



UIN SUNAN KALIJAGA YOGYAKARTA

FACULTY OF SCIENCE AND TECHNOLOGY

Jl. Marsda Adisucipto Yogyakarta 55281, Telp:+62274519739, Fax:+62274540971,
 E-mail: fst@uin-suka.ac.id, website: <http://saintek.uin-suka.ac.id/>

Undergraduate Programme in Physics

Telp : +62274 519739
 Email : fisika@uin-suka.ac.id
 Website : <https://fisika.uin-suka.ac.id/id>

MODULE HANDBOOK

| Module Name | Mechanic 2 | | | | | | | | | | |
|---|---|---------------------|----|---|---------------------|---|-------------------|-----|---|----------------------|-----|
| Module level, if applicable | Bachelor | | | | | | | | | | |
| Code, if applicable | FIS414010 | | | | | | | | | | |
| Subtitle, if applicable | - | | | | | | | | | | |
| Courses, if applicable | Mechanic 2 | | | | | | | | | | |
| Semester(s) in which the module is taught | 3 rd (third) | | | | | | | | | | |
| Person responsible for the module | Andi, M.Sc. | | | | | | | | | | |
| Lecturer(s) | Andi, M.Sc | | | | | | | | | | |
| Language | Indonesia | | | | | | | | | | |
| Relation to curriculum | Compulsory course in the second year (3 rd semester) Bachelor Degree | | | | | | | | | | |
| Type of teaching, contact hours | 150 minutes lectures and 180 minutes structured activities per week. | | | | | | | | | | |
| Workload | Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam | | | | | | | | | | |
| Credit points | 3 | | | | | | | | | | |
| Requirements according to the examination regulation | Minimum attendance 75% All assignments submitted Attendance on time | | | | | | | | | | |
| Recommended prerequisites | No prerequisites stated on | | | | | | | | | | |
| Module objectives/intended learning outcomes | After completing this course, the students: CO 1. Formulate mechanical quantities in discrete and continuous distributed particle systems. CO 2. Analyze the dynamics of rotation of a rigid body about a fixed axis and a free axis and determine the associated physical quantities. CO 3. Formulate the equations of motion of physical systems using Lagrange Mechanics and Hamiltonian. | | | | | | | | | | |
| Content | 1. Dynamics of Systems of Particles 2. Mechanics of Rigid Bodies: Planar Motion 3. Motion of Rigid Bodies in Three Dimensions 4. Lagrangian Mechanics | | | | | | | | | | |
| Study and examination requirements and forms of examination | The final mark will be weighted as follows: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>NO</th> <th>Assessment methods (components, activities)</th> <th>Weight (percentage)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Final Examination</td> <td>40%</td> </tr> <tr> <td>2</td> <td>Mid-Term Examination</td> <td>30%</td> </tr> </tbody> </table> | | NO | Assessment methods (components, activities) | Weight (percentage) | 1 | Final Examination | 40% | 2 | Mid-Term Examination | 30% |
| NO | Assessment methods (components, activities) | Weight (percentage) | | | | | | | | | |
| 1 | Final Examination | 40% | | | | | | | | | |
| 2 | Mid-Term Examination | 30% | | | | | | | | | |

| | 3 | Class Activities : Quiz, Homework, etc. | 30% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|---|-----|--------------|--------------|--------------|----|--------------|--------------|---|------|---|---|----------|-----|---|----------|----|---|----------|----|---|----------|-----|---|----------|---|---|----------|----|----|----------|----|---|----------|---|----|----------|---|---|----------|----|----|-----|---|
| | <p>The final assessment is expressed in the form of a letter value converted from a number value with the following categories:</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>NO</th> <th>Number Value</th> <th>Letter Value</th> <th>NO</th> <th>Number Value</th> <th>Letter Value</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>≥ 95</td> <td>A</td> <td>7</td> <td>65-69.99</td> <td>B/C</td> </tr> <tr> <td>2</td> <td>90-94.99</td> <td>A-</td> <td>8</td> <td>60-64.99</td> <td>C+</td> </tr> <tr> <td>3</td> <td>85-89.99</td> <td>A/B</td> <td>9</td> <td>55-59.99</td> <td>C</td> </tr> <tr> <td>4</td> <td>80-84.99</td> <td>B+</td> <td>10</td> <td>50-54.99</td> <td>C-</td> </tr> <tr> <td>5</td> <td>75-79.99</td> <td>B</td> <td>11</td> <td>55-34.99</td> <td>D</td> </tr> <tr> <td>6</td> <td>70-74.99</td> <td>B-</td> <td>12</td> <td><35</td> <td>E</td> </tr> </tbody> </table> | | | NO | Number Value | Letter Value | NO | Number Value | Letter Value | 1 | ≥ 95 | A | 7 | 65-69.99 | B/C | 2 | 90-94.99 | A- | 8 | 60-64.99 | C+ | 3 | 85-89.99 | A/B | 9 | 55-59.99 | C | 4 | 80-84.99 | B+ | 10 | 50-54.99 | C- | 5 | 75-79.99 | B | 11 | 55-34.99 | D | 6 | 70-74.99 | B- | 12 | <35 | E |
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| Media employed | White-board, Lcd Projector, e-learning (https://daring.uin-suka.ac.id/) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reading list | <ol style="list-style-type: none"> Analytical Mechanics, G.L.Fowles and G.L.Cassiday, 7th edition, Thomson Brooks/Cole Classical Mechanics, H.Goldstein, C.Poole, and J.Safko, 3rd edition, Addison Wesley Introduction to Classical Mechanics, Atam P.Arya, Allyn and Bacon An Introduction To Mechanics, D.Kleppner and R.J.Kolenkow, McGraw-Hill | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

PLO and CO Mapping

| | PLO 1 | PLO 2 | PLO 3 | PLO 4 | PLO 5 | PLO 6 | PLO 7 | PLO 8 | PLO 9 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| CO 1 | | √ | | √ | | | | | |
| CO 2 | | √ | | √ | | | | | |
| CO 3 | | √ | | √ | | | | | |