Doctor in Mathematics

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MODULE HANDBOOK
Doctoral in Mathematics

Module name:	Topik dalam Statistika Keuangan dan Aktuaria A *(Topics in Computation of Financial Statistics and Actuarial Science A)*
Code, if applicable:	MMM 7509
Subtitle, if applicable	
Semester(s) in which the module is taught:	1st or 2nd semester
Person responsible for the module:	Chair of Computation of Statistics Research Group
Language:	Bahasa Indonesia
Relation to curriculum:	Doctoral Degree in Mathematics, Elective Course
Teaching methods	Lecture, classroom discussion, project-based learning.
Workload (incl. contact hours, self-study hours)	Total workload is 232 hours per semester, which consists of 50 minutes lectures per week, 120 minutes of structured activities per week, 120 minutes of individual study per week, in total is 16 weeks per semester, including mid exam and final exam.
Credit points in Credit Units	3
Required and recommended prerequisites for joining the module	Students have learned some basic courses in statistics and statistical mathematics course. Students also have some knowledge on statistical software, such as R.
Module objectives/intended learning outcomes:	After completing this course the students have ability to: CO 1. Gain expertise in analyzing complex financial data using sophisticated statistical and econometric methods. CO 2. Develop proficiency in applying advanced modeling techniques to capture and interpret financial market dynamics. CO 3. Attain autonomy in designing and executing research projects in financial data analysis, contributing valuable insights to the field of finance.
Content:	It will be derived from the research topic of the students. It will be focused on the theory, models, and method of specific data analysis used in the student research.
Examination forms	Oral presentation, essay, paper
Study and examination requirements and forms of examination:	The final mark will be weighted as follows:

No	Assessment methods (components, activities)	Weight (percentage)
1	Final Examination (portfolio/essay/oral presentation)	35%
2	Mid-Term Examination (portfolio/essay/presentation)	35%
3	Class Activities: Presentation	30%

To pass the course, the minimum grade is B.

Media employed:	Board, LCD Projector, Laptop/Computer
Reading List:	1. Tsay, R. S. (2010). Analysis of financial time series (3rd ed.). Wiley. 2. Ruey S. T., & Ruey S. T. (2005). Financial econometrics. Wiley.

3. Campbell, J. Y., Lo, A. W., & MacKinlay, A. C. (1997). The econometrics of financial markets. Princeton University Press.
4. Alexander, C. (2008). Market risk analysis: Practical financial econometrics (Volume II). Wiley.

Mapping of The COs and PLOs

	PLO – 1 S3 Mat	PLO – 2 S3 Mat	PLO – 3 S3 Mat	PLO – 4 S3 Mat	PLO – 5 S3 Mat	PLO –6 S3 Mat
CO 1	v	v	v		v	
CO 2	v	v	v		v	
CO 3	v	v	v		v	v

Last Modified Date : **October 9, 2023**

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Module name:	Topik dalam Statistika Keuangan dan Aktuaria A *(Topics in Computation of Financial Statistics and Actuarial Science A*)
Code, if applicable:	MMM 7509
Subtitle, if applicable	Advanced Financial Data Analysis
Semester(s) in which the module is taught:	1st or 2nd semester
Person responsible for the module:	Chair of Computation of Statistics Research Group
Language:	Bahasa Indonesia
Relation to curriculum:	Doctoral Degree in Mathematics, Elective Course
Teaching methods	Lecture, classroom discussion, project-based learning.
Workload (incl. contact hours, self-study hours)	Total workload is 232 hours per semester, which consists of 50 minutes lectures per week, 120 minutes of structured activities per week, 120 minutes of individual study per week, in total is 16 weeks per semester, including mid exam and final exam.
Credit points in Credit Units	3
Required and recommended prerequisites for joining the module	Students have learned some basic courses in statistics and statistical mathematics course. Students also have some knowledge on statistical software, such as R.
Module objectives/intended learning outcomes:	After completing this course the students have ability to: CO 1. Gain expertise in analyzing complex financial data using sophisticated statistical and econometric methods. CO 2. Develop proficiency in applying advanced modeling techniques to capture and interpret financial market dynamics. CO 3. Attain autonomy in designing and executing research projects in financial data analysis, contributing valuable insights to the field of finance.
Content:	It will be derived from the research topic of the students. It will be focused on the theory, models, and method of specific data analysis used in the student research.
Examination forms	Oral presentation, essay, paper
Study and examination requirements and forms of examination:	The final mark will be weighted as follows: | No	Assessment methods (components, activities)	Weight (percentage)
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1	Final Examination (portfolio/essay/oral presentation)	35%
2	Mid-Term Examination (portfolio/essay/presentation)	35%
3	Class Activities: Presentation	30%	 To pass the course, the minimum grade is B.
Media employed:	Board, LCD Projector, Laptop/Computer
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Mapping of The COs and PLOs

	PLO – 1 S3 Mat	PLO – 2 S3 Mat	PLO – 3 S3 Mat	PLO – 4 S3 Mat	PLO – 5 S3 Mat	PLO –6 S3 Mat
CO 1	v	v	v		v	
CO 2	v	v	v		v	
CO 3	v	v	v		v	v

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