

# PHY-M-VE 02

Effective WS 2011/2012 / Please also see remarks in item 13.

<b>1. Module title:</b>	<b>Physics in Medicine as Complementary Subject</b>
<b>2. Field / responsibility of:</b>	Faculty of Medicine, Dean of Studies, Prof. Dr. W. Bäumler
<b>3. Module contents:</b>	<p><b>Contents of the following courses:</b></p> <p>Lecture: Imaging Modalities in Diagnostic Radiology I (computer tomography, sonography, x-ray, nuclear medicine) (2 credit hours in WS)</p> <p>Lecture: Imaging Modalities in Diagnostic Radiology II (magnetic resonance) (2 credit hours in SS)</p> <p>Lecture: Physics of Radiation Oncology (2 credit hours in WS)</p> <p>Seminar: Methods and Applications in Radiation Therapy and Nuclear Medicine (2 credit hours in SS)</p> <p>Practicum: Visit to the department of radiation oncology – hands-on training (3 days) (2 credit hours in WS)</p> <p>Lecture: Medical Data Analysis I (2 credit hours in WS)</p> <p>Lecture: Medical Data Analysis II (2 credit hours in SS)</p> <p>Seminar: Medical Image Analysis (2 credit hours in WS)</p> <p>Seminar: Medical Time Series Analysis (2 credit hours in SS)</p> <p>Lecture: Optical Technologies in Medicine (2 credit hours in SS)</p> <p>Lecture: Laser Medicine (2 credit hours in WS)</p>
<b>4. Qualification objectives of the module / to be acquired:</b>	Acquiring a fundamental knowledge of the concepts and physical procedures in medical diagnostics and therapy
<b>5. Prerequisites for participation:</b>	
<b>a) Recommended knowledge:</b>	None
<b>b) Prerequisite courses:</b>	None
<b>6. Module can be used for:</b>	Master in Physics
<b>7. Module is offered:</b>	WS, SS
<b>8. Module can be completed in:</b>	2 semesters
<b>9. Recommended semester of study:</b>	1
<b>10. Overall module workload / number of credit points:</b>	<p><b>Workload:</b></p> <p><b>Total number of hours: 480</b></p> <p><b>Allocation:</b></p> <p><b>1. Attendance: 12 credit hours</b></p> <p><b>2. Independent study (including exam preparation / exam): 300 hours</b></p> <p><b>Credit points: 16</b></p>

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The successful completion of all assignments listed in items 11 and 12 is a prerequisite for receiving the credit points mentioned in item 10.

## 11. Module components:

No.	Req./req. elective	Form of teaching	Subject area/topic	Credit hours	Coursework
PHY-M-VE 0 2.1	Required elective	Lecture	Imaging Modalities in Diagnostic Radiology I (computer tomography, sonography, x-ray, nuclear medicine)	2	
PHY-M-VE 0 2.2	Required elective	Lecture	Imaging Modalities in Diagnostic Radiology II (magnetic resonance)	2	
PHY-M-VE 0 2.3	Required elective	Lecture	Physics of Radiation Oncology	2	
PHY-M-VE 0 2.4	Required elective	Seminar	Methods and Applications in Radiation Therapy and Nuclear Medicine	2	Presentation
PHY-M-VE 0 2.5	Required elective	Practicum	Visit to the department of radiation oncology - hands-on training (3 days)	2	
PHY-M-VE 0 2.6	Required elective	Lecture	Medical Data Analysis I	2	
PHY-M-VE 0 2.7	Required elective	Lecture	Medical Data Analysis II	2	
PHY-M-VE 0 2.8	Required elective	Seminar	Medical Image Analysis	2	
PHY-M-VE 0 2.9	Required elective	Seminar	Medical Time Series Analysis	2	
PHY-M-VE 0 2.10	Required elective	Lecture	Optical Technologies in Medicine	2	
PHY-M-VE 0 2.11	Required elective	Lecture	Laser Medicine	2	

## 12. Module exam:

No.	Competence / topic	Type of exam	Duration	Time / notes	Weighting of module grade
PHY-M-VE 0 2.1	Classes in the scope of 12 credit hours from required electives	Oral		Exam duration: 40 min. or twice 20 min., after successful participation in the module components	1

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### 13. Notes:

From the required electives, courses in the scope of at least 12 credit hours must be selected and completed. The oral module exam is conducted by two examiners (40 min.) or consists of two exams (20 min. each) held on one day.