Universitat de Barcelona
Facultat d'Economia i Empresa

Màster de Ciències Actuarials i Financeres

Av. Diagonal 690-696
08034 Barcelona
www.ub.edu/economiaempresa/masteroficial/caf

Programme syllabus and outline 2023-2024

Last update: July 13th, 2023

Structure

First year		Second year	
1st term	2nd term	3rd term	4th term
Compulsory courses 92,5 ECTS			Elective courses 17,5 ECTS Master thesis 10 ECTS

First term | Compulsory courses (30 ECTS)

Course title	ECTS	TYPE
575277 Numerical Calculus. Programming languages	2,5	MAND
575278 Statistics for Insurance	5	MAND
575279 Actuarial Statistics	5	MAND
575280 SAS+R Computational Data Analysis	5	MAND
575285 Enterprise Risk Management	2,5	MAND
575281 Insurance Company Accounting	2,5	MAND
575290 Insurance Market. Elements i Agents	2,5	MAND
575282 Financial Valuation Models	5	MAND

Second term | Compulsory courses (30 ECTS)

Course title	ECTS	TYPE
575283 Stochastic Finance	5	MAND
575284 Financial Econometrics	5	MAND
575286 Risk Modeling	5	MAND
575287 Actuarial Mathematical Models and Life Applications	5	MAND
575288 Actuarial Mathematical Models and Non-Life Applications	5	MAND
575289 Actuarial Modeling of Public Pension Systems	5	MAND

Third term | Compulsory courses (32,5 ECTS)

Course title	ECTS	TYPE
575291 Statistical Models	5	MAND
575292 International Financial Economics	5	MAND
575293 Solvency	5	MAND
575294 Financial Risk Management	5	MAND
575295 Risk Quantification	5	MAND
575296 Mathematical Models for Non-Life Provisions	2´5	MAND
575297 Pension Plans. ALM	5	MAND

Fourth term | Elective courses and Master thesis (27,5 ECTS)

Course title	ECTS	TYPE
Optional credits (elective courses)	17,5	OPT
575313 Final Project	10	FP

Elective courses. Students must complete 17,5 credits of these advanced specialties:

- 575298 Strategic Finance and Insurance Decisions: 2,5 ECTS
- 575299 Health and Dependency: 2,5 ECTS (*)
- 575300 Tax Law, Banking and Capital Markets: 2,5 ECTS
- 575301 Computational Intelligence in Finance and Insurance: 2,5 ECTS
- 575302 Advanced Financial Instruments. Structured Products: 2,5 ECTS
- 575303 Valuation of Financial and Insurance Companies: 2,5 ECTS
- 575304 Advanced Actuarial Mathematical Models: 2,5 ECTS
- 575305 Advanced Stochastic Finance: 2,5 ECTS
- 575306 Reinsurance: 2,5 ECTS
- 575307 Group and Disability Transactions: 2,5 ECTS
- 575308 Empirical Finance: 2,5 ECTS
- 575309 Multivariate Financial Analysis: 2,5 ECTS
- 575310 Machine Learning: 2,5 ECTS
- 575311 Credit Risk: 2,5 ECTS (*)
- 575312 Curricular internship: 5 ECTS

(*) Not offered in the academic year 2023-2024.