

Annex 1 - SAPIENZA / DAUPHINE Double Degree Agreement — Double degree structure

First year

SAPIENZA courses recognized by DAUPHINE	Total ECTS credits	DAUPHINE courses recognized by SAPIENZA	Total ECTS credits
<p>Stochastic Processes (9 ECTS) Sample Survey (9 ECTS)</p> <p>Choose one of the following (9ECTS)</p> <ul style="list-style-type: none"> ● Bayesian Modeling (9 ECTS) ● Probability and Statistics (9 ECTS) <p>Complementary Activities (3 ECTS)</p> <p>-----</p> <p>Algorithms and Data Structures (6 ECTS) Statistical Learning (6 ECTS) Free-Choice Exams (12 ECTS)</p> <p>Choose 6 ECTS from</p> <ul style="list-style-type: none"> ● Laboratory of Stochastic Processes (3 ECTS) ● Complementary Activities (6 ECTS) ● Laboratory of Financial and Monetary Statistics (3 ECTS) ● Laboratory of Machine Learning (3 ECTS) ● Case studies and statistical consulting (3 ECTS) 	60	<p>Processus discrets (4 ECTS) Modèles linéaires et ses généralisations (4 ECTS) Optimisation (4 ECTS) Analyse des données (4 ECTS) Anglais 1 (2 ECTS) Séries temporelles (4 ECTS) Méthodes Monte-Carlo (4 ECTS) Gestion de portefeuille (4 ECTS)</p> <p>-----</p> <p>Mouvement Brownien et évaluation des actifs contingents (4 ECTS) Processus de Poisson (4 ECTS) Méthodes numériques : problèmes dépendant du temps (4 ECTS) Apprentissage statistique (4 ECTS) C++ (4 ECTS) Statistique non paramétrique (4 ECTS) Anglais 2 (2 ECTS) Projet de recherche (4 ECTS)</p>	60

Second year

Courses recognized by DAUPHINE for Master 2 students pursuing Master in Statistical Methods and Applications(SMA) – DA Track at Sapienza	Total ECTS credits	Courses recognized by Sapienza for Master in Statistical Methods and Applications(SMA) – DA Track students pursuing Master 2	Total ECTS credits
<p>Advances in Data Analysis and Statistical Modeling (9 ECTS)</p> <p>Spatial Statistics and Statistical Tools for Environmental Data (9 ECTS)</p> <p>Advanced Economic Statistics (6 ECTS)</p> <p>Data Driven Decision Making (6 ECTS)</p> <p>Laboratory of Data Driven Decision Making (3 ECTS)</p> <p>-----</p> <p>Choose one of the following (6 ECTS)</p> <ul style="list-style-type: none"> ● Computational Statistics (6 ECTS) ● Big Data Analytics (6 ECTS) ● Efficiency and productivity analysis (6 ECTS) 	33	<p>Choose 3 of the following (12 ECTS):</p> <ul style="list-style-type: none"> ● Statistiques en grandes dimensions (4 ECTS) ● Bayesian Case Studies (4 ECTS) ● Nonparametric Statistics (4 ECTS) ● Méthodes Monte Carlo par chaînes de Markov (4 ECTS) <p>Research project (20 ECTS)</p> <p>-----</p> <p>Choose 2 of the following (8 ECTS) :</p> <ul style="list-style-type: none"> ● Graphical models (4 ECTS) ● Neural networks (4 ECTS) ● Deep learning (4 ECTS) ● Reinforced learning (4 ECTS) ● Data journalism (4 ECTS) 	32
<p>Master's Thesis (21 ECTS)</p>	27	<p>Master's Thesis (20 ECTS)</p>	28

Annex 2 - SAPIENZA / DAUPHINE Double Degree Agreement - Grade conversion

ECTS Grade	ENSAI Grades	Sapienza Grades	Definition
A	16 to 20	29 to 30 lode	Pass: Outstanding performance with only minor errors
B	13.5 to 15.9	27 to 28	Pass: Above the average standard but with some errors
C	12.5 to 13.4	24 to 26	Pass: Generally sound work with a number of notable errors
D	11.5 to 12.4	21 to 23	Pass: Fair but with significant shortcomings
E	10 to 11.4	18 to 20	Pass: Performance meets the minimum passing criteria
FX	8 to 9.9	15 to 17	Fail: Some more work required before the credit can be awarded
F	< 8	<15	Fail: Considerable further work is required