



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	Topik dalam Statistika Keuangan dan Aktuaria A (Topic on Finance and actuarial science A)
Module level, if applicable	Doctoral Program
Code, if applicable	MMM 7422
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	1 st or 2 nd
Person responsible for the module	Chair of Statistics Laboratory
Lecturer(s)	Dr. Gunardi, M.Si.
Language	Bahasa Indonesia
Relation to curriculum	Elective <i>for</i> Doctor Degree in Mathematics,
Teaching methods	3 hours lecture
Workload (incl. contact hours, self-study hours)	<ul style="list-style-type: none">• 3x50 minutes lectures,• 3x60 minutes structured activities,• 3x60 minutes individual study, In 16 weeks per semester (including assignments and examinations)
Credit points	3
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	On successful completion of this course, students should be able to: <ul style="list-style-type: none"> ● CO 1 evaluate stock price model ● CO 2 evaluate European and American options ● CO 3 innovate Valuation of European and American options ● CO 4 innovate option pricing 												
Content	Stock price model, European and American options, Valuation of European and American options, Application of option pricing.												
Examination forms	<i>Project, oral presentation, and essay.</i>												
Study and examination requirements	<p><i>The final mark will be weighted as follows:</i></p> <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 : final project/presentation/oral exam/essay</td> <td>35%</td> </tr> <tr> <td>2</td> <td>Mid-Term Examination : presentation/oral exam/essay</td> <td>35%</td> </tr> <tr> <td>3</td> <td>Class Activities: presentation, quiz, homework, etc.</td> <td>30%</td> </tr> </tbody> </table> <p><i>To pass the course, students are expected to get a minimum grade of B.</i></p>	No	Assessment methods (components, activities)	Weight (percentage)	1	Final Examination : final project/presentation/oral exam/essay	35%	2	Mid-Term Examination : presentation/oral exam/essay	35%	3	Class Activities: presentation, quiz, homework, etc.	30%
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1	Final Examination : final project/presentation/oral exam/essay	35%											
2	Mid-Term Examination : presentation/oral exam/essay	35%											
3	Class Activities: presentation, quiz, homework, etc.	30%											
Media employed	online platforms, Learning management systems, LCD projectors, and whiteboards.												
Reading list	<ol style="list-style-type: none"> 1. Shreve, S. (2012). Stochastic calculus for finance I: the binomial asset pricing model. Springer. 2. Shreve, S. E. (2004). Stochastic calculus for finance II: Continuous-time models. Springer, New York. 3. Higham, D. (2004). An introduction to financial option valuation: mathematics, stochastics and computation, volume 13. Cambridge University Press. 												

CO-PLO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
CO 1	v	v	v	v		v
CO 2	v	v	v	v		v
CO 3	v		v	v	v	v
CO 4	v		v	v	v	v

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