Environmental Science

Module name		Environmental Science				
Module level		2nd year of Bachelor program				
Abbreviation, if applicable						
Sub-heading, if applicable						
Courses included in the module, if applicable		BI-2001 Environmental Science				
Semester/term		3rd Semester				
Module coordinator(s)		Dr. Devi N. Choesin				
Lecturer(s)		Dr. Ayda T. Yusuf Dr. Trimurti H. Wardini				
Language		Indonesian				
Classification within the Curriculum		Compulsory course for Biology program and all bachelor programs in School of Life Sciences & Technology (SITH), also offered to other bachelor study programs at ITB as an option to fulfill the environmental course requirement. Compulsory course in the following programs: ▪ Microbiology program – Sem. 3 ▪ Bioengineering program – Sem. 3 ▪ Agricultural Engineering program – Sem. 3 ▪ Forestry Engineering program – Sem. 3 ▪ Information System & Technology (School of Electrical Engineering & Informatics) – Sem. 8 ▪ Electrical Engineering (School of Electrical Engineering & Informatics) – Sem. 8				
Teaching format/class hours per week during the semester		*Two parallel classes consisting of 40 students /class.* Lectures (face to face lectures, student presentations and discussions): 100% ▪ Lecture : 2 hours x 14 weeks				
Workload	Total Workload	96 hours; 2 CU				
		Face to face teaching	Structured Activities	Independent study	Exam	Total
	Lecture (no practicals)	28	32	32	4	96
Credit points		*Environmental Science (2 CU)*				
Requirements		-				
Content		1. The ecosystem concept, ecological principles, and sustainability. 2. Ecosystems (terrestrial and aquatic) as natural capital and source of ecosystem services. 3. Human population and its impact on the environment. 4. Sustainability of biodiversity; natural resources (land, soil, water, air, minerals, energy); and environmental quality (issues related to environmental hazards and human health, pollution, climate disruption, waste, cities). 5. Sustainability of human societies (economics, politics, environmental worldviews). 6. Global and local (Indonesia) environmental issues and case studies.				

Learning goals/ competencies	*After completion of this module students are expected to be able to:* Knowledge : • explain the ecosystem concept and its relevance to environmental issues. • describe the importance of ecosystems as natural capital and provider of ecosystem services for human welfare. • express the concept of sustainability and recognize examples of sustainable solutions to environmental problems. • relate human population growth to resource sustainability and environmental quality. Skill: • identify and interpret general environmental problems, at the local, regional and global levels. • collect and present relevant information dealing with environmental issues. Competences : • point out the complexity of environmental issues as related to economic and sociocultural aspects. • apply critical thinking in discussing environmental issues.

Study/exam achieve	*Lecture (100%)*				
	Midterm exam	*Final exam*	*Quizzes*	*Assignments & presentations*	*Total*
Lecture	*35%*	*35%*	*10%*	*20%*	*100%*

Forms of media	*Classical teaching tools:*	*white board/chalk and talk, LCD projector, slides, film clips, animation*
	Integrated teaching tools:	-
	Digital teaching tools:	*website as source of lecture material*
	Problem based teaching tools:	-
Literature	1. Miller Jr., G.T. & S.E. Spoolman. 2012. *Living in the Environment*. 17th. Edition. Brooks/Cole: Belmont, CA, USA. 2. Botkin, D.B. & E.A. Keller. 2011. *Environmental Science: Earth as a Living Planet*. 8th. Edition. John Wiley & Sons, Inc. 3. Enger, E. & B. Smith. 2012. *Environmental Science: A Study of Interrelationships.* 13th. Edition. McGraw-Hill Science.	