



# UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Department of Mathematics

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## Doctor in Mathematics

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## MODULE HANDBOOK

|  |  |
|--|--|
| Module Name                                      | Advance Capita Selecta in Algebra A  |
| Module level, if applicable                      | Doctoral   |
| Code, if applicable                              | MMM 7212   |
| Subtitle, if applicable                          | -  |
| Courses, if applicable                           | Advance Capita Selecta in Algebra A  |
| Semester(s) in which the module is taught        | 1 <sup>st</sup> or 2 <sup>nd</sup> semester  |
| Person responsible for the module                | Head of Algebra Laboratory   |
| Lecturer(s)                                      | 1. Indah Emilia Wijayanti, Prof., Dr., M.Si.<br>2. Budi Surodjo, Dr., M.Si.,<br>3. Yeni Susanti, Dr., M.Si.<br>4. Uha Isnaini, Ph.D., M.Si.  |
| Language   | Bahasa Indonesia   |
| Relation to curriculum                           | Elective Course  |
| Teaching methods                                 | Lecture, presentation, project.  |
| Workload (incl. contact hours, self-study hours) | 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  |

| Required and recommended prerequisites for joining the module | Students master the basic concepts of combinatorics, graph theory, coding or chryptography.  |                     |   |                     |   |                   |          |   |                      |          |   |                                       |          |
|---|--|---------------------|---|---------------------|---|-------------------|----------|---|----------------------|----------|---|---------------------------------------|----------|
| Module objectives/intended learning outcomes                  | Upon successful completion, students will be able to:<br>CO 1. prove the properties related to the topic being discussed.<br>CO 2. formulate assumptions related to the material discussed.<br>CO 3. generalize the concept being discussed into their research topic and validate it  |                     |   |                     |   |                   |          |   |                      |          |   |                                       |          |
| Content   | This course gives materials about advanced algebra topics that have not been covered in other courses such as combinatorics, graph theory, coding theory and chryptography.  |                     |   |                     |   |                   |          |   |                      |          |   |                                       |          |
| Examination forms   | Oral presentation, essay, paper  |                     |   |                     |   |                   |          |   |                      |          |   |                                       |          |
| Study and examination requirements                            | The final mark will be computed from a proportional weight of assignments, mid examination and final examination. The final mark will be weighted as follows:<br><br><table border="1"> <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>20 - 30%</td> </tr> <tr> <td>2</td> <td>Mid-Term Examination</td> <td>20 - 30%</td> </tr> <tr> <td>3</td> <td>Class Activities: Quiz, Project, etc.</td> <td>40 - 60%</td> </tr> </tbody> </table> Minimum final mark to pass : B | No                  | Assessment methods (components, activities) | Weight (percentage) | 1 | Final Examination | 20 - 30% | 2 | Mid-Term Examination | 20 - 30% | 3 | Class Activities: Quiz, Project, etc. | 40 - 60% |
| No  | Assessment methods (components, activities)  | Weight (percentage) |   |                     |   |                   |          |   |                      |          |   |                                       |          |
| 1   | Final Examination  | 20 - 30%            |   |                     |   |                   |          |   |                      |          |   |                                       |          |
| 2   | Mid-Term Examination   | 20 - 30%            |   |                     |   |                   |          |   |                      |          |   |                                       |          |
| 3   | Class Activities: Quiz, Project, etc.  | 40 - 60%            |   |                     |   |                   |          |   |                      |          |   |                                       |          |
| Media employed  | Whiteboard, LCD Screen, Laptop, Zoom Media   |                     |   |                     |   |                   |          |   |                      |          |   |                                       |          |
| Reading list  | References will be determined by the lecturer at the beginning of the lecture, including graduate textbooks and the latest relevant journals   |                     |   |                     |   |                   |          |   |                      |          |   |                                       |          |

### CO-PLO Mapping

|      | PLO 1 | PLO 2 | PLO 3 | PLO 4 | PLO 5 | PLO 6 |
|------|-------|-------|-------|-------|-------|-------|
| CO 1 |       |       | √     | √     |       |       |
| CO 2 | √     | √     | √     | √     | √     | √     |
| CO 3 | √     | √     | √     |       | √     | √     |

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