

Course guide 240319 - 240NR026 - M-Health Systems

	Last modified: 16/04/2024		
Unit in charge:	Barcelona School of Industrial Engineering		
Teaching unit:	710 - EEL - Department of Electronic Engineering.		
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Degree	MASTER'S DEGREE IN NEUROENGINEERING AND REHARILITATION (Syllabus 2020) (Compulsory subject)		
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Acadomic voaru 2024	ECTS Crediter 2.0 Languager Catalan		
Academic year. 2024	ECTS Creuits. 3.0 Languages. Catalan		
LECTURER			
Coordinating lecturer:	Ramos Castro, Juan Jose		
Othors	Pames Castro Juan Jose		
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TEACHING METHODOLOGY

Participatory class Project-based learning

LEARNING OBJECTIVES OF THE SUBJECT

To introduce the student in the de telemedicine systems for ambulatory or mobile applications. The goal is that the student learns the general structure of m-Health systems, their applications and limitations (technical and legal). In order to carry out this learning the student will have to analyze a practical case, identify the needs and propose a solution based on a telemedicine system.

STUDY LOAD

Туре	Hours	Percentage
Hours large group	27,0	36.00
Self study	48,0	64.00

Total learning time: 75 h

CONTENTS

Introduction to m-Health systems

Description: content english

Full-or-part-time: 4h Theory classes: 2h Self study : 2h



m-Health sensors

Description:

Health and well-being sensors Diagnostic sensors Assistive sensors Prognostic sensors

Full-or-part-time: 4h Theory classes: 2h Self study : 2h

m-Health and mobile communication systems

Description:

-Wireless data transmission EM wave propagation Modulation Mobile Networks and Wireless Technologies for m-Health IoT and M2M Communications for Healthcare

Full-or-part-time: 5h Theory classes: 3h Self study : 2h

Regulatory aspects of m-health systems

Description: Telemedicine in EU Legal aspects Data protection

Full-or-part-time: 4h Theory classes: 2h Self study : 2h

The future of m-Health care systems

Description: content english

Full-or-part-time: 4h Theory classes: 2h Self study : 2h



GRADING SYSTEM

25% Continuous grading (project results)50% Project grading (35% team work, 15% peer evaluation)25% Final exam

BIBLIOGRAPHY

Basic:

 - Istepanian, Robert S.H.; Bryan Woodward. M-health: fundamentals and applications [on line]. Hoboken, New Jersey: John Wiley & Sons,
 2011 [Consultation: 21/04/2023]. Available on: https://onlinelibrary-wiley-com.recursos.biblioteca.upc.edu/doi/book/10.1002/9781119302889. ISBN 9781119302889.

 - Ogrodnik, Peter J.. Medical device design : innovation from concept to market [on line]. 2nd ed. Oxford: Academic Press-Elsevier, 2020 [Consultation: 21/07/2022]. Available on: https://www.sciencedirect-com.recursos.biblioteca.upc.edu/book/9780128149621/medical-device-design. ISBN 9780128149638.

Complementary:

- Fries, Richard C.. Reliable Design of Medical Devices. 3rd Edition. Boca Raton: CRC Press, 2013. ISBN 9781439894910.
- Prutchi, David ; Michael Norris. Design and development of medical electronic instrumentation : a practical perspective of the design, construction, and test of medical devices. Hoboken, N.J.: Wiley-Interscience, cop. 2005. ISBN 9780471676232.