

N.1.1 PROGRAM: BUSINESS MATHEMATICS AND INFORMATICS**CENTRE FOR BUSINESS MATHEMATICS AND INFORMATICS**

Qualification code: 202123

N.1.1.1 Curriculum N609P: Actuarial Science (following on B.Sc. N137P)

This curriculum is compiled from the following modules:

Module code	Descriptive name	Credits
First semester		
BWIN613	Financial Engineering I	16
BWIN614	Investment Theory I	16
STTK612	Statistical Data-analysis I: Advanced Models	16
STTK615	Stochastic Processes I	16
STTK616	Survival theory	16
Second semester		
BWIN623	Financial Engineering II	16
BWIN626	Contingencies (CT5)	16
STTK622	Statistical Data-analysis II: Time Series Analysis	16
	Elective Module #	16
	Elective Module #	16
Total number of credits of this curriculum		160

#The two elective modules in the first semester is chosen from the modules in the following table.

Module code	Descriptive name	Credits
BWIN627	Core Applications part I	16
BWIN628	Financial and Investment ST5	16
BWIN629	Core Applications part II	16
BWIN622	Pricing of Derivatives A	16
STTK624	Discrete Data Analysis	16

The integrated assessment of this curriculum takes place through the assessment of the modules BWIN623.

N.1.1.2 Curriculum N610P: Quantitative Risk Management (following on B.Sc. N134P, N135P, N136P)

This curriculum consists of the following modules divided into two semesters:

Module code	Descriptive name	Credits
First semester		
BWIN611	Quantitative Risk Analysis I	16
BWIN613	Financial Engineering I	16
BWIN614	Investment Theory I	16
STTK612	Statistical Data-analysis I	16
	Elective Module [#]	16
Second semester		
BWIN623	Financial Engineering II	16
ECON623	Risk Management	16
STTK622	Statistical Data-analysis II	16
STTK623	Multivariate Statistics	16
	Elective Module [#]	16
Total number of credits		160

[#]The one elective modules in the first semester is chosen from the modules in the following table.

Module code	Descriptive name	Credits
BWIN615	Financial Modelling I	16
ECON617	Econometrics	16

[#]The two elective modules in the second semester is chosen from the modules in the following table.

Module code	Descriptive name	Credits
BWIN625	Financial Modelling II	16
BWIN621	Quantitative Risk Analysis II	16
BWIN627	Core Applications part I	16
BWIN628	Finance and Investment ST5	16
BWIN629	Core Applications part II	16
ECON622	Fiscal and monetary policy	16
STTK624	Discrete Data analysis	16

The integrated assessment of this curriculum takes place through the assessment of the modules BWIN623 and ECON623.

N.1.1.3 Curriculum N611P: Financial Mathematics (following on B.Sc. N135P)

This curriculum consists of the following modules divided into two semesters:

Module code	Descriptive name	Credits
First semester		
BWIN613	Financial Engineering I	16
STTK612	Statistical Data-analysis I	16
STTK615	Stochastic Processes I	16
WISK613	Topology of Metric and Normed Spaces	8
WISK614	Measure and Integration Theory I	8
WISK615	Differential Equations	16
Second semester		
BWIN622	Pricing of Derivatives A	16
BWIN623	Financial Engineering II	16
STTK622	Statistical Data-analysis II	16
STTK625	Stochastic Processes II	16
WISK624	Measure and Integration Theory II	16
Total number of credits		160

The integrated assessment of this curriculum takes place through the assessment of the modules BWIN623.

N.1.1.4 Curriculum N612P: Data Mining (following on B.Sc. N134P, N136P)

This curriculum consists of the following modules divided into two semesters:

Module code	Descriptive name	Credits
First semester		
ITRW616	Artificial Intelligence I	16
STTK612	Statistical Data-analysis I	16
	Elective Module	16
	Elective Module	16
	Elective Module	16
Second semester		
ITRW626	Artificial Intelligence II	16
STTK622	Statistical Data-analysis II	16
STTK623	Multivariate Statistics	16
	Elective Module	16
	Elective Module	16
Total number of credits		160

#The elective module in the first semester is chosen from the modules in the following table.

Module code	Descriptive name	Credits
BWIN615	Financial Modelling I	16
ITRW613	Databases I	16
ECON617	Econometrics	16
ITRW618	Decision Support System I	16
ITRW611	Data Warehousing I	16
BWIN614	Investment Theory I	16
BWIN613	Financial Engineering I	16
ITRW614	Information System Engineering	16
STTK613	Re-sampling Methods	16

#The two elective modules in the second semester is chosen from the modules in the following table.

Module code	Descriptive name	Credits
BWIN625	Financial Modelling II	16
ITRW623	Databases II	16
ITRW628	Decision Support Systems II	16
ITRW621	Data Warehousing II	16
BWIN623	Financial Engineering II	16
ITRW624	Information System Engineering	16
STTK624	Discrete Data Analysis	16

The integrated assessment of this curriculum takes place through the assessment of the modules ITRW626

**N.1.1.5 PROGRAM: BUSINESS MATHEMATICS AND INFORMATICS
CENTRE: BUSINESS MATHEMATICS AND INFORMATICS**

Qualification code: 203126

N.1.1.5.1 Curriculum N809P: BMI [Specialisation: Quantitative Risk Management] (following on Hons.B.Sc. N610P)

This curriculum consists of the following modules that are divided into two semesters:

Module code	Descriptive name	Credits
First semester		
BWIN811	Practical Risk Management SAS RD	16
BWIN815	Industry Integration Project	32
	Elective Module #	16
	Elective Module #	16
	Elective Module #	16
Second semester		
	Elective Module #	16
BWIN826	Industry Directed Research Project	80
Total number of credits		192

#The elective module in the first semester is chosen from the modules in the following table. At least one of the elective modules in this curriculum should be NQF level 8a(9)

Module code	Descriptive name	Credits
BWIN615	Financial Modelling I	16
ITRW612	Linear Programming I	16
BWIN816	Modern Portfolio Theory	16
BWIN817	Retail Credit Risk	16
BWIN813	Practical Data Mining: SAS EM	16
BWIN818	Topical research issues in risk analysis	16

#The two elective modules in the second semester is chosen from the modules in the following table. At least one of the elective modules in this curriculum should be NQF level 8a(9)

Module code	Descriptive name	Credits
BWIN625	Financial Modelling II	16
BWIN621	Quantitative Risk Analysis II	16
BWIN627	Core Applications Part I	16
BWIN628	Finance and Investment ST5	16
BWIN629	Core Applications Part II	16
ITRW622	Linear Programming II	16

The integrated assessment of this curriculum takes place through the assessment of the module BWIN826.

N.1.1.5.2 Curriculum N810P: BMI [Specialisation: Financial Mathematics] (following on Hons.B.Sc. N611P)

This curriculum consists of the following modules divided into two semesters:

Module code	Descriptive name	Credits
First semester		
BWIN812	Pricing of Derivatives B	16
BWIN811	Practical Risk Analysis	16
BWIN815	Industry Integration Project	32
	Elective Module #	16
	Elective Module #	16
Second semester		
BWIN826	Industry Directed Research Project	80
	Elective Module #	16
Total number of credits		192

#The elective module in the first semester is chosen from the modules in the following table. At least one of the elective modules in this curriculum should be NQF level 8a(9)

Module code	Descriptive name	Credits
BWIN615	Financial Modelling I	16
ITRW612	Linear Programming I	16
BWIN817	Retail Credit Risk	16
BWIN818	Topical research issues in Risk Analysis	16
BWIN614	Investment Theory I	16
BWIN611	Quantitative Risk Analysis I	16

#The two elective modules in the second semester is chosen from the modules in the following table. At least one of the elective modules in this curriculum should be NQF level 8a(9)

Module code	Descriptive name	Credits
BWIN625	Financial Modelling II	16
ITRW622	Linear Programming II	16
STTK623	Multivariate Statistics	16
STTK624	Discrete Data Analysis	16

The integrated assessment of this curriculum takes place through the assessment of the modules BWIN826.

N.1.1.5.3 Curriculum N811P: BMI [Specialisation: Data Mining] (following on Hons.B.Sc. N612P)

This curriculum consists of the following modules that are divided into two semesters:

Module code	Descriptive name	Credits
First semester		
BWIN813	Practical Data Mining	16
BWIN815	Industry Integration Project	32
	Elective Module #	16
	Elective Module #	16
	Elective Module #	16
Second semester		
	Elective Module #	16
BWIN826	Industry Directed Research Project	80
Total number of credits		192

#The elective module in the first semester is chosen from the modules in the following table. At least one of the elective modules in this curriculum should be NQF level 8a(9)

Module code	Descriptive name	Credits
BWIN615	Financial Modelling I	16
ITRW612	Linear Programming I	16
ITRW618	Decision Support Systems I	16
BWIN816	Modern Portfolio Theory	16
BWIN817	Retail Credit Risk	16
BWIN614	Investment Theory I	16
BWIN613	Financial Engineering I	16

#The two elective modules in the second semester is chosen from the modules in the following table. At least one of the elective modules in this curriculum should be NQF level 8a(9)

Module code	Descriptive name	Credits
BWIN625	Financial Modelling II	16
ITRW628	Decision Support Systems II	16
ITRW622	Linear Programming II	16
BWIN623	Financial Engineering II	16
STTK624	Discrete Data Analysis	16
ITRW624	Information Systems Engineering II	16

The integrated assessment of this curriculum takes place through the assessment of the module BWIN826.

N.1.1.6 PROGRAM: BUSINESS MATHEMATICS AND INFORMATICS
CENTRE: BUSINESS MATHEMATICS AND INFORMATICS
Qualification code: 203127

N.1.1.6.1 Curriculum N830P in Risk Analysis

The curriculum consists of a dissertation and an examination paper on topics that are supportive of the research done for the dissertation. The study leader decides together with the research director and the school/centre director on appropriate topics.

Module code	Descriptive Name	Credits
BWIN872	Dissertation	128
BWIN874	Capita Selecta	32
Total number of credits		160