

PhD in STATISTICS AND COMPUTER SCIENCE

CYCLE 42nd - COHORT 2026-2027

Please note that the study plan might be subject to minor changes.

Lessons start in early September.

The program requires full-time commitment with compulsory attendance.

The program features **two curricula** (to be chosen when applying):

- **Statistics**

- **Computer Science**

First year - a.y. 2026-27

12 compulsory courses (according to the curriculum):

Computer Science - CS curriculum : 6 out of 10 courses shared with Stat (to be chosen by July before the start of the 1st year) + 2 CS courses (compulsory for both) + 4 CS specific courses;

Statistics - STAT curriculum : 10 courses shared with CS + 2 CS courses (compulsory for both);

+ Research Ethics course (self-managed online course, compulsory for both)

+ statistics seminars organized by the Decision Sciences Department / seminars organized by the Computing Sciences Department according to the chosen curriculum

SEM.	CODE	COURSE TITLE	HOURS	COURSE DIRECTOR	CURRICULUM
1	41046	COMPUTER SCIENCE I	30	Baldassi	STAT - CS (compulsory for both)
1	41047	COMPUTER SCIENCE II	24	Rosen	STAT - CS (compulsory for both)
1	40032	INTRODUCTION TO REAL ANALYSIS I	28	Lavenant	STAT (compulsory)
					CS (to be chosen)
1	40143	INTRODUCTION TO REAL ANALYSIS II	28	Savarè	STAT (compulsory)
					CS (to be chosen)
1	40971	PROBABILITY THEORY I	28	Fortini	STAT (compulsory)
					CS (to be chosen)
1	40972	PROBABILITY THEORY II	24	Lijoi	STAT (compulsory)
					CS (to be chosen)
2	40036	STATISTICAL THEORY I	30	Szabo	STAT (compulsory)
					CS (to be chosen)
2	40144	STATISTICAL THEORY II	30	Szabo	STAT (compulsory)
					CS (to be chosen)
2	40027	STOCHASTIC PROCESSES I	24	Fortini	STAT (compulsory)
					CS (to be chosen)
2	40142	STOCHASTIC PROCESSES II	24	Pruenster	STAT (compulsory)
					CS (to be chosen)
2	40025	BAYESIAN STATISTICAL THEORY I	24	Lijoi	STAT (compulsory)
					CS (to be chosen)
2	40140	BAYESIAN STATISTICAL THEORY II	24	Petrone	STAT (compulsory)
					CS (to be chosen)
1	40999	OPTIMIZATION	24	Celli	CS
1	41002	STATISTICAL MECHANICS AND METHODS FOR COMPLEX SYSTEMS	24	Mezard	CS
2	41000	GRAPH THEORY	24	Sanità	CS
2	41001	MODERN APPLIED MACHINE LEARNING	30	Lucibello	CS
1-2	41065	PRINCIPLES OF RESEARCH ETHICS	2		STAT - CS (compulsory for both)

Requirements to pass to the next year

Exam for each course.

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Second year - a.y. 2027-28

Summer School (end of 1st year)

STAT curriculum: 9 courses + 1 course taught by Visiting Professor + Statistics seminars organized by Decision Sciences Department

CS Curriculum: Reading group + 1 course taught by Visiting Professor + CS seminars organized by the Computing Sciences Department

Open Science For Researchers Workshop (Elective offered by Bocconi Library, for both curricula)

SEM.	CODE	COURSE TITLE	HOURS	COURSE DIRECTOR	CURRICULUM
Summer		SUMMER SCHOOL in ADVANCED STATISTICS AND PROBABILITY organized by Bocconi, in collaboration with University of Oxford and Imperial College London		Petrone	Compulsory for STAT. CS students may choose, as an alternative, a Summer School from other institutions whose contents are in line with the qualifying goals of the curriculum.
1	40010	BAYESIAN NONPARAMETRICS	30	Pruenster	STAT
1	40998	APPLIED MULTIVARIATE ANALYSIS	24	Piccarreta	STAT
1	40046	COMPUTATIONAL STATISTICS	24	Papaspiliopoulos	STAT
1	41003	STATISTICAL MACHINE LEARNING	24	Durante	STAT
1	40390	STATISTICS FOR EXTREMES	24	Padoan	STAT
1	40331	BAYESIAN METHODS FOR COMPLEX DATA	24	TBA	STAT
2	41004	DESIGN AND ANALYSIS OF COMPUTER EXPERIMENTS	24	Borgonovo	STAT
2	41006	APPLIED SURVIVAL DATA ANALYSIS	24	Bonetti	STAT
2	41005	ADVANCED COMPUTATIONAL STATISTICS	24	Zanella	STAT
1-2	41075	SPECIAL TOPICS IN STATISTICS	14	Visiting Professor	STAT
1-2	41076	SPECIAL TOPICS IN COMPUTER SCIENCE	14	Visiting Professor	CS
1-2	41077	READING GROUP ON MOST ADVANCED TOPICS IN COMPUTER SCIENCE	24	D'Orsi	CS

Requirements to pass to the next year

Exam for each course/reading group.

Research project and thesis project.

Third and Fourth year - a.y. 2028-29 and 2029-30

Both curricula:

- Study/research period at other Universities;
- Teaching/Teaching Assistantship/Research Assistantship activities (optional);
- conferences (as a listener and as a speaker);
- statistics seminars organized by the Decision Sciences Department / seminars organized by the Computing Sciences Department according to the chosen curriculum;
- submission of mid-term doctoral thesis (at least a first research paper is expected) (at the end of 3rd year);
- thesis submission to external reviewers (at end of 4th year);
- thesis dissertation.