7 July 2016

Degrees in Mathematics

Extract from the Bulletin (*Notiziario) 2016-2017* (*)

COURSES PROGRAMME MATHEMATICS

Academic Year 2016/2017

I Semester:

Monday 3, October 2016 – Friday 13, January 2017

Exams Season:

Monday 16, January –Tuesday 28, February 2017

II Semester:

Wednesday 1, March – Tuesday 6, June 2017

Exams Season:

Wednesday 7, June – Friday 29, September 2017

(*) Available to the address
http://www.dmi.unipg.it/MatematicaNotiziario

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Notes

The ***3+2*** degree courses give a *Bachelor degree* (or, a *first level degree*) after 3 years, and a *Master degree* (or, a *second level degree*) after a further 2 years.

From the Academic Year 2016/2017 four different Master's curricula are active,
Didactic-General (DG), Economics and Finance (EF), Information Security (SI), Science for Life (SV)
www.dmi.unipg.it

1 CFU=1 ECTS is earned by attending 7 hours of lectures (12 hours in case of Laboratory).

Almost all lectures are held in **Italian language** with the exception of **some course of the Master degree** that may be held in **English** or, in **English on request**, in agreement with the enrolled students (cf. Masters' Planning, p.7)
(recommended level of language skills: B1) (*)

For several courses examinations may be performed in English on request

Attendance of the lectures is warmly recommended (**).

(*) An **Italian Language course**, **free of charge**, will be offered by the Università degli Studi di Perugia to Erasmus Students who will be attending courses at our University during the academic year 2016/2017, in two periods, September 2016 and February 2017.....*continue to the link:*
http://cla.unipg.it/en/erasmus-incoming.html

(**) The training offer for the Bachelor and the Master Degrees in Mathematics is also available to the link
http://www.unipg.it/en/courses/bachelor-master-degrees
http://www.unipg.it/en/courses/bachelor-master-degrees/course-catalogue-2016-17
--->*Departement of Mathematics and Computer Science*

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AA 2016-2017
Courses at the first level (*Bachelor*): Mathematics
Complete List

NAME	CFU ECTS	Year / Semester	Sector	LECTURER
ALGEBRA I (Algebra I)	6	1 -I	MAT/02	BURATTI Marco
ALGEBRA II (Algebra II)	9	1 -II	MAT/02	LORENZINI Anna
ANALISI MATEMATICA I (Mathematical Analysis I)	9	1 - I	MAT/05	BRANDI Primo
ANALISI MATEMATICA II (Mathematical Analysis II)	9	2 - I	MAT/05	CARDINALI Tiziana
ANALISI MATEMATICA III (Mathematical Analysis III)	9	2 – II	MAT/05	FILIPPUCCI Roberta
ANALISI MATEMATICA IV (Mathematical Analysis IV)	9	3 – I	MAT/05	PUCCI Patrizia
ANALISI NUMERICA (Numerical Analysis)	9	3 - II	MAT/08	IANNAZZO Bruno
FISICA I (Physics I)	9	1 – II	FIS/01	MADAMI Marco
FISICA II (Physics II)	9	2 - II	FIS/01	CECCHI Claudia
FISICA MATEMATICA 1 (Mathematical Physics 1)	6	3 - II	MAT/07	SALVATORI Maria Cesarina
GEOMETRIA I (Geometry I)	9	1 - I	MAT/03	VINCENTI Rita
GEOMETRIA II (Geometry II)	9	1 - II	MAT/03	CATERINO Alessandro
GEOMETRIA III (Geometry III)	9	2 - I	MAT/03	FATABBI Giuliana
GEOMETRIA IV (Geometry IV)	9	3 - I	MAT/03	CICCOLI Nicola
INFORMATICA I (Computer Science I)	6	1 - I	INF/01	BAIOLETTI Marco
INFORMATICA II (Computer Science II)	9	2 - I	ING-INF/05	FORMISANO Andrea

MECCANICA RAZIONALE I (Rational Mechanics I)	9	3– I	MAT/07	NUCCI Maria Clara
MODELLI e METODI MATEMATICI (Models and Mathematical Methods for Economics)	6	Free - I	MAT/05	BRANDI Primo
PROBABILITA' E STATISTICA I	6	2 -II	MAT/06	COLETTI Giulianella
(Probability and Statistics) Module 1 and Module 2	“	“	“	CAPOTORTI Andrea
STORIA DELLE MATEMATICHE I (History of Mathematics)	6	Free - I	MAT/04	NUCCI Maria Clara
22. TOPOLOGIA I (Topology I)	6	Free - II	MAT/03	STRAMACCIA Luciano

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AA 2016-2017
Courses at the second level (*Master*): Mathematics
Complete list

NAME	CFU ECTS	Year / Semester	Sector	LECTURER
ALGEBRA COMMUTATIVA E COMPUTAZIONALE (Commutative and Computational Algebra)	6 or 9	Free - I	MAT/02	LORENZINI Anna
ALGORITMI DI RICOSTRUZIONE DELLA IMMAGINI (Image Reconstruction Algorithms)	6	1– II	MAT/05	ANGELONI Laura
ANALISI DI FOURIER (Fourier Analysis)	9	1– I	MAT/05	BARDARO Carlo
ANALISI FUNZIONALE (Functional Analysis)	9	1– II	MAT/05	PUCCI Patrizia
ANALISI FUNZIONALE APPLICATA (Applied Functional Analysis)	6 or 9	2- I	MAT/05	VITILLARO Enzo
ANALISI MODERNA (Advanced Analysis)	6	Free - I	MAT/05	MUGNAI Dimitri
APPLIED IMAGE PROCESSING	4+2 **(*)**	2-II	MAT/05	VINTI Gianluca
APPROSSIMAZIONE NUMERICA E APPLICAZIONI (Numerical Approximation and Applications)	6	Free- I	MAT/08	IANNAZZO Bruno
CALCOLABILITA'E COMPLESSITA' COMPUTAZIONALE (Computability and Computational Complexity)	6	2 - I	INF/01	CARPI Arturo
COMBINATORICS	6	Free– II	MAT/03	VINCENTI Rita
CRITTOGRAFIA E APPLICAZIONI (Cryptography and Applications)	6	1– II	MAT/03	GIULIETTI Massimo
DIAGNOSTICA PER IMMAGINI (Diagnostic Imaging)	6	2 – I	FIS/07	CAMPANELLA Renzo
EQUAZIONI DIFFERENZIALI (Differential Equations)	6	1 – II	MAT/05	CARDINALI Tiziana

FONDAMENTI DI GEOMETRIA (Foundations of Geometry)	6	1– II	MAT/03	GUERRA Lucio
GAMES AND DECISION THEORY	6	2 – I	MAT/06	PETTURITI Davide
GEOMETRIA ALGEBRICA (Algebraic Geometry)	6 or 9	2 – I	MAT/03	TANCREDI Alessandro
GEOMETRIA DIFFERENZIALE (Differential Geometry)	9	1– I	MAT/03	CICCOLI Nicola
MATEMATICHE COMPLEMENTARI (Complementary Mathematics)	6	1 – II	MAT/04	FAINA Giorgio
MATHEMATICAL FINANCE	6	1 – II	SECS-S/06	CRETAROLA Alessandra
MATHEMATICAL METHODS FOR ECONOMICS	6	Free - I	MAT/05	BENEDETTI Irene
METODI DELLA FISICA MATEMATICA (Methods of Mathematical Physics)	6	1 - II	MAT/07	DE LILLO Silvana
METODI GEOMETRICI IN TEORIA DELLA RELATIVITA' (Geometric Methods in the Theory of Relativity)	6	Free – I	MAT/03	MAMONE CAPRIA Marco
MODELLI E METODI MATEMATICI (Mathematical Models and Methods)	6	Free – I	MAT/05	BRANDI Primo
MODELLI GEOMETRICI (Geometrical Models)	6	Free – I	MAT/03	UGHI Emanuela
METODI MATEMATICI PER LE APPLICAZIONI (Mathematics Models for Applications)	6	Free – I	MAT/07	DE LILLO Silvana
MODELLISTICA NUMERICA (Numerical Models)	5+1 **(*)**	Free – I	MAT/08	GERACE Ivan
MODERN PHYSICS	6	Free – I	FIS/03	BUSSO Maurizio
PHYSICS EXPERIMENTS	6	Free – I	FIS/01	SANTOCCHIA Attilio
PROBABLITA' E STATISTICA(Probability and Statistics II) mod I	6	1– II	MAT/06	CAPOTORTI Andrea
PROBABLITA' E STATISTICA (Probability and Statistics II) mod II	3	1– II	MAT/06	PETTURITI Davide

PROCESSI STOCASTICI ED EQUAZIONI DIFFERENZIALI STOCASTICHE (Stochastic Processes and Stochastic Differential Equations)	6	2 – I	MAT/05	CANDELORO Domenico
PROGRAMMAZIONE II (Programming II)	6	1 – I	INF/01	FORMISANO Andrea
SICUREZZA INFORMATICA (Information Security)	5+1 **(*)**	2 - II	INF/01	BISTARELLI Srefano
STORIA DELLE MATEMATICHE I (History of Mathematics I)	6	1 - II	MAT/04	NUCCI Maria Clara
SYMMETRIES OF MATHEMATICAL MODELS	6	Free - I	MAT/07	NUCCI Maria Clara
TEORIA DEI CODICI (Coding Theory)	6	1 - I	MAT/03	GULIETTI Massimo
TEORIA DELLA APPROSSIMAZIONE (Approximation Theory)	6 or 9	1 - II	MAT/05	VINTI Gianluca
TOPOLOGIA (Topoloy)	6	1 - II	MAT/03	STRAMACCIA Luciano

(*) Such 1 credit is equivalent to 12 hours laboratory.

Continue to the planning of the Master'curricula

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A.Y. 2016-2017 Master Degrees in Mathematics - Planning

CURRICULUM DIDACTIC-GENERAL (DG)

I YEAR – I SEMESTER	*I YEAR – II SEMESTER*
Commutative and Computational Algebra – MAT/02 – 6CFU (Characterizing – Theoretical Advanced Education) from SI **A.Lorenzini**	**Functional Analysis – MAT/05 – 9CFU** (Characterizing – Theoretical Advanced Education) **P.Pucci**
GROUP A: 2 choices (eachone **6 CFU** – 42 hoursRelated Activities)	**GROUP B: 2 choices** (eachone **6 CFU**– 42 hoursRelated Activities)
Advanced Analysis (**) – MAT/05 D.Mugnai	**Combinatorics (*) – MAT/03** from SI **R.Vincenti**
Geometric Methods in the Theory of Relativity – MAT/03 M.Mamone Capria	**Complementary Mathematics – MAT/04 G.Faina**
Geometric Models (**) – MAT/03 E.Ughi	**Differential Equations – MAT/05 T.Cardinali**
Mathematical Methods for Economics (*) – MAT/05 from EF **I.Benedetti**	**Foundations of Geometry – MAT/03 L.Guerra**
Mathematical Models and Methods – MAT/05 P.Brandi	**History of Mathematics I – MAT/04 M.C.Nucci**
Mathematical Models for Applications – MAT/07 from SV **S.De Lillo**	**Mathematical Finance (*) – SECS–S/06** from EF **A.Cretarola**
Numerical Approximation and Applications – MAT/08 from SV **B.Iannazzo**	**Probability and Statistics II – mod.I (**) – MAT/06** from EF **A.Capotorti**
Numerical Modelling – MAT/08 from SV **L.Gerace**	**Topology I – MAT/03**
Modern Physics (*) – FIS/03 M.M.Busso	
Physics Experiments (*) – FIS/01 A.Santocchia	
Symmetries of Mathematical Models (*) – MAT/07 M.C.Nucci	
Differential Geometry – MAT/03– 9CFU (Characterizing – Theoretical Advanced Education) **N.Ciccoli**	**Methods of Mathematical Physics – MAT/07– 6CFU** (Characterizing – Application Modelling Education) **S.De Lillo**
II ANNO – I SEMESTRE	*II ANNO – II SEMESTRE*
Applied Functional Analysis – MAT/05– 9CFU (Characterizing –	**Further learning activities – 3 CFU**

Theoretical Advanced Education) **E.Vitillaro**	
Algebraic Geometry – MAT/03– 9CFU (Characterizing – Theoretical Advanced Education) **A.Tancredi**	
1 choice from **GROUP A**	
1 Free choice – 6CFU	**Master Thesis – 27 CFU**

KEYS: **(*) In English**
(**) In English on request
EF: Mathematics, Master Curriculum EF for *Economia e Finanza (Economics and Finance*)
SI: Mathematics, Master Curriculum SI for *Sicurezza Informatica (Informatics Security*)
SV: Mathematics, Master Curriculum SV for *Scienza e Vita (Science and Life*)

CURRICULUM for ECONOMICS AND FINANCE (EF)

I YEAR – I SEMESTER	*I YEAR – II SEMESTER*
Fourier Analysis – MAT/05 – 9CFU (Characterizing – Theoretical Advanced Education) from SV **C.Bardaro**	**Functional Analysis – MAT/05 – 9CFU** from DG (Characterizing – Theoretical Advanced Education) **P.Pucci**
Differential Geometry – MAT/03– 9CFU (Characterizing – Theoretical Advanced Education) from DG **N.Ciccoli**	**Probability and Statistics II – 9CFU** (Related Activities) from DG **(**)** **– MAT/06 A.Capotorti&D.Petturiti**
Numerical Models – MAT/08–6CFU (Related Activities) from SV **I.Gerace**	**Approximation Theory – MAT/05 - 9CFU** (Characterizing – Theoretical Advanced Education) **G.Vinti**
Mathematical Models for Applications – MAT/07– 6CFU (Characterizing – Theoretical Advanced Education) from SV **S.De Lillo**	**1 Free choice – 6CFU**
II ANNO – I SEMESTRE	***II ANNO – II SEMESTRE***
Stochastic Processes and Stochastic Differential Equations – MAT/05– 6CFU (Characterizing – Theoretical Advanced Education) **D. Candeloro**	**Further learning activities – 3 CFU**
	Mathematical Finance (*) – SECS-S/06 – 6CFU (Related Activities) **A.Cretarola**
1 Choise from: **Games and Decision Theory (*)– MAT/06 – 6CFU** (from LMI Informatics, **Decision Support and Recommended System)**(Related Activities) **D.Petturiti** **Mathematical Methods for Economics (*) – MAT/05 – 6CFU** (Related Activities) **I.Bendedetti**	

1 Choise from: **Commutative and Computational Algebra – MAT/02 − 6CFU** (Characterizing − Theoretical Advanced Education) from SI **A.Lorenzini** **Applied Functional Analysis – MAT/05− 9CFU** (Characterizing − Theoretical Advanced Education) from DG **E.Vitillaro**	
1 Free choice − 6CFU	**Master Thesis − 24 CFU**

KEYS: **(*) In English**
DG: Mathematics, Master Curriculum DG Didattico-Generale (*Didactics-General*)
LMI: Informatics, Master
SI: Mathematics, Master Curriculum SI for *Sicurezza Informatica (Informatics Security*)
SV: Mathematics, Master Curriculum SV for *Scienza e Vita (Science and Life*)

CURRICULUM for INFORMATION SECURITY (SI)

I YEAR – I SEMESTER	*I YEAR – II SEMESTER*
Commutative and Computational Algebra – MAT/02−6CFU (Characterizing − Theoretical Advanced Education) from SI **A.Lorenzini**	**Functional Analysis – MAT/05 − 9CFU** from DG (Characterizing − Theoretical Advanced Education) **P.Pucci**
Coding Theory – MAT/03−6CFU (Characterizing − Theoretical Advanced Education) **M.Giulietti**	**Probability and Statistics II – 9CFU (**Related Activities**)** from DG **(**)** **– MAT/06** from EF **A.Capotorti&D.Petturiti**
Differential Geometry – MAT/03− 9CFU (Characterizing − Theoretical Advanced Education) **N.Ciccoli**	**Cryptography and Applications – MAT/03 − 6CFU** (Characterizing − Theoretical Advanced Education) from LMI **M.Giulietti**
Programming II – INF/01 − 6CFU from LMI (Related Activities) **A.Formisano**	**1 Free choice − 6CFU**
II ANNO – I SEMESTRE	*II ANNO – II SEMESTRE*
Mathematical Models for Applications – MAT/07− 6CFU (Characterizing − Theoretical Advanced Education) from SV **S.De Lillo**	**Further learning activities − 3 CFU**
Algebraic Geometry – MAT/03− 6CFU (Characterizing − Theoretical Advanced Education) from DG **A.Tancredi**	
1 Choise from: **Numerical Modelling – MAT/08 − 6CFU** from SV **L.Gerace**	**1 Choise from:** **Information Security – INF/01 - 6CFU** from LMI **S.Bistarelli**

Numerical Approximation and Applications – MAT/08 - 6CFU from SV **B.Iannazzo** **Computability and Computational Complexity – INF/01 - 6CFU** from LMI **A.Carpi**	**Combinatorics (*) – MAT/03** from SI **R.Vincenti**
1 Free choice − 6CFU	**Master Thesis − 27 CFU**

KEYS: **(*) In English**
(**) In English on request
DG: Mathematics, Master Curriculum DG Didattico-Generale (*Didactics-General*)
EF: Mathematics, Master Curriculum EF for *Economia e Finanza (Economics and Finance*)
LMI: Informatics, Master
SI: Mathematics, Master Curriculum SI for *Sicurezza Informatica (Informatics Security*)
SV: Mathematics, Master Curriculum SV for *Scienza e Vita (Science and Life*)

CURRICULUM SCIENCE AND LIFE (SV)

I YEAR – I SEMESTER	*I YEAR – II SEMESTER*
Fourier Analysis – MAT/05 − 9CFU (Characterizing − Theoretical Advanced Education) **C.Bardaro**	**Functional Analysis – MAT/05 − 9CFU** from DG (Characterizing − Theoretical Advanced Education) **P.Pucci**
Numerical Models – MAT/08−6CFU (Related Activities**) I.Gerace**	**Approximation Theory – MAT/05 - 9CFU** (Characterizing − Theoretical Advanced Education) **G.Vinti**
Differential Geometry – MAT/03− 9CFU (Characterizing − Theoretical Advanced Education) **N.Ciccoli**	**Probability and Statistics II – mod.I (*) – MAT/06 (**Related Activities**)** from EF **A.Capotorti**
	Image Reconstruction Algorithms – MAT/05 - 6CFU (Characterizing − Theoretical Advanced Education) from LM **L.Angeloni**
	1 Free choice − 6CFU
II ANNO – I SEMESTRE	***II ANNO – II SEMESTRE***
Mathematical Models for Applications – MAT/07− 6CFU (Characterizing − Theoretical Advanced Education) **S.De Lillo**	**Further learning activities − 6 CFU**
Diagnostic Imaging – FIS/07− 6CFU (Related Activities**)** from LM **R.Campanella**	**Applied Image Processing – MAT/05− 6CFU** (Characterizing − Theoretical Advanced Education) **G.Vinti**
Numerical Approximation and Applications – MAT/08 – 6CFU (Related	

Activities) **B.Iannazzo**	
1 Free choice − 6CFU	**Master Thesis − 24 CFU**

KEYS: **(*) In English on request**
DG: Mathematics, Master Curriculum DG *Didattico-Generale* (*Didactics-General*)
EF: Mathematics, Master Curriculum EF for *Economia e Finanza (Economics and Finance*)
LMI: Informatics, Master

The content of the courses can be found to the link:
http://www.unipg.it/en/courses/bachelor-master-degrees

– **For each course:**

- the *subtitle* describes the content in brief

- the *year* suggests the year of the *bachelor degree* or of the *master degree*

- the *semester* states in *which of the two semesters of the year* the course is held

- the *sector* indicates the code of the scientific area of the content

- the *prerequisites* suggest pre-course requirements.

- the *hours* are the total number of hours of lessons in the semester *in lecture-hall*, inclusive of practice, *laboratory*

- 1 ECTS of theoretical lessons is equivalent to 1 CFU (Crediti Formativi Universitari) that consists of 7 hours *in lecture-hall* plus 18 hours of *individual study*, respectively.

Links to further information: http://www.dmi.unipg.it/Matematica
Office hours: http://www.dmi.unipg.it/MatematicaOrarioRicevimento