

# MODULE HANDBOOK

## < Aljabar 2 >

Nama Mata Kuliah	Aljabar 2						
Prodi	Sarjana						
Kode Mata Kuliah	SM234306						
Semester	3						
Penanggung Jawab	Dian Winda Setyawati, S.Si., M.Si						
Dosen Pengampu	<ul style="list-style-type: none"> <li>• Dian Winda Setyawati, S.Si., M.Si.</li> <li>• Soleha, S.Si., M.Si</li> <li>• Prof. Dr. Subiono, M.Sc.</li> <li>• Drs. Komar Baihaqi, M.Si</li> </ul>						
Bahasa	Bahasa Indonesia						
Metode Pembelajaran	Metode SCL						
Beban kerja	<ol style="list-style-type: none"> <li>1. Tatap Muka: 3 x 50 = 150 menit per minggu</li> <li>2. Pembelajaran terstruktur : 3 x 60 = 180 menit per minggu</li> <li>3. Pembelajaran mandiri: 3 x 60 = 180 menit per minggu.</li> </ol>						
Bobot SKS	3 sks						
Syarat mengikuti Ujian	Seorang mahasiswa harus menghadiri setidaknya 80% perkuliahan untuk dapat mengikuti ujian.						
Mata Kuliah Prasyarat	<ul style="list-style-type: none"> <li>• Aljabar Linier Elementer</li> </ul>						
<b>Capaian Pembelajaran Mata Kuliah (CPMK)</b>	<table border="1"> <tr> <td>CPMK-1</td> <td> <p>Mahasiswa mampu menjelaskan konsep ring, daerah Integral, lapangan, ring pembagi nol</p> <p><i>Students are able to explain the concept of rings, integral areas, fields, zero divisor rings</i></p> </td> </tr> <tr> <td>CPMK-2</td> <td> <p>Mahasiswa mampu menjelaskan konsep lapangan pecahan, karakteristik pada ring, ideal pada ring, ring kuasi</p> <p><i>Students are able to explain the concept of fractional fields, characteristics of rings, ideal rings, quasi rings</i></p> </td> </tr> <tr> <td>CPMK-3</td> <td> <p>Mahasiswa mampu menjelaskan konsep homomorfisma ring, isomorfisma ring , sifat-sifat yang terkait dengan homomorfisma ring,</p> <p><i>Students are able to explain the concepts of ring homomorphism, ring isomorphism, properties related to ring homomorphism,</i></p> </td> </tr> </table>	CPMK-1	<p>Mahasiswa mampu menjelaskan konsep ring, daerah Integral, lapangan, ring pembagi nol</p> <p><i>Students are able to explain the concept of rings, integral areas, fields, zero divisor rings</i></p>	CPMK-2	<p>Mahasiswa mampu menjelaskan konsep lapangan pecahan, karakteristik pada ring, ideal pada ring, ring kuasi</p> <p><i>Students are able to explain the concept of fractional fields, characteristics of rings, ideal rings, quasi rings</i></p>	CPMK-3	<p>Mahasiswa mampu menjelaskan konsep homomorfisma ring, isomorfisma ring , sifat-sifat yang terkait dengan homomorfisma ring,</p> <p><i>Students are able to explain the concepts of ring homomorphism, ring isomorphism, properties related to ring homomorphism,</i></p>
	CPMK-1	<p>Mahasiswa mampu menjelaskan konsep ring, daerah Integral, lapangan, ring pembagi nol</p> <p><i>Students are able to explain the concept of rings, integral areas, fields, zero divisor rings</i></p>					
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CPMK-3	<p>Mahasiswa mampu menjelaskan konsep homomorfisma ring, isomorfisma ring , sifat-sifat yang terkait dengan homomorfisma ring,</p> <p><i>Students are able to explain the concepts of ring homomorphism, ring isomorphism, properties related to ring homomorphism,</i></p>						

	<p>CPMK-4 Mahasiswa mampu menjelaskan konsep polinomial ring, algoritma pembagian pada polinomial ring. polinomial ring tereduksi</p> <p><i>Students are able to explain the concept of ring polynomials, division algorithms for ring polynomials. reduced ring polynomial</i></p>
	<p>CPMK-5 Mahasiswa mampu menjelaskan penerapan polinomial ring pada formula polinomial kubik dan kuartik, ring kuasi pada himpunan polinomial ring</p> <p><i>Students are able to explain the application of ring polynomials to cubic and quartic polynomial formulas, quasi rings to sets of ring polynomials</i></p>
<b>Deskripsi Singkat Mata Kuliah</b>	<p>Pembahasan matakuliah Aljabar II mencakup pengkajian ring, daerah integral, lapangan, karakteristik suatu ring, ideal dan ring faktor, homomorfisma ring, lapangan pecahan dan polinomial ring. Dalam pembahasan kuliah digunakan perangkat lunak SageMath untuk membekali peserta didik mempunyai kemampuan melakukan komputasi simbolik yang berkaitan dengan masalah aljabar dengan dua operasi biner.</p> <p><i>The discussion in the Algebra II course includes the study of rings, integral areas, fields, characteristics of a ring, ideals and factor rings, ring homomorphisms, fractional fields and ring polynomials. In lecture discussions, SageMath software is used to equip students with the ability to carry out symbolic computations related to algebraic problems with two binary operations.</i></p>
<b>Bahan Kajian: Materi Pembelajaran</b>	<ul style="list-style-type: none"> <li>• Ring</li> <li>• Lapangan</li> <li>• Lapangan Berhingga</li> <li>• Polinomial Ring</li> </ul>
<b>Bobot Penilaian</b>	<ul style="list-style-type: none"> <li>• Assignment (20%)</li> <li>• Quiz (20%)</li> <li>• Mid-term Examination (30%)</li> <li>• Final Examination (30%)</li> </ul>
<b>Media Pembelajaran</b>	LCD, whiteboard, websites (myITS Classroom), zoom.
<b>Pustaka</b>	<p>Utama :</p> <ol style="list-style-type: none"> <li>1. Subiono, " ALJABAR Suatu Pondasi Matematika" Departemen Matematika FSAD-ITS, 2022</li> </ol> <p>Pendukung:</p> <ol style="list-style-type: none"> <li>1. Joseph A. Gallian, " Contemporary Abstract Algebra, 7<sup>th</sup> Edition", Brooks/Cole, (2010)</li> <li>2. Joseph J. Rotman,"Advanced Modern Algebra", Prentice Hall, (2003).</li> <li>3. William Paulsen," Abstract Algebra, An Interactive Approach ", CRC Press, (2010).</li> </ol>

	4. Robert A. Beezer," SAGE for Abstract Algebra, A Supplement to Abstract Algebra, Theory and Applications ", Department of Mathematics and Computer Science, University of Puget Sound, 2013
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