

Master in Quantum Science and Technology, Barcelona

Practical Details, v1.0, 11/10/2023

2023-2024

quantummasterbarcelona.eu/



Important dates



REGISTRATION:

11th - 15th of September 2023

COURSE STARTS:

12th September 2023

ENTREPRENEURSHIP WEEK

TBA ~ Feb 2024

QUANTUM CAREER SYMPOSIUM

TBA ~ Apr 2024

INAUGURATION / GRADUATION

Sep 8th, 5pm, University of Barcelona

MASTER THESIS SELECTION

Dec 1st 2023-Jan 31st 2024

INTERNSHIP & DIRECTED RESEARCH PROJECTS

From Oct 9th 2023

TEACHING BLOCKS:

[BLOCK 1:](#) Sep 12th-Oct 6th: Quantum Core Subjects (Mandatory)

[BLOCK 2:](#) Oct 9th-Nov 10th: Quantum Core Subjects + Electives 1

[BLOCK 3:](#) Nov 13th-Nov 24th_ Electives 1

[BLOCK 4:](#) Dec 11th-Dec 22rd and Jan 8th-Feb 2nd Electives 2

[BLOCK 5:](#) TBA Entrepreneurship & Innovation

BLOCK 6: Feb 12th-Mid July: Master Thesis

HOLIDAYS:

Oct 12th-13th, Nov 1st, Dec 6th-8th 2023

Christmas: Dec 24rd-Jan 7th , 2024

Easter: Mar 29th-Apr 1st , 2024

CALENDAR LINK:

<https://calendar.google.com/calendar/u/1?cid=cXVhbnR1bW1hc3RlckBmcWEudWluZWV1>

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Calendar. Academic year 2022-2023



September	October	November	December
<ul style="list-style-type: none"> - Master starts 12th - Quantum Core 	<ul style="list-style-type: none"> - Quantum Core - Electives 1 	<ul style="list-style-type: none"> - Exams Quantum Core - Electives 1 	<ul style="list-style-type: none"> - Electives 2
January	February	March	April
<ul style="list-style-type: none"> - Electives 2 	<ul style="list-style-type: none"> - Electives 2 - Exams electives - Master Thesis 	<ul style="list-style-type: none"> - Master Thesis 	<ul style="list-style-type: none"> - Master Thesis - Entrepreneurship & Innovation - Annual Career Symposium - Reevaluation
May	June	July	August / September
<ul style="list-style-type: none"> - Master Thesis 	<ul style="list-style-type: none"> - Master Thesis 	<ul style="list-style-type: none"> - Master Thesis defense 	<p>Well deserved Holidays + Reevaluation Master Thesis</p>



Calendar LINK:

<https://calendar.google.com/calendar/u/2?cid=cXVhbnR1bW1hc3RlckBmcWEudWluZWV1>

Mandatory Quantum Core subjects

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
08:00-09:00	QUANTUM INFORMATION THEORY (N06M)		QUANTUM INFORMATION THEORY (N06M)		QUANTUM INFORMATION THEORY (N06M)
09:00-10:00					
10:00-11:00		ADVANCED QUANTUM MECHANICS (FA24M)		ADVANCED QUANTUM MECHANICS (FA24M)	ADVANCED QUANTUM MECHANICS (FA33M)
11:00-12:00					
12:00-13:00	CONDENSED MATTER (FA11G)		CONDENSED MATTER (FA11G)	CONDENSED MATTER (FA25M)	
13:00-14:00					

BLOCK 2: OCT 9TH - NOV 10TH, FACULTAT DE FISICA, UB



	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
08:00-09:00	QUANTUM INFORMATION THEORY		QUANTUM INFORMATION THEORY		QUANTUM INFORMATION THEORY
09:00-10:00					
10:00-11:00		ADVANCED QUANTUM MECHANICS		ADVANCED QUANTUM MECHANICS	ADVANCED QUANTUM MECHANICS
11:00-12:00					
12:00-13:00	CONDENSED MATTER		CONDENSED MATTER	CONDENSED MATTER	
13:00-14:00					
14:00-15:00		QUANTUM OPTICS (A23M)	MONTECARLO METHODS (A02I)	MONTECARLO METHODS (A02I)	QUANTUM OPTICS (A23M)
15:00-16:00					
16:00-17:00	QUANTUM STATISTICAL INFERENCE (A44M)	FROM COOLING AND TRAPPING (A23M)	QUANTUM STATISTICAL INFERENCE (A44M)		FROM COOLING AND TRAPPING (A23M)
17:00-18:00					
18:00-19:00	SOLID STATE SIMULATION TECH (A44M)	QUANTUM FIELD THEORY (A44M)	SOLID STATE SIMULATION TECH (A44M)	QUANTUM FIELD THEORY (A44M)	
19:00-20:00					

BLOCK 3: NOV 13TH - 24TH, FACULTAT DE FISICA, UB



	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
09:30-10:30	ELECTRONICS FOR THE QTECH LAB (N13L)				ELECTRONICS FOR THE QTECH LAB (N13L)
10:30-11:30					
11:30-12:30					
12:30-13:00					
13:00-14:00					
14:00-15:00		QUANTUM OPTICS (A23M)	MONTECARLO METHODS (A02I)	MONTECARLO METHODS (A02I)	QUANTUM OPTICS (A23M)
15:00-16:00					
16:00-17:00	QUANTUM STATISTICAL INFERENCE (A44M)	FROM COOLING AND TRAPPING (A23M)	QUANTUM STATISTICAL INFERENCE (A44M)		FROM COOLING AND TRAPPING (A23M)
17:00-18:00					
18:00-19:00	SOLID STATE SIMULATION TECH (A44M)	QUANTUM FIELD THEORY (A44M)	SOLID STATE SIMULATION TECH (A44M)	QUANTUM FIELD THEORY (A44M)	
19:00-20:00					

CORE EXAMS+LABS: NOV 27TH - DEC 4TH, FACULTAT DE FISICA, UB



	MONDAY, NOV 27TH	TUESDAY, NOV 28TH	WEDNESDAY, NOV 29TH	THURSDAY, NOV 30TH	MONDAY DEC 4TH
09:30-10:30	ELECTRONICS FOR THE QTECH LAB (N13L)	EXAM ADV QUANTUM MECHANICS	ELECTRONICS FOR THE QTECH LAB (N13L)	EXAM QUANTUM INFORMATION THEORY	EXAM CONDENSED MATTER
10:30-11:30					
11:30-12:30					
12:30-13:00					
13:00-14:00					

BLOCK 4: DEC 11TH - FEB 2TH, FACULTAT DE FISICA, UB



	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
09:00-10:00	QTECH SUPERCONDUCTING CIRCUITS (FA27P)	QUANTUM MATERIALS (FA27P)	QTECH SUPERCONDUCTING CIRCUITS (FA27P)	QUANTUM MATERIALS (FA27P)	ELECTRONICS FOR THE QTECH LAB N11L (from 9:30 to 11:30)
10:00-11:00					
11:00-12:00	ADVANCED QUANTUM INFORMATION	QUANTUM SENSING (FA27P)	ADVANCED QUANTUM INFORMATION	QUANTUM SENSING (FA27P)	
12:00-13:00					
13:00-14:00					
14:00-15:00	ADV QUANTUM OPTICS (QUANTOP)	QUANTUM COMMUNICATIONS (FA43M)	ADV QUANTUM OPTICS (QUANTOP)	QUANTUM COMMUNICATIONS (FA43M)	TENSOR NETWORKS (A44M)
15:00-16:00					
16:00-17:00	QUANTUM COMPUTING (A43M)	ELECTRONICS FOR THE QTECH LAB	TENSOR NETWORKS (A44M)	QUANTUM COMPUTING (A43M)	QUANTUM SIMULATORS (QUANTOP)
17:00-18:00					
18:00-19:00	QUANTUM SIMULATORS (QUANTOP)	MACHINE LEARNING (A03I)		MACHINE LEARNING (A03I)	
19:00-20:00					

BLOCK 5: ENTREPRENEURSHIP AND INNOVATION (TBC)



	Feb 15th (StartUB F. Economia)	March 13th (ICFO)	April 19th (StartUB F. Economia)	May 16th (StartUB F. Economia)	June 13th (StartUB F. Economia)	July 3th (ICFO)
10:00-13:00	Fundamentals of Innovation (Cirera)	Fundamentals of IP (Cunningham)	Entrepreneurship (Cirera)	Entrepreneurship (Cirera)	Sustainable business models (Cirera)	Elevator Pitch (evaluation)
14:00-18:00	Entrepreneurship and Innovation	Entrepreneurship and Innovation	Entrepreneurship and Innovation	Entrepreneurship and Innovation	Entrepreneurship and Innovation	



EXAMS AND EVALUATION PROCEDURE: Professors of each course decide the assessment procedure, as pointed out in the Course Contents. Exams are scheduled at the end of each teaching block. Exceptionally, other examination activities might be performed outside the exams week schedule.

EXAMS MANDATORY SUBJECTS (QUANTUM CORE)

ADVANCED QUANTUM MECHANICS	Nov 28th
CONDENSED MATTER	Dec 4th
QUANTUM INFORMATION THEORY	Nov 30th

EXAMS ELECTIVE SUBJECTS (WHEN NEEDED)

ELECTIVES: Feb 5th-Feb9th 2024

REEVALUATION EXAMS

Apr 8th-Apr12th 2024

MASTER THESIS DEFENSE

Jul 15, 16, and 17 2024

MASTER THESIS REEVALUATION

Sep 2nd-Sep3th 2024

VISIT TO PARTICIPATING INSTITUTIONS



All students are welcome to participate in visits to the participating institutions to get a first hand knowledge of the research groups and facilities of each institution.

UAB	Sep 19 th, 3pm-7pm
UB	Sep 20st, 3pm-7pm
BSC+UPC	Sep 21st, 3pm-7pm
ICFO	Sep 22nd, 3pm-7pm
ICN2+IFAE	Sep 26th, 3pm-7pm



SEMINARS (EXTRACURRICULAR): A 3 hours/week slot is reserved for seminars. These seminars will be announced few weeks in advance and there will be held in Facultat de Física (UB), when possible. They are part of the Master program and the assistance is compulsory.

OTHER POSSIBLE CIRCUMSTANCES: Under unexpected circumstances, lectures may be cancelled. In this case, reschedule will be carried out provided that both students and professors agree.

Extracurricular activities 2022-2023



Certificates of attendance will be awarded
We expect ALL students to participate in these activities, please register in the link
Fill free to send us suggestions master.quantum.bcn@ub.edu

Date	Seminar	Speaker	Company	Registration
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