

Annex 2 : Scenarios

A semester with less than 30 ECTS must be compensated by another semester in the same year with more than 30 ECTS to achieve a minimal number of 60 ECTS per year

I. Scenarios for students from Evry

A. UEVE-Students going to UNIBO (Bologna)

1. Semester 2 (end of February to mid-May in Bologna)

24 ECTS obtained by the following combination among 'First Year' courses in Bologna:

| | |
|-------------------------------------|--------|
| Numerical methods | 6 ECTS |
| Probability | 6 ECTS |
| Actuarial and financial mathematics | 6 ECTS |
| Econometrics | 6 ECTS |

8 ECTS

| | |
|--|----------------|
| Internship or master 1 thesis (workshop) | 8 ECTS |
| TOTAL NUMBER OF ECTS | 32 ECTS |

2. Semester 3 (end of September to mid-December in Bologna)

30 ECTS obtained by the following combination among 'Second Year' courses in Bologna:

| | |
|--|------------------------|
| Statistical Methods for Asset Management | 6 ECTS |
| Advanced Methods of Insurance | 12 ECTS |
| Advanced Methods of Risk Management | 12 ECTS |
| Statistics of Financial Markets | 6 ECTS |
| Econometrics of Financial Markets | 6 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

B. UEVE-Students going to LMU (Munich)

1. Semester 2 of year 1 (May to July in Munich)

30 ECTS minimum among

| | |
|---|------------------------|
| Probability Theory | 9 ECTS |
| Functional Analysis | 9 ECTS |
| Financial Mathematics II (Continuous-Time: BS,..) | 9 ECTS |
| Financial Mathematics IV (Risk Management: Copulas) | 9 ECTS |
| Time-Series | 3 ECTS |
| Financial Econometrics: Portfolio Analysis | 6 ECTS |
| Internship | 3 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

2. Semester 1 of year 2 during the summer term in Munich (May to July in Munich)

30 ECTS minimum among

| | |
|---|------------------------|
| Advanced Themes in Probability Theory | 9 ECTS |
| Financial Mathematics II (Continuous-Time: BS,..) | 9 ECTS |
| Financial Mathematics IV (Risk Management: Copulas) | 9 ECTS |
| Advanced econometrics | 7,5 ECTS |
| Multivariate time series | 3 ECTS |
| Financial Econometrics: Risk Management | 6 ECTS |
| Selected Themes in Economics Statistics A and B | 6 ECTS |
| Internship | 3 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

3. Evry students can then do internship of year 2 from September to December and / or between April and December.

4. Evry students come to Munich to do Semester 2 of year 2 during the summer term in Munich (May to July in Munich in the end of their year 2 in Evry)

| | |
|-----------------------------|------------------------|
| Seminar | 3 ECTS |
| Master thesis | 27 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

The Master thesis can be done in a FIRM but in any case it will be assessed on the basis of it scientific contents.

II. Scenarios for students from Bologna

A. UNIBO-Students going to LMU (Munich)

1. 1st year students

Semester 1 (Only for students holding a Bachelor Degree in Mathematics)

| | |
|--|------------------------|
| Stochastische Prozesse | 9 ECTS |
| Mikroökonomie | 9 ECTS |
| Numerische Methoden der Wirtschaftsmathematik | 9 ECTS |
| e. g. Pensionsversicherungsmathematik or Modellierung, etc.) | 3 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

2. 2nd year students

Semester 3

| | |
|--|------------------------|
| Financial Mathematics | 9 - 27 ECTS |
| Statistics | 12 - 18 ECTS |
| Wahlmöglichkeiten (e.g. Seminars or in Actuarial Sciences) | 3 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

Semester 4

| | |
|------------------------------------|----------------|
| Thesis | 27 ECTS |
| Hauptseminar or Industriepraktikum | 3 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS |

Semester 4

| | |
|--|----------------|
| Insurance" (*) (e. g. Insurance Economics, Rückversicherung, Versicherungstechnik, Actuarial Sciences) | 18 ECTS |
| Free course | 9 ECTS |
| Hauptseminar | 3 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS |

(*) Only for students specializing in Insurance who replace "Advanced methods of insurance" with the analogous courses at LMU.

B. UNIBO Students going to UEVE (Evry)

1. 1st year students

Semester 1 (Advisable for students holding a Bachelor Degree in Mathematics or Informatics)

| | |
|---|------------------------|
| Analyse fonctionnelle et applications aux équations aux dérivées partielles | 8 ECTS |
| Probabilité | 3 ECTS |
| Statistiques | 3 ECTS |
| SAS | 2 ECTS |
| Marché financier: institutions et instruments | 4 ECTS |
| Distributions | 4 ECTS |
| Mise à niveau programmation (langage C) | 2 ECTS |
| C++ / VBA | 4,5 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

2. 2nd year students

Semester 3

| | |
|---|----------------|
| Processus stochastique | 9 ECTS |
| Principes de base et Techniques actuarielles & Econométrie Financière | 9 ECTS |
| Analyse des données | 4 ECTS |
| Gestion des Risques | 9 ECTS |
| TOTAL NUMBER OF ECTS | 31 ECTS |

Semester 4

| | |
|---|----------------|
| Méthodes numériques de pricing et de calibration de modèles en finance (Numerics) | 4 ECTS |
| Produits dérivés (Seminar) | 4 ECTS |
| Projet en finance numérique (Praktikum) | 4 ECTS |
| Stage professionnel (Master thesis) | 15 ECTS |
| TOTAL NUMBER OF ECTS | 27 ECTS |

III. Scenarios for students from Munich

A. LMU-Students going to UNIBO (Bologna)

Any of the three possible paths below includes all the possible choices of courses in the 3 categories so that points sum a minimum of 30 ECTS

1. Semester 3

Path I

| | |
|--|------------------------|
| Advanced Math. Fin. or Advanced Methods in Asset Man. (Area Financial Mathematics) | 6-12 ECTS |
| Advanced Methods of Insurance (Area Actuarial Sciences) | 12 ECTS |
| Econometrics of Financial Markets (Area Statistics) | 6-12 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

Path II

| | |
|--|------------------------|
| Advanced Methods of Risk Management (Area Financial Mathematics) | 12 ECTS |
| Advanced Methods of Insurance (Area Actuarial Sciences) | 12 ECTS |
| Econometrics of Financial Markets (Area Econometrics) | 6 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

Path III

| | |
|---|------------------------|
| Advanced Math. Fin. | 6-12 ECTS |
| Advanced Methods in Asset Man. (Area Financial Mathematics) | 6-12 ECTS |
| Econometrics of Financial Markets (Area Statistics) | 6-12 ECTS |
| TOTAL NUMBER OF ECTS | 30 ECTS MINIMUM |

2. Semester 4

Path I

| | |
|---|------------------------|
| Internship (Praktikum) & final examination (thesis) | 20 ECTS |
| Workshop (Praktikum) & final examination (thesis) | 20 ECTS |
| TOTAL NUMBER OF ECTS | 20 ECTS MINIMUM |

B. LMU-Students going to UEVE (Evry)

1. Semester 3

Path I

| | |
|---|----------------|
| Processus Stocastique (Area Stochastics) | 9 ECTS |
| Gestion des Risques (Area Statistics) | 9 ECTS |
| Econométrie Financières (Area Statistics) | 9 ECTS |
| TOTAL NUMBER OF ECTS | 27 ECTS |

Path II

| | |
|--|----------------|
| Informatique pour la finance (Area Numerics) | 9 ECTS |
| Gestion des Risques (Area Statistics) | 9 ECTS |
| Econométrie Financière (Area Statistics) | 9 ECTS |
| TOTAL NUMBER OF ECTS | 27 ECTS |

2. Semester 4

Path I

| | |
|---|----------------|
| Méthodes numériques de pricing et de calibration de modèles en finance (Numerics) | 4 ECTS |
| Produits dérivés (Seminar) | 4 ECTS |
| Projet en finance numérique (Praktikum) | 4 ECTS |
| Stage professionnel (Master thesis) | 15 ECTS |
| TOTAL NUMBER OF ECTS | 27 ECTS |

Prof. Agliardi

Prof. Biagini

Prof. Crépey