

Module Name	Environmental Geomorphology
Code, if applicable	GEL 2104
Semester(s) in which the module	Third (3 th) Semester
Person responsible for the module	Djati Mardiatno, Dr., M.Si.
Lecturer	Djati Mardiatno, Dr., M.Si. Langgeng Wahyu Santosa, Dr., M.Si.
Language	Bahasa Indonesia
Relation to curriculum	Elective class
Type of teaching,	STAR (<i>Student Teacher Aesthetic Role-Sharing</i>) is an optimal combination between SCL (<i>Student Centered Learning</i>) and TCL (<i>Teacher Centered Learning</i>). Lecturer : 1400 minutes
Workload	Lecturer : 1400 minutes including homework and discussion = 14 meetings x 100 minutes each Mid Semester Examination: 100 minutes Final Semester Examination: 120 minutes Total workload = 1620 minutes
Credit points	2
Requirements according to the examination regulations	Must attend lecture for more than 70%
Recommended prerequisites	Basic Geomorphology
Module objectives/intended learning aoutcomes	1. Students are able to explain : ✚ Basic Concept of Environmental Geomorphology ✚ Geomorphological Resources ✚ Risks and Geomorphological Hazards ✚ Geomorphological Hazards (marine) ✚ Geomorphological hazards (erosion, floods and landslides) ✚ Geomorphological hazards (seismic) ✚ Humans as geomorphic power ✚ Review: human as geomorphic power ✚ Volcanogeomorphology ✚ Advanced material 10 and Review of Vulkanogeomorphology ✚ Coastal geoecology ✚ Hydrogeomorphology ✚ Review: hydrogeomorphology
Content	1. Basic Concept of Environmental Geomorphology 2. Geomorphological Resources 3. Risks and Geomorphological Hazards 4. Geomorphological Hazards (marine) 5. Geomorphological hazards (erosion, floods and landslides) 6. Geomorphological hazards (seismic) 7. Humans as geomorphic power 8. Review: human as geomorphic power 9. Volcanogeomorphology 10. Advanced material 10 and Review of Vulkanogeomorphology

	11. Coastal geoecology 12. Hydrogeomorphology 13. Review: hydrogeomorphology
Study and examination requirements and forms of examination	Quiz (10%), Individual and Group Assessment (30%), mid-semester examination (30 %) dan final examination (30 %). Examination is formed in written test.
Media employed	- ELISA website - Internet - Computers - Interactive video - LCD projector
Reading list	Agnesi, V., Carrara, A., Macaluso, T., Monteleone, S., Pipitone, G. and Sorriso-Valvo, M., 1983. <i>Elementi tipologici e morfologici dei fenomeni di instabilità dei versanti indotti dal sisma del 1980 (Alta valle del Sele)</i>. Geol. Appl. Idrogeol., 18 (1), 309-341 Aswathanarayana, U., 1995, <i>Geoenvironment: An Introduction</i>, Balkema, the Netherlands Carling, H.A. and Dawson, 1996, <i>Advance in Fluvial Dynamics and Stratigraphy</i>, John Wiley and Sons, New York Castellani, A., Chesi, C., Peano, A. and Sardella, L., 1982. <i>Seismic response of topographic irregularities</i>. Proc. Soil Dyn. Earthq. Engin. Conf., Southampton 13-15/7 1982: 251-268 Cooke, R.U. and Doornkamp, J.C., 1990, <i>Geomorphology in Environmental Management</i>, 2nd Edition, Clarendon Press, Oxford Cotecchia, V. (Editor), 1986. <i>Engineering Geology problems in seismic areas</i>. Proc. Int. Symp. IAEG, Bari 13-19/4 1986, 6 vol., 237 + 426 + 466 + 480 + 435 + 362 pp Darmawijaya, M. Isa. 1990. <i>Klasifikasi Tanah</i>. Gadjah Mada University Press Derbyshire, E., Gregory, K.J., and Hails, J.R., 1979, <i>Geomorphological Processes</i>, Dawson Westview Press, Inc., Colorado Emmons, W.H., Allison, I.S., Stauffer, C.R. and Thiel, G.A., 1960. <i>Geology : Principles and Processes</i>, McGraw-Hill Book Company, Inc., New York Fetter, C.W., 1988, <i>Applied Hydrogeology</i>, 2nd Edition, Macmillan Publishing Company, New York Flint, R.F., and Skinner, B.J., 1974, <i>Physical Geology</i>, John Wiley & Sons, Inc., New York. Francis, P., 1981, <i>Volcanoes</i>, Penguin Books Ltd., Harmondsworth, Middlesex, England Govi, M. and Sorzana, P.F., 1977. <i>Effetti geologici del terremoto: frane</i>. In: B. Martinis (Editor), Studio geologico dell'area maggiormente colpita dal terremoto friulano del 1976, Riv. Ital. Paleont. Stratigr., 83: 329-36

	Gregori, L., 1988. Il "bacino de Bastardo": genesi ed evoluzione nel quadro della tettonica recente. Boll. Soc. Geol. Ital., 107: 141-151 Henry. 1988. <i>Fundamentals of Soil Science</i>. John Wiley & Sons, Inc. New York. Howard, A.D. and Remson, I., 1978. <i>Geology in Environmental Planning</i>, McGraw-Hill Book Company, Inc., New York Huggett, R.J., 1995, <i>Geoecology: An Evolutionary Approach</i>, Routledge, London Iida, K. and Iwasaki, T., 1981, <i>Tsunami: Their Science and Engineering</i>, Terra Scientific Publishing Company, Tokyo Lobeck, A.K., 1939, <i>Geomorphology: an Introduction to the Study of Landscape</i>, McGrawHill Book Company, New York Masahiko Oya, 2001, <i>Applied Geomorphology for Mitigation of Natural Hazards</i>, Kluwer Academic Publisher, Dordrecht, the Netherlands Morisawa, M, 1968, <i>Stream and Their Dynamic in Geomorphology</i>, McGraw-Hill Book Company, Tokyo Ollier, C.D., 1988. <i>Glossary of Morphotectonics</i>. Dep. Geogr. Plann., Univ. New England. Armidale, Australia, 53 pp Ollier, Cliff, 1969, <i>Volcanoes: An Introduction to Systemic Geomorphology</i>, the Mit Press, England Panizza, M. 1996. <i>Environmental Geomorphology</i>. Amsterdam: ELSEVIER SCIENCE B.V. Panizza, M. and Piacente, S.. 1993. <i>Geomorphological assets evaluation</i>. Z. Geomorph. N.F., Suppl. Bd.87: 13-18 Panizza, M., 1987. <i>Geomorphological hazard assessment and the analysis of geomorphological risk</i>. In: V. Gardiner (Editor), <i>International Geomorphology 1986</i>, Part 1, Wiley, Chichester: 225-229 Panizza, M., 1991. <i>Geomorphology and seismic risk</i>. <i>Earth-Science Reviews</i>, 31: 11-20 Panizza, M., Carton, A., Castaldini, D., Mantovani, F. and Spina, S.. 1978. <i>Esempi di morfotettonica nelle Dolomiti occidentali e nell'Appennino modenese</i>. <i>Geogr. Fis. Din. Quat.</i> 1: 28-54. Panizza, M., Castaldini, D. et al.. 1987. Neotectonic research in applied geomorphological studies. <i>Z. Geomorph. N.F.</i>, Suppl. Bd. 63: 173-211 Peter W. Birkeland, 1999, <i>Soil and Geomorphology</i>, 3rd Edition, Oxford University Press, New York Pethick, J., 1984, <i>An Introduction to Coastal geomorphology</i>, Edward Arnold Ltd., London Sutikno, 2004. <i>Manajemen Kebencanaan di Indonesia</i>. Bahan Pelatihan SIPBI. Yogyakarta: PSBA Utomo, W H. 1994. <i>Erosi dan Konservasi Tanah</i>. Penerbit IKIP : Malang
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	Verstappen, H.Th., 1983, <i>Applied Geomorphology: Geomorphological Surveys for Environmental Development</i>, ITC, Enschede, the Netherlands Verstappen, H.Th., 1985, <i>Applied Geomorphology and Natural Hazard</i>, ITC, the Netherlands Villes, H. and Spencer, T., 1995, <i>Coastal Problems: Geomorphology, Ecology, and Society at the Coast</i>, Edward Arnold Ltd., London
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