

APPLIED MATHEMATICS AND COMPUTER SCIENCE (IMI) OPTIMISATION TRACK 2024 - 2025		
YEAR 2 (M1) OF ENPC MSc IN ENGINEERING		ECTS
INCEPTION WEEKS (MANDATORY)		6,5
September 2nd to 6th	Hackathon - 02MME*	1
September 9th to 13th	Business management - 02GE1	1,5
September 16th to 20th	Department study trip - 02IMI	1
November 18th to 22nd	ATHENS Week	1,5
March 31st to April 4th	Interdepartment inception week	1
February 3rd to 7th	IMI inception week - 02MET	0,5
CORE CURRICULUM (MANDATORY)		20,5
S3	Statistics and data analysis - STAT	3
S3 or S4	Course to be chosen in the Humanities and Social Sciences Department (SHS)	3
S3 & S4	Languages	7,5
S3 & S4	Sport	1
S4	Introduction to law - DROE/DROA	3
	Coaching and career guidance - AOP2	0,5
	Engineer internship (short or long)	2,5
MANDATORY COURSES FOR IMI OPTIMISATION TRACK		22
S3	Advanced programming and algorithmics - PRALG	2
S3	Stochastic processes and applications - SPA	3
S3	Game theory - THEOJ (SEGF)	3
S3	Operations research - REOP (GI)	3
S4	Optimization - OPTIM	3
S4	Vagary and real time in the supply chain - ATRSC (GI)	3
S4	IMI department senior project - IMIP2	5
MANDATORY COURSES TO BE CHOSEN ON A LIST (2 courses among the 7 following ones)		4 to 6
S3	Software design and development - TDLOG	3
S3	Deep Learning - DEEPL	2
S4	Finite elements - ELEF	2
S4	Stochastic calculus and finance - METMF	3
S4	Machine learning - MALAP	3
S4	Large dimension statistics - HISTA	3
S4	Image processing and computer vision - TRIVA	3
ELECTIVE COURSES Please choose courses in the whole school catalogue so as to reach 60 ects for S3+S4		
TOTAL YEAR 2 (M1)		60

S3 = Fall semester - S4 = Spring semester

* This code is the course's code in our online catalogue (<http://gede.enpc.fr/Programme/Default.aspx?Langue=en>)

Letters in brackets stand for the department (other than IMI) which delivers the course :

- GCC : Génie Civil et Construction - Civil and Structural Engineering
- GMM : Génie Mécanique et Matériaux - Mechanical Engineering and Materials Science
- GI : Génie Industriel - Industrial engineering
- SEGF : Sciences économiques, Gestion, Finance - Economics, Management, Finance
- VET : Ville Environnement Transport - City, Environment, Transportation
- SHS - Sciences Humaines et Sociales - Humanities and Social Sciences

APPLIED MATHEMATICS AND COMPUTER SCIENCE (IMI) OPTIMISATION TRACK 2024 - 2025		
YEAR 3 (M2) OF ENPC MSc IN ENGINEERING		ECTS
ALL OPTIONS : MANDATORY COURSES AND INCEPTION WEEKS		6
S5	Feedback on Engineer internship (only for long internships) - 03STA*	1,5
S5	Languages	4,5
OPTION 1 : MPRO** Master program + End of study Project		85,5
S5	All the necessary courses to validate MPRO Master program https://uma.ensta-paris.fr/mpro/master2_	25,5
S6	Master internship	30
S7	End-of-study project (Fall semester N+1)	30
OPTION 2 : Mix of MPRO Master program and additional courses @ School		70,5
S5	All the necessary courses to validate MPRO Master program	25,5
S5	Additional courses***	15
S6	Master internship equivalent to end-of-study project	30
OPTION 3 : 3A @ School (Data Science or Green and Sustainable Finance track)		57
S5	Economic intelligence - 03INT (SEGF)	1,5
S5	Year 3 courses of "Sustainable and Green Finance (SGF)" or "Data Science for Industry" tracks SGF https://ecoledesponts.fr/en/apply-non-degree-exchange-mobility_ Data Science See below	25,5
S6	End-of-study project	30

DATA SCIENCE FOR INDUSTRY TRACK (with GI Department)		
Mandatory courses		23
S5	Data Science Project - PRDS (GI)	2
S5	Automatic learning for operational research - ROAPA (GI)	2
S5	Artificial intelligence for man-machine collaboration - IACHM (GI)	3
S5	Systems engineering - INSYS (GI)	2
S5	Strategic management of companies - MSTRa (GI)	3
S5	Machine Learning and Applications - MSAMA (MFD Master)	6
S5	Introduction to artificial vision (ENS Ulm) - ENSVI	3
S5	Deep Learning - DEEPL	2
ELECTIVE COURSES		
Please choose courses in these Master programs so as to reach 30 ects for S5		
S5	MVA	https://ecoledesponts.fr/en/masters-mathematics-vision-learning
S5	MPRO**	https://uma.ensta-paris.fr/mpro/master2_
S5	MFD	https://ecoledesponts.fr/en/masters-mathematics-finance-and-data-mfd

S5 = Fall semester - S6 = Spring semester

* This code is the course's code in our online catalogue (<http://gede.enpc.fr/Programme/Default.aspx?Langue=en>)

** MFD : Mathematics for Finance and Data

** MVA : Mathematics Vision Learning

** MPRO : Paris Master in Operational Research

*** Department projects and M2 courses which are not taken into account to validate the Master

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