

Media and Information and Communication Technology (ICT) in Mathematics Teaching and Learning

Module designation	Media and Information and Communication Technology (ICT) in Mathematics Teaching and Learning
Semester(s) in which the module is taught	III (odd semester)
Person responsible for the module	Dr. Makmuri, M.Si.
Language	Bahasa Indonesia
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>lecture, lab works, project</i>
Workload (incl. contact hours, self-study hours)	For this course, <i>students</i> required to meet a minimum of 154,66 hours in one semester, which consist of: 26,66 hours for lecture, 128 hours for structured assignments and private study,
Credit points	5.2 ECTS / 2 CP
Required and recommended prerequisites for joining the module	Completing Mathematics Teaching and Learning Designs Course
Module objectives/ intended learning outcomes	Students able to <ol style="list-style-type: none"> 1. Implement a learning system that refers to the principles, concepts, theories of mathematics and mathematics learning in a comprehensive manner, both in formal, informal, and non-formal education. 2. Develop creative and innovative mathematics learning designs at secondary and higher education levels. 3. Apply the teaching and learning of mathematics according to the development of the mathematics education curriculum. 4. Understand, develop, and apply a learning approach oriented to the utilization of students' daily environment. 5. Manage, create, and apply Information and Communication Technology (ICT) in teaching and learning organizations.
Content	Students will learn about: <ol style="list-style-type: none"> 1. Major Concepts of Research and Development of teaching and learning media. 2. GeoGebra software. 3. Video editing software. 4. Operating hardware of video editing. 5. Plan and create ICT teaching and learning media.
Examination forms	Assessment of the learning process according to the following components: Assignment 20%, Project 1 (midterm test) 40%, and Project 2 (final test) 40%.
Study and examination requirements	Students should have attended all lectures and submitted all scheduled individual and group assignments prior to the final examination. Form of examination: Project
Reading list	Main Reference <ol style="list-style-type: none"> 1. Marpanaji, E., Mahali, M. I., & Putra, R. A. S. (2018). Survey on How to Select and Develop Learning Media Conducted by Teacher Professional Education Participants. <i>Journal of Physics: Conference Series</i>, 1140(1). https://doi.org/10.1088/1742-6596/1140/1/012014. 2. Schoenfeld, A. H. (2017). Uses of video in understanding and improving mathematical thinking and teaching. <i>Journal of</i>

	<p><i>Mathematics Teacher Education</i>, 20(5), 415–432. https://doi.org/10.1007/s10857-017-9381-3.</p> <ol style="list-style-type: none">3. Yaumi, M. (2017). Prinsip-Prinsip Desain Pembelajaran: Disesuaikan dengan Kurikulum 2013 Edisi Kedua. Penerbit Kencana.4. Gagne, R. M., Wager, W. W., Golas, K. C., Keller, J. M., & Russell, J. D. (2005). Principles of instructional design.5. Brown, A. H., & Green, T. D. (2019). The essentials of instructional design: Connecting fundamental principles with process and practice. Routledge.6. Suh, H. (2011). Collaborative Learning Models and Support Technologies in the Future Classroom. <i>International Journal</i>, 5(1), 50–61. http://jaems.jp/contents/icoej/vol5/IJEMT5.50-61.pdf
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