
PAI New Syllabus and Synergy with University

Jakarta, Thursday March 29nd 2007



PERSATUAN AKTUARIS INDONESIA
(THE SOCIETY OF ACTUARIES OF INDONESIA)

PAI New Syllabus



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About PAI New Curriculum

- Resulted from IAA requirements to its full members
 - Some gaps between current and new curriculum
 - In terms of subjects, reference books, depth of coverage
 - [March 12th 2007: formal approval from IAA](#)
- Full implementation in 2008
 - Optional practice specific area: health insurance and general insurance
- Transitional period for current candidates
 - Applicable to candidates with more than 1 succeeded exam
 - Beyond the transitional period, possibility to convert succeeded exams under the new syllabus



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IAA's Approval



**ASSOCIATION ACTUARIELLE INTERNATIONALE
INTERNATIONAL ACTUARIAL ASSOCIATION**

IAA EDUCATION ASSESSMENT

Thank you for submitting Persatuan Aktuaris Indonesia's education transition plan and new syllabus. I am pleased to inform you that at its meeting in Edinburgh, Scotland, [the IAA Education Committee has agreed that the changes proposed to your new education system by your association are now moving towards meeting the IAA Education Guidelines adopted on July 1, 1998](#). We would be grateful if you would arrange for us to have an annual report on how the changes are progressing. This report will be required six weeks before the IAA meetings in

- Dublin, Ireland – October 25 – 28, 2007 (due September 12, 2007)
- Limassol, Cyprus – November 1 – 4, 2008 (due September 19, 2008)



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PAI CURRICULUM COMPARISON: Current vs New

PAI Current Curriculum (2006)

Examination subjects for Associateship Designation

No	Subject	Type
AAI-01	Probability and Statistics	Exam
AAI-02	Financial Mathematics	Exam
AAI-03	Actuarial Mathematics I	Exam
AAI-04	Survival Model	Exam
AAI-05	Economics	Exam

Examination subjects for Fellowship Designation

No	Subject	Type
AI-01	Actuarial Mathematics II	Exam
AI-02	Pensions	Exam
AI-03	Underwriting and Selection of Risk	Exam
AI-04	Life Insurance Accounting	Exam
AI-05	Investments and Regulations	Exam
P	Professionalism	Seminar

PAI Proposed New Curriculum

Examination subjects for Associateship Designation

No	Subject	Type
A10	Financial Mathematics	Exam
A20	Probability & Statistics	Exam
A30	Economics	Exam
A40	Accounting	Exam
A50	Statistical Methods	Exam
A60	Actuarial Mathematics	Exam
A70	Risk Theory	Exam
A80	Professionalism	Seminar

Examination subjects for Fellowship Designation

No	Subject	Type
F10	Investments	Exam
F20	Actuarial Management	Exam
F3X	Practice-specific:	Exam
	F33. General Insurance	
	F31. Life Insurance	
	F32. Pensions	
	F34. Health Insurance	



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Notes on The New Curriculum

- Same number of exams, with possible different depth of coverage
- Unchanged subjects:
 - Financial Mathematics, Probability & Statistics, Actuarial Mathematics, Economics, Accounting, Investments
- New subjects:
 - Statistical Method, Actuarial Management, Risk Theory
- 7 exams for ASAI designation, 3 for FSAI
 - ASAI designation obtained under current curriculum still recognized



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Implementation Schedule and Transitional Period

Candidate Status	Timeline			
	Nov 06	June 07	Nov 07	June 08
FSAI Candidate	2006 Curriculum (exams AI-01 - AI-05)	2006 Curriculum (exams AI-01 - AI-05)	2006 Curriculum (exams AI-01 - AI-05)	2008 Curriculum (F10, F20, F31 - F34). Notes: some AI exams from 2006 Curriculum are convertible into 2008 Curriculum. Any unconverted AI exams will be credited for continuing education program
ASAI Candidate	2006 Curriculum (exams AAI-01 - AAI-05)	2006 Curriculum (exams AAI-01 - AAI-05)	2008 Curriculum (7 Exams A10 - A70 + 1 seminar A80). Notes: some AAI exams from 2006 Curriculum are convertible into 2008 Curriculum. Any unconverted AAI exams will be credited for continuing education program.	2008 Curriculum (A10 - A80)
New Candidate	2006 Curriculum (exams AAI-01 - AAI-05)	2008 Curriculum (4 New exams, A10 - A40)	2008 Curriculum (7 Exams A10 - A70 + 1 seminar A80)	2008 Curriculum (A10 - A80)



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Proposed Exam Conversion Table

PAI Conversion Table between 2006 Curriculum and Proposed New Curriculum (2008)

Examination subjects for Associateship Designation

2008 Curriculum			2006 Curriculum			Conversion Period
No	Subject	Type	No	Subject	Type	
A10	Financial Mathematics	Exam	AAI-02	Financial Mathematics	Exam	June - Nov 07
A20	Probability & Statistics	Exam	AAI-01	Probability and Statistics	Exam	June - Nov 07
A30	Economics	Exam	AAI-05	Economics	Exam	June - Nov 07
A40	Accounting	Exam	AI-04	Survival Model	Exam	June - Nov 07
A50	Statistical Methods	Exam	-	-	-	-
A60	Actuarial Mathematics	Exam	AAI-03 and AI-01	Actuarial Mathematics I & II	Exam	Nov 07
A70	Risk Theory	Exam	-	-	-	-
A80	Professionalism	Seminar	P	Professionalism	Seminar	June - Nov 07

Examination subjects for Fellowship Designation

2008 Curriculum			2006 Curriculum			Conversion Period
No	Subject	Type	No	Subject	Type	
F10	Investments	Exam	AI-05	Investments and Regulations	Exam	Nov 07
F20	Actuarial Management	Exam	-	-	-	-
F3X	Practice-specific:	Exam	AI-02	Pensions	Exam	Nov 07
	F33. General Insurance					
	F31. Life Insurance					
	F32. Pensions					
	F34. Health Insurance					



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Synergy with University



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About the Synergy with University

- Some existing cooperation between PAI and universities
- Targeted universities: UI, ITB, UGM, IPB
 - Center of knowledge, adequate resources
 - Existing S-1 and/or S-2 actuarial program / courses
 - Need to attract best students to actuarial science
- Positive response
- Courses mapping process is on going



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POSSIBLE COOPERATIONS WITH UNIVERSITIES

- Examination Center outside Jakarta
 - 1st time in Nov 06 in Yogya
- Outsourcing PAI Exam(s) to Universities
- Waive PAI exams to IPB students succeeding in relevant courses (intra curriculum) with good criteria
- Credit IPB courses relevant to PAI syllabus (extra curriculum)
- Other joint programs



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MAPPING BETWEEN PAI SYLLABUS AND UNIVERSITY:

- With ITB:

PAI	ITB	Credit
1. A10 Financial Mathematics	Pengantar Matematika Keuangan	4
	Kapita Selekt Mat. Keuangan I	4
	Kapita Selekt Mat. Keuangan II	4
	Matematika Keuangan	3
2. A20 Probability & Math. Stats	Teori Peluang	4
	Statistika Matematika	4
	Analisis Data	4
	Metoda Statistika	3
3. A50 Statistical Methods	Statistika Nonparametrika	3
	Analisis Variansi dan Regresi	4
	Kapita Selekt Statistika II (Time Series Analysis or Linear Models)	3
	Survival Models	3
4. A60 Actuarial Mathematics	Matematika Aktuaria	3
	Matematika Asuransi Jiwa I	3
	Matematika Asuransi Jiwa II	3
5. A70 Risk Theory	Teori Risiko	3
	Teori Kredibilitas	3



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MAPPING BETWEEN PAI SYLLABUS AND UNIVERSITY:

- With UI:

PAI	UI	Credit
1. A10 Financial Mathematics	Financial Mathematics	4
	Financial Economics Theory	4
2. A20 Probability & Math. Stats	Mathematical Statistics I	4
	Mathematical Statistics II	4
3. A50 Statistical Methods	Linear Models I	3
	Linear Models II	3
	Time Series Analysis	3
	Survival Analysis	3
4. A60 Actuarial Mathematics	Actuarial Mathematics I	4
	Actuarial Mathematics II	4
5. A70 Risk Theory	Risk Theory	3
	Loss Distribution	3



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Q & A



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Thank You



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PAI SYLLABUS BREAKDOWN: (1)

- **Financial Mathematics:**
 - Aim : To provide grounding in the techniques of financial, mathematics and their application
 - Topics : Introduction to asset types and securities markets, Interest, yield and other financial calculations, Investment risk, introduction to stochastic interest and discount
- **Probability and Statistics:**
 - Aim : To provide a grounding in probability and mathematical statistics
 - Topics : Concepts of probability, Random variables and their characteristics, Methods and properties of estimation, Correlation & regression analysis, Hypothesis testing and confidence intervals, Data analysis
- **Economics:**
 - Aim : To provide a grounding in the fundamental concepts of both micro and macroeconomics
 - Topics : Microeconomics, Macroeconomics



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PAI SYLLABUS BREAKDOWN: (2)

- **Accounting:**
 - **Aim** : To provide the ability to interpret the accounts and financial statement of companies
 - **Topics** : Basic principles of accounting - including the role of accounting standards, Different types of business entity, Basic structure of company accounts, Interpretation and limitation of company accounts
- **Statistical Methods:**
 - **Aim** : To provide the skills and expertise in the use of models appropriate for the understanding of risk in a range of actuarial work
 - **Topics** : Statistical models, such as regression and time series, Survival and multi-state models, Parametric and non parametric analysis of data, Graduation principles and techniques



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PAI SYLLABUS BREAKDOWN: (3)

- **Actuarial Mathematics:**
 - **Aim** : To provide the skills and expertise in the mathematics that are of particular relevance to actuaries working in life insurance, pensions, health care and general insurance
 - **Topics** : Actuarial mathematics as applied to life insurance, pensions, health care and general insurance, Types of products and plans - individual, group and social insurance arrangements, Pricing or financing methods of products and plans, Reserving
- **Risk Theory:**
 - **Aim** : To provide an understanding of the principles of risk theory and its applications
 - **Topics** : Probability Model in Risk Process, Risk models (individual and collective), Estimation of Risk Distributions, Credibility theory, Ruin theory



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