



THE MODULE HANDBOOK

FACULTY OF BIOLOGY

Radiation Biology

Module code	BIO 40010
Module level	3 rd year of Undergraduate Program in Biology
Abbreviation, if applicable	-
Sub-heading, if applicable	-
Courses included in the module, if applicable	-
Semester/term	Odd and Even
Module coordinator(s)	Drs. Ign. Sudaryadi, M.Kes.
Lecture(s)	1. Drs. Ign. Sudaryadi, M.Kes. 2. Dr. Yekti Asih Purwestri, M.Si.
Language	Indonesia
Classification within the Curriculum	Elective course
Teaching format/class hours per week during the semester	This course is organized into one class and planned to have 14 teaching weeks and 2 weeks of examination.
Workload	Estimated working hour: 7 hours/week.
Credit points	2-0 credits
Requirements	Technical Biochemistry (BIO 40102)
Learning goals/competencies	<ol style="list-style-type: none">1. Have an understanding of the basic concepts of Radiation Biology.2. Have an understanding of the basic concepts of Atomic Physics.3. Have an understanding of the concepts of nuclear reaction.4. Know the methods used in analyzing the radioactivity of the cell / tissue / organ.5. Have an understanding of radiation safety.6. Have an understanding of the effect of radiation on biological systems.7. Have an understanding of radiosensitivity cells/tissue/organs.8. Able to analyze and interpret data from the measurement of radioactivity of a radioactive substance in order to determine the concentration of the compound in the material / sample experiments.



THE MODULE HANDBOOK

FACULTY OF BIOLOGY

	<ol style="list-style-type: none">9. Ability to make a more in-depth review of a radiation problems biologi or Radiobiology obtained from various kinds of information.10. Designing and design the equipment and room radiation biology laboratory that is safe for the safety of radiation workers.11. Ability to use ITC to obtain information on radiation biology research to be discussed12. Have a sense of concern on the ethical issues that arise in experiments with radiation biology applications.13. Have a great curiosity to the problems of radiation biology.
Content	<p>This course consist of five subjects, namely Introduction and Basic concepts of radiation biology, nucleus reactions (nuclear reaction), Radiation Safety, Effects of radiation on biological systems, network. Radiosensitivitas and factors that play a role in tissue radiosensitivitas and Application of Radiation Biology in everyday life. Lectures given by face-to-face methods (lectures), discussion groups and create a resume, presentation of results group discussions, exercises, quizzes and daily tasks, video playback, and independent tasks. This course consists of 12 subjects with the number of meetings 14-16 times per semester. After completing this course, students are expected to understand and explain the basic concepts of radiation biology, nucleus reactions (nuclear reaction), Radiation Safety, Effects of radiation on biological systems, network Radiosensitivitas and factors that play a role in radiosensitivitas network, and application fields Radiation Biology in everyday life.</p>
Study/exam achievements	<ol style="list-style-type: none">1. Midterm2. Final examination3. Assignment
Forms of media	White board, notebook, LCD
Literature	<ol style="list-style-type: none">1. Fuad Amsyari, 1989. Radiasi Dosis Rendah dan Pengaruhnya terhadap Kesehatan (Suatu pengantar terhadap proteksi radiasi). Penerbit Airlangga Univ. Press, Surabaya. 146 hal.2. M. Darussalam, 1989. Radiasi dan Radioisotop, Prinsip dan penggunaannya dalam Biologi, Kedokteran, dan Pertanian, Penerbit Transito, Bandung. 116 hal.3. Moeso Suryowinoto, 1989. Tenaga Atom, Pemanfaatannya dalam Biologi dan Pertanian, Penerbit Kanisius, Yogyakarta. 151 hal.



THE MODULE HANDBOOK

FACULTY OF BIOLOGY

-
4. Soewondo Djojosebagio, 1987. Dasar-dasar Radioisotop dan Radiasi dalam Biologi. PAU IPB Bogor dan Lembaga Sumberdaya Informasi IPB Bogor. 339 hal.
 5. UNEP, 1985. Radiation, Doses, Effects, Risks. United Nations Environment Programme (UNEP), Nairobi, Kenya. 64p.
-