



MOLECULAR TECHNIQUES

26536 - MOLECULAR TECHNIQUES (2024-25)

General

Code: 26536

Lecturer responsible:

ESCLAPEZ ESPLIEGO, JULIA MARIA

Credits ECTS:	6,00
Theoretical credits:	0,68
Practical credits:	1,72
Distance-base hours:	3,60

Departments involved

- **Dept:** PHYSIOLOGY, GENETICS AND MICROBIOLOGY
Area: GENETICS
Theoretical credits: 0,34
Practical credits: 0,86
- **Dept:** BIOCHEMISTRY AND MOLECULAR BIOLOGY AND SOIL AND AGRICULTURAL CHEMISTRY
Area: BIOCHEMISTRY AND MOLECULAR BIOLOGY
Theoretical credits: 0,34
Practical credits: 0,86
This Dept. is responsible for the course.
This Dept. is responsible for the final mark record.

Study programmes where this course is taught

- [DEGREE IN BIOLOGY](#)
Course type: COMPULSORY (Year: 3)

Competencies and objectives

Course context for academic year 2024-25

MOLECULAR TECHNIQUES is an essentially-practical subject which offers an overview of the foundations and applications of many different techniques widely used in Genetics, Biochemistry and Molecular Biology in the research laboratory. This technology supports the advance of knowledge in these disciplines, and its tools are pivotal for the development of Biotechnology and Biomedicine, two areas having nowadays a great impact on industry and society. Additionally, they play a key role in the advance of other relevant areas of the Degree in Biology, such as Applied Microbiology and Applied Genetics of the fourth year.

This subject is supported by the previous knowledge acquired by the student in the subjects of Biochemistry I and Genetics in the first year, Biochemistry II in the second, and Advanced Genetics in the third year. Furthermore, it is complemented by Structural and Functional Techniques, also in the third year of the Degree in Biology.

Course content (verified by ANECA in official undergraduate and Master's degrees) for academic year {0}

Generic Degree Course Competences

- **CG1** : Desenvolupar la capacitat d'anàlisi, síntesi i raonament crític.
- **CG10** : Desenvolupar actituds crítiques basades en el coneixement.
- **CG3** : Resoldre problemes de manera efectiva.
- **CG4** : Demostrar capacitat de treball en equip.
- **CG5** : Comprometre's amb l'ètica i els valors d'igualtat, i també en la responsabilitat social com a ciutadà i com a professional.
- **CG6** : Aprendre de manera autònoma.
- **CG7** : Demostrar capacitat d'adaptar-se a noves situacions.
- **CG8** : Adquirir una preocupació permanent per la qualitat i el medi ambient i la prevenció de riscos laborals.
- **CG9** : Demostrar habilitat per a transmetre informació, idees, problemes i solucions a un públic tant especialitzat com no especialitzat.

Specific Competences:>>Theoretical

- **CE13** : Estudiar l'estructura i la funció de les biomolècules i comprendre la seu funció en els processos biològics.
- **CE14** : Conèixer els fonaments de la replicació, transcripció, traducció i modificació del material genètic.
- **CE17** : Comprendre els principis de la termodinàmica i les seues aplicacions en bioenergètica.
- **CE2** : Relacionar els principis físics i químics de la biologia.

Specific Competences:>>Ability

- **CE29** : Demostrar el coneixement i comprensió dels fets essencials, conceptes, principis i teories relacionades amb les àrees de la biologia.
- **CE30** : Interpretar, avaluar, processar i sintetitzar dades i informació biològica.
- **CE31** : Reconèixer i implementar bones pràctiques científiques de mesura i experimentació.
- **CE32** : Manipular amb seguretat material biològic, reactius, instruments i dispositius d'aplicació en biologia.
- **CE33** : Dur a terme procediments estàndards de laboratoris implicats en treballs analítics.
- **CE34** : Planificar, dissenyar i executar investigacions pràctiques, i valorar-ne els resultats.
- **CE35** : Interpretar les dades procedents d'observacions i mesuraments en el laboratori i camp.
- **CE36** : Elaborar, presentar i defensar informes científics i tècnics tant de manera escrita com oral davant d'una audiència.
- **CE37** : Saber cercar, analitzar, comprendre i redactar textos científics i tècnics.

Exclusive skill taught in this course

No data

Learning outcomes (Training objectives)

No data

Specific objectives stated by the academic staff for academic year 2024-25

- To understand the foundations, instrumentation and applications of the main molecular techniques used for experimentation in Biology.
- To acquire the skills of using molecular techniques for the experimental assessment of biological problems.
- To design experimental protocols using molecular techniques, to develop the ability to choose the best method, to acquire good habits towards working in the lab, to interpret and evaluate experimental data and to predict experimental outcomes.
- To implement laboratory procedures integrating a set of different molecular techniques.
- To acquire the skills to write, present and defend scientific reports using molecular techniques not only in writing, but also orally to an audience.
- To develop the ability to analyze and understand a scientific paper making use of the methodologies dealt with in this subject.

Content and bibliography

Content for academic year 2024-25

THEORETICAL CONTENTS

B. 1: Methods for the isolation of biomolecules (1 h)

T 1. Isolation of nucleic acids and proteins (1 h)

B. 2: Methods for the study of proteins (5 h)

T 2. Chromatographic techniques applied to the study of proteins (2 h)

T 3. Protein electrophoresis (1 h)

T 4. Spectrophotometric and fluorimetric studies of proteins (2 h)

B. 3: Methods for the study of nucleic acids (2 h)

T 5. Nucleic acid electrophoresis. Southern blotting (1 h)

T 6. Polymerase chain reaction (PCR). Applications (1 h)

B. 4: Genetic engineering and genomics (7 h)

T 7. Recombinant DNA technology (3.5 h)

T 8. Construction and analysis of libraries. DNA sequencing (1.5 h)

T 9. Genetic modification of organisms (2 h)

B. 5: Analysis of gene expression (2 h)

T 10. Analysis of gene expression at the mRNA and protein level (2 h)

PRACTICAL CONTENTS

PL1: Purification of egg lysozyme by ion exchange chromatography (6 h)

PL2: Polyacrylamide gel electrophoresis. Monitoring of the purification process (6 h)

PL3: Western blotting (3 h)

PL4: PCR analysis of recombinant plasmids. Agarose gel electrophoresis (2 h)

PL5: PCR-directed mutagenesis. Purification and digestion of a PCR product (6 h)

PL6: Purification, quantitation and cloning of a DNA fragment (6 h)

PL7: Transformation and screening of recombinant colonies. Plasmid DNA isolation (6 h)

PL8: Restriction analysis of plasmid DNA (2 h)

PO: Analysis of protein sequences (3 h)

Related links

No data

Bibliography

Técnicas instrumentales en bioquímica y biología

Author(s): BARCELÓ MAIRATA, Francisca

Issue: Palma de Mallorca : Universitat de les Illes Balears, 2003;

ISBN: 84-7632-808-7

Category: Complementario

Genomas

Author(s): Brown, Terence A.

Issue: Buenos Aires : Editorial Médica Panamericana, 2008;

ISBN: 978-950-06-1448-1

Category: Complementario

Técnicas de bioquímica y biología molecular

Author(s): FREIFELDER, David

Issue: Barcelona : Reverté, 2003;

ISBN: 84-291-1819-5

Category: Básico

Técnicas instrumentales de análisis en bioquímica

Author(s): GARCÍA-SEGURA, Juan Manuel [et al.]

Issue: Madrid : Síntesis, 1999;

ISBN: 978-84-7738-429-8

Category: Básico

Texto ilustrado e interactivo de biología molecular e ingeniería genética : conceptos, técnicas y aplicaciones en ciencias de la salud

Author(s): HERRÁEZ SÁNCHEZ, Ángel

Issue: Barcelona : Elsevier-Masson, 2012;

ISBN: 978-84-8086-647-7

Category: Básico

Ingeniería genética

Author(s): PERERA, Julián ; TORMO GARRIDO, Antonio ;
GARCÍA, José Luis

Issue: Madrid : Síntesis, 2002;

ISBN: 84-7738-966-7 (o.c.)

Category: Básico

Analysis of genes and genomes

Author(s): REECE, Richard J.

Issue: Chichester : John Wiley & Sons, 2004;

ISBN: 0-470-84380-2 (rúst.)

Category: Complementario

Bioquímica : técnicas y métodos

Author(s): Roca, Pilar ; Oliver, Jordi ; Rodríguez, Ana M^a

Issue: Madrid : Hélice, 2003;

ISBN: 84-921124-8-4

Category: Complementario

Physical biochemistry : principles and applications

Author(s): SHEEHAN, David

Issue: Chichester : Wiley-Blackwell, 2009;

ISBN: 978-0-470-85603-1

Category: Complementario

Recombinant DNA: genes and genomes: a short course

Author(s): WATSON, James D. [et al.]

Issue: New York : W. Freeman and company, 2007;

ISBN: 978-0-7167-2866-5

Category: Complementario

Wilson and Walker's principles and techniques of biochemistry and molecular biology

Author(s): Hofmann, Andreas ; Clokie, Samuel (eds.)

Issue: Cambridge : Cambridge University Press, 2018;

ISBN: 978-1-316-61476-1

Category: Básico

Assessment

Assessment procedures and criteria 2024-25

Attendance to laboratory class is compulsory. The student can justifiably miss 20% maximum of practical session hours.

To pass this subject, the student must obtain a minimum score of 40% (out of 100%) in the final exam, together with a minimum score of 40% (out of 100%) in the continuous assessment activities (problems + in-class tests + group tutorials). It is necessary to obtain, at least, 50 points (out of 100) between both marks (final exam + continuous assessment activities) to pass the subject.

The score obtained in the evaluation phase passed (continuous assessment or final exam) will be kept till the Extra Evaluation period in July. In this period, the evaluation phase failed could be passed by performing a test containing multiple-choice questions, short-answer questions and/or problems .

Once the continuous assessment is passed (40/100 points), the score obtained can be kept for the following two academic years. Should the student wish to decline keeping this score, he/she must state it explicitly.

In the Extra Evaluation period towards the End of the Degree, the student will be able to perform the test corresponding to the final exam. The score obtained in the last continuous assessment undergone will be retained.

Description	Criteria	Type	Weighting system
PROBLEM BASED LEARNING	In-practical sessions discussion of problems and questions related to practical content	ACTIVITIES OF EVALUATION DURING THE SEMESTER	20
WRITTEN TEST	Tests made in class on practical contents (dealt with in lab and computer sessions)	ACTIVITIES OF EVALUATION DURING THE SEMESTER	20
Online Test	On-line test through UACloud	ACTIVITIES OF EVALUATION DURING THE SEMESTER	10
Final exam	Multiple-choice questions, short-answer questions and/or problems	FINAL TEST	50

Official exam dates for academic year 2024-25

Exam session	Date	Time	Group - Classroom(s) allocated	Comments
(C3) Periodo ordinario para asignaturas de segundo semestre y anuales	02/06/2025			
(C4) Pruebas extraordinarias para asignaturas de grado y máster	08/07/2025			

Academic staff



ESCLAPEZ ESPLIEGO, JULIA MARIA

Lecturer responsible

THEORY CLASS: Groups: 2 , 3

LAB PRACTICALS: Groups: L5

COMPUTER PRACTICALS: Groups: O5 , O9 , O6

GROUP TUTORIALS: Groups: T2 , T3



ALCARAZ MAS, LUIS ANTONIO

LAB PRACTICALS: Groups: L4 , L6



BARBERA JUAN, VICTOR MANUEL

LAB PRACTICALS: Groups: L4 , L5 , L6



DAMASO RIQUELME, ESTELA

THEORY CLASS: Groups: 1 , 2

LAB PRACTICALS: Groups: L1 , L2 , L3 , L4 , L5

GROUP TUTORIALS: Groups: T1 , T2



PENACHO MARTIN, ANA VANESSA

LAB PRACTICALS: Groups: L1 , L2 , L3 , L9

**PIRE GALIANA, CARMEN LUCIA**

THEORY CLASS: Groups: 1

COMPUTER PRACTICALS: Groups: O1 , O2 , O3 , O4

GROUP TUTORIALS: Groups: T1

**SALINAS BERNA, PALOMA**

THEORY CLASS: Groups: 3

LAB PRACTICALS: Groups: L1 , L2 , L3 , L4 , L5 , L9 , L6

GROUP TUTORIALS: Groups: T3

Groups

THEORY CLASS

Group	Semester	Morning or afternoon session	Language	No. of enrolled students	On registration, distribution
Gr. 1 (THEORY CLASS) : 1	2S	All day	Spanish	72	From ID document number A - To ID document number N
Gr. 2 (THEORY CLASS) : 2	2S	All day	Spanish	75	From ID document number P - To ID document number Z
Gr. 3 (THEORY CLASS) : 3(ARA)	2S	All day	English	13	

LAB PRACTICALS

Group	Semester	Morning or afternoon session	Language	No. of enrolled students	On registration, distribution
Gr. L1 (LAB PRACTICALS) : L1	2S	All day	Spanish	20	From ID document number A - To ID document number D
Gr. L2 (LAB PRACTICALS) : L2	2S	All day	Spanish	26	From ID document number E - To ID document number H
Gr. L3 (LAB PRACTICALS) : L3	2S	All day	Spanish	26	From ID document number J - To ID document number N
Gr. L4 (LAB PRACTICALS) : L4	2S	All day	Spanish	25	From ID document number P - To ID document number R
Gr. L5 (LAB PRACTICALS) : L5	2S	All day	Spanish	24	From ID document number S - To ID document number V
Gr. L6 (LAB PRACTICALS) : L6	2S	All day	Spanish	26	From ID document number W - To ID document number Z
Gr. L9 (LAB PRACTICALS) : L9(ARA)	2S	All day	English	13	

COMPUTER PRACTICALS

Group	Semester	Morning or afternoon session	Language	No. of enrolled students	On registration, distribution
Gr. O1 (COMPUTER PRACTICALS) : O1	2S	All day	Spanish	20	From ID document number A - To ID document number D
Gr. O2 (COMPUTER PRACTICALS) : O2	2S	All day	Spanish	26	From ID document number E - To ID document number H

Group	Semester	Morning or afternoon session	Language	No. of enrolled students	On registration, distribution
Gr. O3 (COMPUTER PRACTICALS) : O3	2S	All day	Spanish	26	From ID document number J - To ID document number N
Gr. O4 (COMPUTER PRACTICALS) : O4	2S	All day	Spanish	26	From ID document number P - To ID document number R
Gr. O5 (COMPUTER PRACTICALS) : O5	2S	All day	Spanish	24	From ID document number S - To ID document number V
Gr. O6 (COMPUTER PRACTICALS) : O6	2S	All day	Spanish	25	From ID document number W - To ID document number Z
Gr. O9 (COMPUTER PRACTICALS) : O9(ARA)	2S	All day	English	13	

GROUP TUTORIALS

Group	Semester	Morning or afternoon session	Language	No. of enrolled students	On registration, distribution
Gr. T1 (GROUP TUTORIALS) : T1	2S	All day	Spanish	72	From ID document number A - To ID document number N
Gr. T2 (GROUP TUTORIALS) : T2	2S	All day	Spanish	75	From ID document number P - To ID document number Z
Gr. T3 (GROUP TUTORIALS) : T3(ARA)	2S	All day	English	13	

Timetables

THEORY CLASS

Group	Start date	End date	Day	Start time	End time	Lecture room
1	28/01/2025	28/01/2025	MAR	12:30	13:30	A1/1-50X 
1	04/02/2025	04/02/2025	MAR	12:30	13:30	A1/1-50X 
1	06/02/2025	06/02/2025	JUE	11:30	12:30	A1/1-50X 
1	11/02/2025	11/02/2025	MAR	12:30	13:30	A1/1-50X 
1	13/02/2025	13/02/2025	JUE	11:30	12:30	A1/1-50X 
1	14/02/2025	14/02/2025	VIE	13:30	14:30	A1/1-50X 
1	18/02/2025	18/02/2025	MAR	12:30	13:30	A1/1-50X 
1	20/02/2025	20/02/2025	JUE	11:30	12:30	A1/1-50X 
1	25/02/2025	25/02/2025	MAR	12:30	13:30	A1/1-50X 
1	27/02/2025	27/02/2025	JUE	11:30	12:30	A1/1-50X 
1	28/02/2025	28/02/2025	VIE	13:30	14:30	A1/1-50X 
1	04/03/2025	04/03/2025	MAR	12:30	13:30	A1/1-50X 
1	03/04/2025	03/04/2025	JUE	11:30	12:30	A1/1-50X 
1	04/04/2025	04/04/2025	VIE	13:30	14:30	A1/1-50X 
1	08/04/2025	08/04/2025	MAR	12:30	13:30	A1/1-50X 
1	15/04/2025	15/04/2025	MAR	12:30	13:30	A1/1-50X 
1	16/04/2025	16/04/2025	MIE	11:30	12:30	A1/1-50X 
2	28/01/2025	28/01/2025	MAR	13:30	14:30	A1/1-51X 
2	04/02/2025	04/02/2025	MAR	13:30	14:30	A1/1-51X 
2	06/02/2025	06/02/2025	JUE	12:30	13:30	A1/1-51X 

Group	Start date	End date	Day	Start time	End time	Lecture room
2	11/02/2025	11/02/2025	MAR	13:30	14:30	A1/1-51X 
2	13/02/2025	13/02/2025	JUE	12:30	13:30	A1/1-51X 
2	14/02/2025	14/02/2025	VIE	11:30	12:30	A1/1-51X 
2	18/02/2025	18/02/2025	MAR	13:30	14:30	A1/1-51X 
2	20/02/2025	20/02/2025	JUE	12:30	13:30	A1/1-51X 
2	25/02/2025	25/02/2025	MAR	13:30	14:30	A1/1-51X 
2	27/02/2025	27/02/2025	JUE	12:30	13:30	A1/1-51X 
2	28/02/2025	28/02/2025	VIE	11:30	12:30	A1/1-51X 
2	04/03/2025	04/03/2025	MAR	13:30	14:30	A1/1-51X 
2	03/04/2025	03/04/2025	JUE	12:30	13:30	A1/1-51X 
2	04/04/2025	04/04/2025	VIE	11:30	12:30	A1/1-51X 
2	08/04/2025	08/04/2025	MAR	13:30	14:30	A1/1-51X 
2	15/04/2025	15/04/2025	MAR	13:30	14:30	A1/1-51X 
2	16/04/2025	16/04/2025	MIE	12:30	13:30	A1/1-51X 
3	28/01/2025	28/01/2025	MAR	11:30	12:30	A1/1-28M 
3	04/02/2025	04/02/2025	MAR	11:30	12:30	A1/1-28M 
3	06/02/2025	06/02/2025	JUE	13:30	14:30	A1/1-28M 
3	11/02/2025	11/02/2025	MAR	11:30	12:30	A1/1-28M 
3	13/02/2025	13/02/2025	JUE	13:30	14:30	A1/1-28M 
3	14/02/2025	14/02/2025	VIE	12:30	13:30	A1/1-28M 
3	18/02/2025	18/02/2025	MAR	11:30	12:30	A1/1-28M 

Group	Start date	End date	Day	Start time	End time	Lecture room
3	20/02/2025	20/02/2025	JUE	13:30	14:30	A1/1-28M 
3	25/02/2025	25/02/2025	MAR	11:30	12:30	A1/1-28M 
3	27/02/2025	27/02/2025	JUE	13:30	14:30	A1/1-28M 
3	28/02/2025	28/02/2025	VIE	12:30	13:30	A1/1-28M 
3	04/03/2025	04/03/2025	MAR	11:30	12:30	A1/1-28M 
3	03/04/2025	03/04/2025	JUE	13:30	14:30	A1/1-28M 
3	04/04/2025	04/04/2025	VIE	12:30	13:30	A1/1-28M 
3	08/04/2025	08/04/2025	MAR	11:30	12:30	A1/1-28M 
3	15/04/2025	15/04/2025	MAR	11:30	12:30	A1/1-28M 
3	16/04/2025	16/04/2025	MIE	13:30	14:30	A1/1-28M 

LAB PRACTICALS

Group	Start date	End date	Day	Start time	End time	Lecture room
L1	07/03/2025	07/03/2025	VIE	08:00	11:00	0041PB035 
L1	07/03/2025	07/03/2025	VIE	08:00	11:00	0012PB004 
L1	10/03/2025	10/03/2025	LUN	08:00	11:00	0041PB035 
L1	17/03/2025	17/03/2025	LUN	08:00	11:00	0012PB004 
L1	18/03/2025	18/03/2025	MAR	08:00	11:00	0012PB004 
L1	20/03/2025	20/03/2025	JUE	08:00	11:00	0041PB035 
L1	21/03/2025	21/03/2025	VIE	08:00	11:00	0041PB035 
L1	24/03/2025	24/03/2025	LUN	08:00	11:00	0041PB035 

Group	Start date	End date	Day	Start time	End time	Lecture room
L1	07/04/2025	07/04/2025	LUN	08:00	11:00	0012PB004 
L1	08/04/2025	08/04/2025	MAR	08:00	11:00	0012PB004 
L1	05/05/2025	05/05/2025	LUN	11:30	13:30	0010PB005 
L1	09/05/2025	09/05/2025	VIE	08:00	11:00	0012PB004 
L1	12/05/2025	12/05/2025	LUN	08:00	11:00	0012PB004 
L1	19/05/2025	19/05/2025	LUN	11:30	13:30	0012PB004 
L2	03/03/2025	03/03/2025	LUN	15:30	18:30	0010PB005 
L2	04/03/2025	04/03/2025	MAR	15:30	18:30	0010PB005 
L2	13/03/2025	13/03/2025	JUE	08:00	11:00	0010PB005 
L2	13/03/2025	13/03/2025	JUE	11:30	14:30	0010PB005 
L2	14/03/2025	14/03/2025	VIE	08:00	11:00	0010PB005 
L2	20/03/2025	20/03/2025	JUE	08:00	11:00	0012PB004 
L2	21/03/2025	21/03/2025	VIE	08:00	11:00	0012PB004 
L2	09/04/2025	09/04/2025	MIE	08:00	11:00	0012PB004 
L2	10/04/2025	10/04/2025	JUE	08:00	11:00	0012PB004 
L2	06/05/2025	06/05/2025	MAR	11:30	13:30	0010PB005 
L2	09/05/2025	09/05/2025	VIE	11:30	14:30	0012PB004 
L2	12/05/2025	12/05/2025	LUN	11:30	14:30	0012PB004 
L2	20/05/2025	20/05/2025	MAR	09:00	11:00	0012PB004 
L3	05/03/2025	05/03/2025	MIE	15:30	18:30	0010PB005 
L3	06/03/2025	06/03/2025	JUE	15:30	18:30	0010PB005 

Group	Start date	End date	Day	Start time	End time	Lecture room
L3	14/03/2025	14/03/2025	VIE	11:30	14:30	0010PB005 
L3	17/03/2025	17/03/2025	LUN	08:00	11:00	0010PB005 
L3	18/03/2025	18/03/2025	MAR	08:00	11:00	0010PB005 
L3	24/03/2025	24/03/2025	LUN	08:00	11:00	0012PB004 
L3	25/03/2025	25/03/2025	MAR	08:00	11:00	0012PB004 
L3	10/04/2025	10/04/2025	JUE	11:30	14:30	0012PB004 
L3	11/04/2025	11/04/2025	VIE	08:00	11:00	0012PB004 
L3	07/05/2025	07/05/2025	MIE	11:30	13:30	0010PB005 
L3	13/05/2025	13/05/2025	MAR	11:30	14:30	0012PB004 
L3	14/05/2025	14/05/2025	MIE	11:30	14:30	0012PB004 
L3	21/05/2025	21/05/2025	MIE	09:00	11:00	0012PB004 
L4	07/03/2025	07/03/2025	VIE	15:30	18:30	0010PB005 
L4	10/03/2025	10/03/2025	LUN	08:00	11:00	0010PB005 
L4	20/03/2025	20/03/2025	JUE	08:00	11:00	0010PB005 
L4	21/03/2025	21/03/2025	VIE	11:30	14:30	0010PB005 
L4	24/03/2025	24/03/2025	LUN	08:00	11:00	0010PB005 
L4	25/03/2025	25/03/2025	MAR	11:30	14:30	0012PB004 
L4	26/03/2025	26/03/2025	MIE	08:00	11:00	0012PB004 
L4	14/04/2025	14/04/2025	LUN	08:00	11:00	0012PB004 
L4	15/04/2025	15/04/2025	MAR	08:00	11:00	0012PB004 
L4	05/05/2025	05/05/2025	LUN	11:30	13:30	0041PB035 

Group	Start date	End date	Day	Start time	End time	Lecture room
L4	13/05/2025	13/05/2025	MAR	08:00	11:00	0012PB004 
L4	14/05/2025	14/05/2025	MIE	08:00	11:00	0012PB004 
L4	21/05/2025	21/05/2025	MIE	11:30	13:30	0012PB004 
L5	03/03/2025	03/03/2025	LUN	08:00	11:00	0041PB035 
L5	04/03/2025	04/03/2025	MAR	08:00	11:00	0041PB035 
L5	10/03/2025	10/03/2025	LUN	08:00	11:00	0012PB004 
L5	11/03/2025	11/03/2025	MAR	11:30	14:30	0012PB004 
L5	13/03/2025	13/03/2025	JUE	11:30	14:30	0041PB035 
L5	13/03/2025	13/03/2025	JUE	08:00	11:00	0041PB035 
L5	14/03/2025	14/03/2025	VIE	08:00	11:00	0041PB035 
L5	15/04/2025	15/04/2025	MAR	15:30	18:30	0012PB004 
L5	16/04/2025	16/04/2025	MIE	08:00	11:00	0012PB004 
L5	06/05/2025	06/05/2025	MAR	11:30	13:30	0041PB035 
L5	15/05/2025	15/05/2025	JUE	08:00	11:00	0012PB004 
L5	16/05/2025	16/05/2025	VIE	08:00	11:00	0012PB004 
L5	19/05/2025	19/05/2025	LUN	09:00	11:00	0012PB004 
L6	05/03/2025	05/03/2025	MIE	08:00	11:00	0041PB035 
L6	06/03/2025	06/03/2025	JUE	08:00	11:00	0041PB035 
L6	12/03/2025	12/03/2025	MIE	08:00	11:00	0012PB004 
L6	13/03/2025	13/03/2025	JUE	08:00	11:00	0012PB004 
L6	14/03/2025	14/03/2025	VIE	11:30	14:30	0041PB035 

Group	Start date	End date	Day	Start time	End time	Lecture room
L6	17/03/2025	17/03/2025	LUN	08:00	11:00	0041PB035 
L6	18/03/2025	18/03/2025	MAR	08:00	11:00	0041PB035 
L6	01/04/2025	01/04/2025	MAR	11:30	14:30	0012PB004 
L6	02/04/2025	02/04/2025	MIE	08:00	11:00	0012PB004 
L6	07/05/2025	07/05/2025	MIE	11:30	13:30	0041PB035 
L6	15/05/2025	15/05/2025	JUE	11:30	14:30	0012PB004 
L6	16/05/2025	16/05/2025	VIE	11:30	14:30	0012PB004 
L6	20/05/2025	20/05/2025	MAR	11:30	13:30	0012PB004 
L9	05/03/2025	05/03/2025	MIE	08:00	11:00	0012PB004 
L9	06/03/2025	06/03/2025	JUE	08:00	11:00	0012PB004 
L9	11/03/2025	11/03/2025	MAR	08:00	11:00	0012PB004 
L9	14/03/2025	14/03/2025	VIE	08:00	11:00	0012PB004 
L9	25/03/2025	25/03/2025	MAR	08:00	11:00	0041PB035 
L9	26/03/2025	26/03/2025	MIE	08:00	11:00	0041PB035 
L9	31/03/2025	31/03/2025	LUN	08:00	11:00	0041PB035 
L9	01/04/2025	01/04/2025	MAR	08:00	11:00	0041PB035 
L9	02/04/2025	02/04/2025	MIE	08:00	11:00	0041PB035 
L9	07/05/2025	07/05/2025	MIE	11:30	14:30	0012PB004 
L9	08/05/2025	08/05/2025	JUE	09:00	11:00	0012PB004 
L9	08/05/2025	08/05/2025	JUE	11:30	14:30	0012PB004 
L9	08/05/2025	08/05/2025	JUE	09:00	11:00	0041PB035 

Group	Start date	End date	Day	Start time	End time	Lecture room
L9	22/05/2025	22/05/2025	JUE	09:00	11:00	0012PB004 

COMPUTER PRACTICALS

Group	Start date	End date	Day	Start time	End time	Lecture room
O1	03/03/2025	03/03/2025	LUN	08:00	11:00	CI/INF1 
O2	07/03/2025	07/03/2025	VIE	08:00	11:00	CI/INF1 
O3	06/03/2025	06/03/2025	JUE	08:00	11:00	CI/INF1 
O4	04/03/2025	04/03/2025	MAR	08:00	11:00	CI/INF1 
O5	04/03/2025	04/03/2025	MAR	15:30	18:30	CI/INF1 
O6	05/03/2025	05/03/2025	MIE	15:30	18:30	CI/INF1 
O9	11/03/2025	11/03/2025	MAR	11:30	14:30	CI/INF7 

GROUP TUTORIALS

Group	Start date	End date	Day	Start time	End time	Lecture room
T1	30/01/2025	30/01/2025	JUE	11:30	12:30	A1/1-50X 
T1	06/03/2025	06/03/2025	JUE	11:30	12:30	A1/1-50X 
T1	20/03/2025	20/03/2025	JUE	11:30	12:30	A1/1-50X 
T2	30/01/2025	30/01/2025	JUE	12:30	13:30	A1/1-51X 
T2	06/03/2025	06/03/2025	JUE	12:30	13:30	A1/1-51X 
T2	20/03/2025	20/03/2025	JUE	12:30	13:30	A1/1-51X 
T3	30/01/2025	30/01/2025	JUE	13:30	14:30	A1/1-28M 
T3	06/03/2025	06/03/2025	JUE	13:30	14:30	A1/1-28M 
T3	20/03/2025	20/03/2025	JUE	13:30	14:30	A1/1-28M 

