A Module Handbook or collection of module descriptions that is also available for students to consult should contain the following information about the individual modules:

Module design	Computer Applications and Environmental Modeling
Module level, if applicable	
Code, if applicable	CIL-2.2.604
Subtitles, if applicable	
Courses, if applicable	
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Prof. Dr. Ir. Purwanto, DEA
Lecturer	1. Prof. Dr. Ir. Purwanto, DEA 2. Dr. Dwi P Sasongko, M.Si 3. **Dr. Istadi, ST, MT**
Language	*Indonesian and English*
Relations to curriculum	
Type of teaching, contact hours	*Lecture: 60 minutes* *Q&A: 10 minutes* *Discussion: 10 minutes* *Presentation: 10 minutes*
Workload	*(Estimated) workload, divided into contact hours (lecture, exercise, laboratory session, etc.) and private study, including examination preparation, specified in hours,[1] and in total.*
Credit points	*3 credits*
Requirements according to the examination regulations	*Minimum attendance of lectures 75%*
Recommended prerequisites	*eg existing competences in...*

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[1] When calculating contact time, each contact hour is counted as a full hour because of the organization of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Module objectives/intended learning outcomes	Students understand modeling techniques to understand the behavior of engineered and natural systems and find solutions to problems resulting from the interaction between elements in engineering systems and nature. And also students are able to use Excel, Visual Basic, Access, SPSS, Word and Power Point application programs to process and analyze data
Content	This course discusses the material History of systems and models in environmental management. Concepts and approaches, definitions and clarifications, various systems and models and their applications in environmental management, model construction, input-output models, system relations with models, simulations and case studies. And also study information search, environmental information systems, classification of environmental information, theoretical data and its relationship to environmental information, data processing using computers. Spreadsheet application (Excel), visual basic (Programming), Access (Database), SPSS (Statistics), word processing (Word), Presentation (Power Point).
Study and examination requirements and forms of examination	• *Open book and close book* • *Multiple choice, case study, interview, practice*
Media employed	*Powerpoint, youtube, website*

Reading list	1. Douglas, H. Environmental System Optimization. John Wiley
	2. Thomannn, RV & Mueller, JA 1987. Principles of Surface Water Quality Modeling and Control, Harper & Row Publishers: New York.
	3. Odum EP EcologySystems. Translated by Supriyonodkk, Erlangga Publisher: Jakarta
	4. Software books related to Excel, Word, Access, Visual Basic, Power Point.
	5. Software book related to Applied Statistics.
	6. Singgih, Santoso. 1999. SPSS Processing Statistical Data Professionally. Elex Media Komputindo.
	7. Sarwono, Jonathan. Research Data Analysis using SPSS. PublisherAndi.
	8. Full Guide Microsoft Word XP for Windows. 2004. Andi Publisher.
	9. Sianipar, Pandapotan Ir. 2003. Using Microsoft Office Powerpoint. ElexmediaKomputindo.
	10. Maximizing Data Processing Automation Facilities and Functions with Microsoft Office Excel. PublisherAndi.
	11. Visual basic 6.0 programming. PublisherAndi.