



**UNIVERSITAS INDONESIA**  
Faculty of Mathematics and Natural Sciences  
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### MODULE HANDBOOK

Module designation	<i>Analytic Geometry</i>
Semester(s) in which the module is taught	4
Person responsible for the module	<i>Dr. Hengki Tasman</i>
Language	<i>Indonesian</i>
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>lecture, discussion</i>
Workload (incl. contact hours, self-study hours)	<i>(Estimated) Total workload: 9 hours/week x 14 weeks + 5.5 hours/week x 2 weeks = 137 hours.</i> <i>Contact hours: 3 hours (150 minutes lectures).</i> <i>Private study including examination preparation, specified in hours<sup>1</sup>:</i> <i>3 hours structured activities and 3 hours individual study per week.</i>
Credit points	3 SKS (4.77 ECTS)
Required and recommended prerequisites for joining the module	<i>Linear Algebra 1</i>
Module objectives/intended learning outcomes	<i>After completing the course, students have the ability</i> <ol style="list-style-type: none"><li><i>1. to construct coordinate systems in 2-d space,</i></li><li><i>2. to determine the solution of linear geometry problems,</i></li><li><i>3. to determine the solution of quadratic geometry problems,</i></li><li><i>4. to classify the types of quadrics and conics,</i></li><li><i>5. to explain the difference between affine transformation and orthogonal transformation</i></li></ol>

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation 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.

Content	<ol style="list-style-type: none"> <li>1. <i>Coordinate system in plane,</i></li> <li>2. <i>Equations of linear geometry object (line, plane) and problems in linear geometry,</i></li> <li>3. <i>Equations of quadratic geometry object (circle, sphere) and problems in quadratic geometry,</i></li> <li>4. <i>Conics, quadrics, and their classification,</i></li> <li>5. <i>Affine transformation and orthogonal transformation.</i></li> </ol>																				
Examination forms	<ol style="list-style-type: none"> <li>1. <i>Class activities : Quiz (written and computer-based), homework.</i></li> <li>2. <i>Group presentation</i></li> <li>3. <i>Mid-term examination</i></li> <li>4. <i>Final examination</i></li> </ol>																				
Study and examination requirements	<p><i>The final mark will be weighted as follows:</i></p> <ol style="list-style-type: none"> <li>1. <i>Quiz (20%)</i></li> <li>2. <i>Essay assignment (10%)</i></li> <li>3. <i>Presentation assignment (20%)</i></li> <li>4. <i>Mid-term examination (25%)</i></li> <li>5. <i>Final examination (25%)</i></li> </ol> <p><i>To successfully pass the module it requires minimum 55% of the total mark.</i></p> <table data-bbox="608 1115 890 1603" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: left;"><i>Mark</i></th> <th style="text-align: left;"><i>Grade</i></th> </tr> </thead> <tbody> <tr> <td>85—100</td> <td>A</td> </tr> <tr> <td>80—&lt;85</td> <td>A-</td> </tr> <tr> <td>75—&lt;80</td> <td>B+</td> </tr> <tr> <td>70—&lt;75</td> <td>B</td> </tr> <tr> <td>65—&lt;70</td> <td>B-</td> </tr> <tr> <td>60—&lt;65</td> <td>C+</td> </tr> <tr> <td>55—&lt;60</td> <td>C</td> </tr> <tr> <td>40—&lt;55</td> <td>D</td> </tr> <tr> <td>&lt;40</td> <td>E</td> </tr> </tbody> </table>	<i>Mark</i>	<i>Grade</i>	85—100	A	80—<85	A-	75—<80	B+	70—<75	B	65—<70	B-	60—<65	C+	55—<60	C	40—<55	D	<40	E
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Reading list (resources)	<ol style="list-style-type: none"> <li>1. <i>I. Vaisman, Analytical geometry, World Scientific, 1997.</i></li> <li>2. <i>Lecturer's Handout</i></li> </ol>																				