

APPENDIX 2 - Plan of studies for UPM students

1st year for UPM students at UPM

Semester 1 (February to June)	ECTS
Marco político y normativo. Derecho económico e industrial.	4
Modelos de Economía Circular.	3
Diseño de productos y servicios circulares: Ecodiseño.	3
Redes de suministro circulares.	3
Industria 4.0.	2
Análisis de proyectos e inversiones ambientales.	3
Marketing y comunicación.	3
Indicadores y métrica de la economía circular.	3
Big data y tratamiento de datos.	3
Ciclo de vida de productos y servicios.	3
Total Credits Semester 1	30

Semester 2, specialty of Consumo y Gestión Sostenible del Capital Natural (in Spanish) (September to January)	ECTS
Gestión de residuos y materias primas secundarias.	4
Reutilización de aguas.	3
Contaminación y biorremediación.	3
Gestión sostenible del capital natural.	3
Restauración ambiental.	3
Conservación de la biodiversidad.	3
Energía, recursos naturales y cambio climático.	4
Mecanismos financieros de adaptación al cambio climático.	3
Instrumentos y herramientas para el control del cambio climático.	4
Total Credits Semester 2	30
Total Credits Semesters 1 and 2	60

Or

Semester 2, specialty of Minerals and Construction Products (in English) (September to January)	ECTS
Fundamentals of Urban Mining	4
Alternative Energy in Industrial Processes	3
Energy efficiency in industrial processes	3
Water resource recovery in minerals and construction products	2
Recycled materials for sustainable building construction	4
Characterisation and Management of Construction Products	4
Training for the professional digital competence	6
Technological Innovation and Sustainable Entrepreneurship	2
Technology Watch	2
Total Credits Semester 2	30
Total Credits Semesters 1 and 2	60

2nd year for UPM students at ZHAW

Semester 3 (February to June)	ECTS
Transformation Processes	3
Behavioral Psychology	3
Change Management	3
18 ECTS from the following modules: <ul style="list-style-type: none"> - Communications and Consulting (6 ECTS) - Systems and Potential Analysis (6 ECTS) - Data Analysis and Monitoring (6 ECTS) - Technology Assessment (6 ECTS) 	18
Case Study 1	3
Total Credits Semester 3	30

Semester 4 (September to January)	ECTS
12 ECTS from the following modules: <ul style="list-style-type: none"> - Financing - Private and Public Sectors (6 ECTS) - Real Estate, Energy and Waste Management (6 ECTS) - Business, Production and Service Transformation (6 ECTS) - Food Systems & Natural Resources (6 ECTS) 	12
Case Study 2	3
Master's Thesis (co-supervised)	15
Total Credits Semester 4	30

Total Credits Semesters 3 and 4	60
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Total Credits Double Degree for UPM Students	120
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APPENDIX 3

Additional information

Students at ZHAW and UPM can choose where they want to be while writing their Master's Thesis, as long as they follow the co-supervision plan. The Thesis has to be defended before the faculty of both universities, and will follow a hybrid format, with in-person attendance by the student and the members of the committee of the university where the event is held, and telematic attendance by the professors of the other university.

For detailed descriptions of each of the courses at both universities, please go to:

ZHAW, MSc CEM:	https://www.zhaw.ch/en/sml/study/master/circular-economy-management/
UPM, MUEC:	https://www2.montes.upm.es/Blogs/muec/