VNIVERSITAT DE VALÈNCIA

Course Guide
46498 Drug metabolism and biotransformation in the human body

COURSE DATA

DATA SUBJECT

Code: 46498
Name: Drug metabolism and biotransformation in the human body
Cycle: Master's Degree
ECTS Credits: 3
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
2254 - Master's Degree in Molecular Approaches in Health Sciences	Facultat de Medicina i Odontologia	1	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2254 - Master's Degree in Molecular Approaches in Health Sciences	Biotransformation, metabolism of drugs and xenobiotics	COMPULSORY

COORDINATION

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O'CONNOR BLASCO JOSE ENRIQUE

JOVER ATIENZA RAMIRO

SUMMARY

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

COMPETENCES / LEARNING OUTCOMES

2254 - Master's Degree in Molecular Approaches in Health Sciences

Aprender a identificar, manejar y presentar adecuadamente en informes y exposición pública, los conocimientos existentes (clínicos y/o experimentales) en relación a biotransformación, usando como

vehículo la lengua inglesa.

Conocer en profundidad y comprender la organización a nivel molecular de células, sistemas y procesos de relevancia en las Ciencias de la Salud.

Conocer en profundidad y comprender las bases moleculares de la enfermedad.

Conocer en profundidad y comprender las metodologías de investigación básica aplicables a las Ciencias de la Salud.

Conocer y comprender el mecanismo molecular subyacente en las interacciones medicamentosas, así como las bases bioquímicas y moleculares de la variabilidad interindividual humana en relación al metabolismo de fármacos, y ser capaz de aplicar estos conceptos en casos prácticos representativos.

Conocer y comprender los mecanismos y sistemas enzimáticos responsables de la biotransformación de farmacos y otros xenobióticos en el organismo humano, su significado biológico y sus implicaciones clínicas.

Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.

Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.

Students should demonstrate self-directed learning skills for continued academic growth.

Students should possess and understand foundational knowledge that enables original thinking and research in the field.

Tener capacidad de analizar y sintetizar un problema.

Tener capacidad de comunicación oral y escrita en una segunda lengua científica.

Tener capacidad de desarrollar un trabajo interdisciplinar.

Tener capacidad de localizar información.

DESCRIPTION OF CONTENTS

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WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	5,00
Theory	15,00
Group work	10,00
Total hours	**30,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	0,00
Independent study and work	0,00
Preparation of lessons	0,00
Preparation for assessment activities	0,00
Resolution of case studies	0,00
Total hours	**0,00**

TEACHING METHODOLOGY

EVALUATION

REFERENCES

- Handbook of Drug Metabolism, 3rd edition, P.G Pearson y L.C. Wienkers, CRC Press, 2021 The Biochemistry of Drug Metabolism (2 vols). B. Testa y S. Krämer, Willey, 2010. Cytochrome P450. Structure, Mechanism, and Biochemistry 4rd edition. Ed.: P.R. Ortiz de Montellano, Springer, New York, 2015. Rapid Review Pharmacology (en especial los capítulos iniciales), 3rd edition. Ed: T.L. Pazdernik y L. Kerecsen, Mosby, 2010. Handbook of Drug-Nutrient interactions, 2nd edition, Eds: J.L. Boulloto y U.T. Armenti. Humana Press (Springer), 2010 Pharmacogenomics. Eds.: W. Karlow, U.A. Meyer y R.F. Tyndale, Taylor & Francis, New York, 2005

- Paxton J, editor. Topics on Drug Metabolism . InTechOpen; 2012. Disponible en: http://dx.doi.org/10.5772/1180 Noreddin A, editor. Readings in Advanced Pharmacokinetics - Theory, Methods and Applications. InTechOpen; 2012. Disponible en: http://dx.doi.org/10.5772/1982 Ahmed TA, editor. Basic Pharmacokinetic Concepts and Some Clinical Applications. InTechOpen; 2015. Disponible en: http://dx.doi.org/10.5772/58502 Catala A, Ahmad U, editors. Molecular Pharmacology. IntechOpen; 2020. Disponible en: http://dx.doi.org/10.5772/intechopen.89926 Dunnington K, editor. Drug Metabolism. IntechOpen; 2021. Disponible en: http://dx.doi.org/10.5772/intechopen.91543 Ahmad U, editor. Dosage Forms - Innovation and Future Perspectives. IntechOpen; 2023. Disponible en: http://dx.doi.org/10.5772/intechopen.95734