Module designation	**Development of Teaching Materials** **Indonesian title:** *Pengembangan Bahan Ajar* **Course code:** 8420202004
Semester(s) in which the module is taught	Semester 4 (Second year)
Person responsible for the module	**Coordinator:** Dr. Pradnyo Wijayanti, M.Pd. **Teaching staff:** Prof. Dr. Masriyah, M.Pd.; Prof. Dr. Rini Setianingsih, M.Kes.; Dr. Janet Trineke Manoy, M.Pd.; Dr. Endah Budi Rahaju, M.Pd.; Dr. Ismail, M.Pd.; Dr. Pradnyo Wijayanti, M.Pd.; Prof. Dr. Tatag Yuli Eko Siswono, S.Pd., M.Pd.; Prof. Rooselyna Ekawati, Ph.D.; Ika Kurniasari, S.Pd., M.Pd.; Dr. Lestariningsih, S.Pd., M.Pd.; Dr. Sri Suryanti, S.Pd., M.Si.; Liza Puspita Yanti, S.Pd., MAE.
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	Lectures, tutorial assignments, and individual study **Media and tools:** Slides and LCD projectors, whiteboard
Workload (incl. contact hours, self-study hours)	**(Estimated) total workload:** 3 CU × 170 minutes × 16 weeks = 8,160 minutes = 136.00 hours (≈ 4.77 ECTS) **Contact hours:** lectures, 3 × 50 minutes per week × 16 weeks = 40.00 hours (class hours per week: 510 minutes = 8.50 hours, including structured activities) **Private study including examination preparation:** structured assignments, 3 × 60 minutes per week × 16 weeks = 48.00 hours; independent study, 3 × 60 minutes per week × 16 weeks = 48.00 hours (total 96.00 hours)
Credit points	3 CU (4.77 ECTS) *1 CU = 170 minutes per week × 16 weeks = 45.3 hours; 1 ECTS = 28.48 hours (144 CU = 229 ECTS), so 1 CU = 1.59 ECTS (UNESA Rector's Decree No. 736/HK/KM/2023).*
Required and recommended prerequisites for joining the module	None
Module objectives/intended learning outcomes	**Programme learning outcomes (PLO) addressed:** • PLO-3: Develop logical, critical, systematic and creative thinking in carrying out specific work in the field of expertise and in accordance with the work competency standards in the relevant field. • PLO-7: Demonstrate pedagogical knowledge in designing, implementing and evaluating mathematics learning. • PLO-8: Design, implement and evaluate mathematics learning using IT. • PLO-10: Make decisions based on data/information in completing tasks that are the student's responsibility and evaluating the work that has been done. • PLO-11: Communicate ideas and research results effectively, orally, and in writing.
Content	This course examines the definition, types, roles, and procedures for developing mathematics instructional materials, including concept analysis, the relationships between concepts, learner characteristics,

<table>
<tr><td></td><td>and the learning context. Students develop and evaluate print and non-print instructional materials, including those supported by ICT and artificial intelligence (AI), which are used in a pedagogically sound and responsible manner. Classes are conducted through discussions and project-based assignments focused on developing instructional materials that are suitable for use and enable students to communicate the development process and results in an academic manner .</td></tr>
<tr><td>Examination forms</td><td>Final score is calculated from the weekly assessment scheme below (CLO/PLO addressed and weight of each assessment):
<table>
<tr><th>Week</th><th>CLO</th><th>PLO</th><th>Weight (%)</th></tr>
<tr><td>1</td><td>CLO-1</td><td>PLO-11</td><td>3</td></tr>
<tr><td>2</td><td>CLO-1</td><td>PLO-11</td><td>3</td></tr>
<tr><td>3</td><td>CLO-2</td><td>PLO-10</td><td>3</td></tr>
<tr><td>4</td><td>CLO-1</td><td>PLO-11</td><td>4</td></tr>
<tr><td>5</td><td>CLO-2</td><td>PLO-10</td><td>3</td></tr>
<tr><td>6</td><td>CLO-2</td><td>PLO-10</td><td>3</td></tr>
<tr><td>7</td><td>CLO-2</td><td>PLO-10</td><td>10</td></tr>
<tr><td>8</td><td>CLO-2</td><td>PLO-10</td><td>15</td></tr>
<tr><td>9</td><td>CLO-2</td><td>PLO-10</td><td>5</td></tr>
<tr><td>10</td><td>CLO-2</td><td>PLO-10</td><td>5</td></tr>
<tr><td>11</td><td>CLO-2</td><td>PLO-10</td><td>3</td></tr>
<tr><td>12</td><td>CLO-3</td><td>PLO-11</td><td>3</td></tr>
<tr><td>13</td><td>CLO-3</td><td>PLO-11</td><td>3</td></tr>
<tr><td>14</td><td>CLO-4</td><td>PLO-3</td><td>3</td></tr>
<tr><td>15</td><td>CLO-4</td><td>PLO-3</td><td>4</td></tr>
<tr><td>16</td><td>CLO-4</td><td>PLO-3</td><td>4</td></tr>
</table></td></tr>
<tr><td>Study and examination requirements</td><td>Students are considered competent and pass if the final score is at least 55 or C.
Final index (grade conversion):
<table>
<tr><th>Index</th><th>Converted score</th><th>Score range (A = final score)</th></tr>
<tr><td>A</td><td>4.00</td><td>85 ≤ A ≤ 100</td></tr>
<tr><td>A-</td><td>3.75</td><td>80 ≤ A < 85</td></tr>
<tr><td>B+</td><td>3.50</td><td>75 ≤ A < 80</td></tr>
<tr><td>B</td><td>3.00</td><td>70 ≤ A < 75</td></tr>
<tr><td>B-</td><td>2.75</td><td>65 ≤ A < 70</td></tr>
<tr><td>C+</td><td>2.50</td><td>60 ≤ A < 65</td></tr>
<tr><td>C</td><td>2.00</td><td>55 ≤ A < 60</td></tr>
<tr><td>D</td><td>1.00</td><td>40 ≤ A < 55</td></tr>
<tr><td>E</td><td>0.00</td><td>0 ≤ A < 40</td></tr>
</table></td></tr>
<tr><td>Reading list</td><td>1. Pribadi,B.A.,&Putri,D.A.P.(2019).Pengembangan Bahan Ajar (Edisi Revisi).Jakarta: Universitas Terbuka.
2. Kosasih.(2021). Pengembangan Bahan Ajar.Jakarta: Bumi Aksara.
3. Nana.(2020). Pengembangan Bahan Ajar. Klaten: Lakeisha.
4. Arikunto,S.(2023).Dasar-dasar Evaluasi Pendidikan. Bumi Aksara.</td></tr>
</table>

	5. WinaSanjaya(2023).Strategi Pembelajaran Berorientasi Standar Proses Pendidikan. Kencana. 6. Gravemeijer, K., Stephan, M., Julie, C., Lin, F. L., & Ohtani, M. (2017). What Mathematics Education May Prepare Students for the Society of the Future? Rotterdam: Sense Publishers. 7. VandenHeuvel-Panhuizen,M.(2020).National Reflections on the Netherlands Didactics of Mathematics.Springer. 8. OECD.(2023).Innovating Education and Educating for Innovation. Paris: OECD Publishing. 9. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial Intelligence in Education: Promises and Implications for Teaching and Learning. Boston: 10. Center for Curriculum Redesign. 11. UNESCO.(2023).Guidance on Generative AI in Education and Research. Paris: UNESCO. 12. Arikunto,S.(2023).Dasar-dasar Evaluasi Pendidikan.Jakarta: Bumi Aksara. 13. Nazir,M.(2022).Metode Penelitian (Rev.).Jakarta:Ghalia Indonesia. 14. Rahayu,S.(2023). Pengembangan Bahan Ajar:Teori dan Aplikasi untuk Pendidik.Jakarta: Prenada media. 15. Morrison,G.R.,Ross,S.M.,Morrison,J.R.,&Kalman,H.K. (2019).Designing Effective Instruction(8thed.).Hoboken, NJ: Wiley. 16. Referensi mutakhir lain yang relevan dengan pengembangan bahan ajar matematika berbasis teknologi. (artikel/publiksi ilmiah). 17. Manoy, J. dkk (2023). Pengembangan Bahan Ajar Etnomatematika Berbasis Budaya. Laporan Penelitian 18. Setianingsih, R. dkk (2024). Culturally Responsive Mathematics Instruction: