UIN SUNAN KALIJAGA YOGYAKARTA
FACULTY OF SCIENCE AND TECHNOLOGY
Jl. Marsda Adisucipto Yogyakarta 55281, Telp:+62274519739, Fax:+62274540971,
E-mail: fst@uin-suka.ac.id, website: http://saintek.uin-suka.ac.id/

Undergraduate Programme in Physics

Telp : +62274 519739
Email : :fisika@uin-suka.ac.id
Website : http://fisika.uin-suka.ac.id/

MODULE HANDBOOK

Module Name	Dosimetry and Radiation Protection
Module level, if applicable	Bachelor
Code, if applicable	FIS425043
Subtitle, if applicable	-
Courses, if applicable	Dosimetry and Radiation Protection
Semester(s) in which the module is taught	5th (fifth)
Person responsible for the module	Anis Yuniati, M.Si., Ph.D.
Lecturer(s)	Anis Yuniati, M.Si., Ph.D.
Language	Indonesia
Relation to curriculum	elective course in the third year (5th semester) Bachelor Degree
Type of teaching, contact hours	150 minutes lectures and 180 minutes structured activities per week.
Workload	Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam
Credit points	3
Requirements according to the examination	Minimum attendance 75% All assignments submitted Attendance on time
Recommended prerequisites	Modern Physics, Atomic and Nuclear Physics (retrieve)
Module objectives/intended learning outcomes	After completing this course, the students: CO 1. Students are able to explain the types of radiation, quantities and units for radiation and the effects of radiation on the human body CO 2. Students are able to explain dosimetry techniques and the use of various radiation measuring instruments CO 3. Students are able to conduct internal and external dose assessments CO 4. Students are able to understand the stages that need to be done in conducting radiation protection and can design processes to reduce radiation hazards.
Content	1. Types of Radiation 2. Magnitude and Units of Radiation 3. Biological Effects of Radiation 4. Radiation Measurement Tools 5. Dosimetry Techniques 6. Internal Dose Assessment 7. External Dose Assessment 8. Basic Principles of Radiation Protection 9. Radiation Shielding 10. Radiation Exposure Regulation

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<table>
<tr><td></td><td>11. Radiation Waste Management and Decommissioning</td></tr>
<tr><td>Study and examination requirements and forms of examination</td><td>The final mark will be weighted as follows:
<table>
<tr><th>NO</th><th>Assessment methods (components, activities)</th><th>Weight (percentage)</th></tr>
<tr><td>1</td><td>Final Examination</td><td>40%</td></tr>
<tr><td>2</td><td>Mid-Term Examination</td><td>30%</td></tr>
<tr><td>3</td><td>Class Activities : Quiz, Homework, etc.</td><td>30%</td></tr>
</table>

The final assessment is expressed in the form of a letter value converted from a number value with the following categories:
<table>
<tr><th>NO</th><th>Number Value</th><th>Letter Value</th><th>NO</th><th>Number Value</th><th>Letter Value</th></tr>
<tr><td>1</td><td>≥ 95</td><td>A</td><td>7</td><td>65-69.99</td><td>B/C</td></tr>
<tr><td>2</td><td>90-94.99</td><td>A-</td><td>8</td><td>60-64.99</td><td>C+</td></tr>
<tr><td>3</td><td>85-89.99</td><td>A/B</td><td>9</td><td>55-59.99</td><td>C</td></tr>
<tr><td>4</td><td>80-84.99</td><td>B+</td><td>10</td><td>50-54.99</td><td>C-</td></tr>
<tr><td>5</td><td>75-79.99</td><td>B</td><td>11</td><td>55-34.99</td><td>D</td></tr>
<tr><td>6</td><td>70-74.99</td><td>B-</td><td>12</td><td><35</td><td>E</td></tr>
</table></td></tr>
<tr><td>Media employed</td><td>Whiteboard, markers, LCD projector, laser pointer, power point presentation, laptop/PC</td></tr>
<tr><td>Reading list</td><td>Main :

1. Alan Martin, Sam Harbison, Karen Beach, Peter Cole, An Introduction to Radiation Protection, Seventh Edition, CRC Press, Taylor & Francis Group, 2019
2. Michael G. Stabin, Radiation Protection and Dosimetry: An Introduction to Health Physics, Springer, 2007
3. Shani, Radiation Dosimetry: Instrumentation and Methods, 2nd Edition, CRC press, 2001

Support :

1. Claus Grupen, Introduction to Radiation Protection, Practical Knowledge for Handling Radioactive Sources, Springer-Verlag Berlin Heidelberg 2010
2. H. Attix, Introduction of Radiological Physics and Radiation Dosimetry, John Willey and Sons, New York, 1986</td></tr>
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PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1		√							
CO 2									√
CO 3									√
CO 4		√							√