Radiation Therapy; F. M. Khan, Lippincott Williams & Wilkins; 3rd edition, 2003 |

ASSESSMENT

Measurement and Evaluation Methods and Techniques

Mid-term exam, final exam, seminar, presentation, other

COURSE CATEGORY

| Course Category | Percentage |
|--------------------------------|------------|
| Area of Specialization Courses | % 100 |

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

| Programme Outcomes | Contribution Level | DK1 | DK2 | DK3 | DK4 | DK5 |
|--------------------|--------------------|-----|-----|-----|-----|-----|
| PY1 | 4 | 4 | 3 | 5 | 4 | 4 |
| PY2 | 4 | 5 | 3 | 4 | 4 | 3 |
| PY3 | 4 | 5 | 4 | 4 | 4 | 4 |
| PY4 | 0 | 4 | 4 | 4 | 4 | 4 |
| PY5 | 0 | 4 | 4 | 4 | 4 | 4 |
| PY6 | 4 | 3 | 5 | 4 | 4 | 4 |
| PY7 | 0 | 3 | 3 | 3 | 4 | 4 |
| PY8 | 0 | 4 | 4 | 5 | 5 | 5 |
| PY9 | 0 | 5 | 5 | 5 | 5 | 5 |
| PY10 | 0 | 5 | 5 | 5 | 5 | 5 |
| PY11 | 0 | 4 | 4 | 3 | 3 | 3 |
| PY12 | 0 | 3 | 4 | 4 | 4 | 4 |
| PY13 | 0 | 4 | 4 | 3 | 3 | 4 |
| PY14 | 0 | 4 | 4 | 4 | 4 | 4 |
| PY15 | 4 | 4 | 5 | 4 | 4 | 4 |

*DK = Course's Contribution.

| | 0 | 1 | 2 | 3 | 4 | 5 |
|-----------------------|------|----------|-----|------|------|-----------|
| Level of contribution | None | Very Low | Low | Fair | High | Very High |

ECTS CREDITS AND COURSE WORKLOAD

| Event | Quantity | Duration (Hour) | Total Workload (Hour) |
|---------------------------|----------|-----------------|-----------------------|
| Class Hours (14 weeks) | 14 | 4 | 56 |
| Presentation/Seminar | 1 | 1 | 1 |
| Final Exam Preparation | 1 | 21 | 21 |
| Mid Term Exam Preparation | 1 | 18 | 18 |
| Assignment 1 | 5 | 10 | 50 |
| Final Exam | 1 | 3 | 3 |
| Mid Term Exam 1 | 1 | 2 | 2 |
| Preliminary Study | 14 | 3 | 42 |

| | |
|----------------------------------|------|
| Total Workload | 193 |
| Total Workload / 25.5 (s) | 7.57 |
| ECTS Credit of the Course | 8 |

