[MMA103] SURGICAL PLANNING AND TRAINING

GENERAL INFORMATION

Studies	MASTER'S DEGREE IN BIOMEDICAL TECHNOLOGIES			**Subject**	?
Semester	1	**Course**	1	**Mention / Field of specialisation**	
Character	COMPULSORY				
Plan	2023	**Modality**	Face-to-face	**Language**	CASTELLANO
Credits	4,5	**Hours/week**	2.57	**Total hours**	46.2 class hours + 66.3 non-class hours = **112.5 total hours**

PROFESSORS

DOK-ESCALLADA LOPEZ, OSCAR
AZPI-SCORZA, DAVIDE

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	*(No previous knowledge required)*

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
MMRA06 - To use innovative technological solutions to guarantee the rights and safety of the surgical patient taking into account organizational criteria			*x*	3,16
MMRA26 - To apply the knowledge acquired and your problem-solving skills in new, little-known or changing environments within broader (or multidisciplinary) contexts related to your area of study		*x*		1,08
MMRA28 - To communicate your conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way		*x*		0,26
			Total:	**4,5**

KC: Knowledge or Content / SK: Skills / AB: Abilities

SECONDARY LEARNING RESULTS

RMM147 **[!]** ***Define los objetivos, realiza la planificación para su consecución y su seguimiento sistemático coordinando su trabajo con los demás miembros del equipo.***

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	2 h.	1 h.	3 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	50%	Observation (technical capacity, attitude and participation)
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	50%	

CH - Class hours: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

RMM112 **[!]** ***Comprender y aplicar técnicas de segmentación y corregistro en imágenes biomédicas para la generación de biomodelos.***

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	16 h.	23,5 h.	39,5 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

CH - Class hours: 16 h.
NCH - Non-class hours: 23,5 h.
TH - Total hours: 39,5 h.

RMM145 **[!]** ***Conoce y es capaz de aplicar las herramientas de resolución de problemas en el campo de la Ingeniería Biomédica con iniciativa, toma de decisiones, creatividad y razonamiento crítico.***

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	5 h.	8,5 h.	13,5 h.

EVALUATION SYSTEM	W
Individual written and/or oral tests or individual coding/programming tests	55%
Co-assessment	5%
Prototype / Product	40%

Comments: : If the score of the defense is lower than 5, this evaluation item will be evaluated in its entirety (%100) with the score of the defense. A co-evaluation system will be implemented to adjust the score of the student based on his or her participation in the Project.

MAKE-UP MECHANISMS
Observation (technical capacity, attitude and participation)

CH - Class hours: 5 h.
NCH - Non-class hours: 8,5 h.
TH - Total hours: 13,5 h.

RMM144 **[!]** ***Analiza las variables intervinientes en la solución de los problemas y plantea acciones para lograr una situación estable asumiendo responsabilidades en el equipo de trabajo, afrontando contingencias y organizando y planificando tareas.***

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	5 h.	8,5 h.	13,5 h.

EVALUATION SYSTEM	W
Individual written and/or oral tests or individual coding/programming tests	40%
Co-assessment	5%
Prototype / Product	55%

Comments: If the score of the defense is lower than 5, this evaluation item will be evaluated in its entirety (%100) with the score of the defense. A co-evaluation system will be implemented to adjust the score of the student based on his or her participation in the Project.

MAKE-UP MECHANISMS
Observation (technical capacity, attitude and participation)

CH - Class hours: 5 h.
NCH - Non-class hours: 8,5 h.
TH - Total hours: 13,5 h.

RMM146 **[!]** ***Define el problema, el desarrollo de la solución, así como las conclusiones de manera eficaz, argumentando y justificando cada una de ellas, y haciendo un uso correcto del lenguaje, por escrito y de manera oral.***

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	2,2 h.	1,3 h.	3,5 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	50%	Observation (technical capacity, attitude and participation)
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	50%	

CH - Class hours: 2,2 h.
NCH - Non-class hours: 1,3 h.
TH - Total hours: 3,5 h.

RMM113 **[!]** ***Comprender y aplicar los principios de la realidad virtual para el desarrollo de aplicaciones de simulación y entrenamiento***

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out exercises and solving problems individually and/or in teams	16 h.	23,5 h.	39,5 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

CH - Class hours: 16 h.
NCH - Non-class hours: 23,5 h.
TH - Total hours: 39,5 h.

CONTENTS

1.Surgical planning

2.Surgical training

a) Segmentation of anatomical models using Slicer

b) Virtual and augmented reality

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	*(No bibliography)*
Labs	
Lab practical training	
Computer practical training	