SHORT
ADVANCED
PROGRAMME (SAP)

REGIONAL UNIVERSITY NETWORK
EUROPEAN UNIVERSITY

Ref.: 2009/00006/003/117

Anexo II. Memoria descriptiva SAP.
List of RUN-EU SAPs Critical Information Elements
Phase 2

An annotated version is presented in Table below:

Name of the SAP	
SAP Overview	
Learning Outcomes I What you will learn…	
Organised by	Name of the Institutions
SAP Coordinator(s)	Name of the Coordinator(s) from each Institution
Typology	Cutting-edge Topic Transversal Skills Challenge Programme Open Undergraduate Module Open Postgraduate Module Local Culture & Language Other
Scientific/Pedagogical Field ISCED Code(s)	041 Business and administration 031 Social and behavioural sciences
RUN-EU Future EIH	Future Industry & Sustainable Regional Development or Bio-Economy or Social Innovation
Language of Instruction	English (by default) Other languages may be used in the particular cases of Culture & Language SAPs
Date	From the 1st working day to the last working day
Length: in weeks/days	The duration to be indicated represents the overall timeframe (from the 1st to the last programmed days) and might not correspond to the entire duration of the delivery.
ECTS Credits	From 1 to 6. No half units allowed. (1 ECTS has an average workload of 28 working hours).
Effort and Workload	**Workload breakdown / typology of activity**

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Breakdown	All educational components Live Sessions (Lectures / Keynotes /Learning Reflection) Pre-recorded Sessions Individual Work I Group Work Team Building Site visits I Placements Presentations Project Development I Research I Experimental work I Laboratory work
Course Schedule	Programme at a Glance I Day by Day /Detailed Programme to be annexed
Course Content I Syllabus	Day by Day /Detailed Programme and Reference Reading to be annexed
Course Leader(s) I Lecturers & Coaches	Names, Institutions and if possible hyperlink to email and short bios
Level (EQF)	Short-cycle (5) 1st cycle (6) 2nd cycle (7) 3rd cycle (8)
Target Audience I Eligible Participants	Indication of subject areas I levels (if applicable) or *"RUN-EU students from any study cycle"*
Pre-requisites	e.g. "basic notions of statistics", "English (B2)", "Micro-economy"
Mode of Delivery	Presential Blended Online (Full online delivery can currently be considered under exceptional circumstances (COVID)).
Venue/Location	...
Special Conditions (if any)	Material, equipment or software, for example
Physical Mobility/Scholarship Available	**For students** **Travel:** 350€/person I Subsistence: 400€/W **For staff:** **Travel:** 350€/person I Subsistence: 850€/W
Academic Recognition I Related Degree Programmes I Stackability Options	To be defined by each Home Institution. In general terms, most students will have this RUN-EU SAP certified in the Diploma Supplement, as a minimal condition.
Learning and Teaching Strategy:	Example: Immersive Learning

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	Active Learning Peer Learning
Means and Criteria for Assessment	Example: Individual participation (attendance): 20% Group project: 80% (20% interim presentation + 60% final presentation). Active participation from all students of each group is mandatory in both group presentations.
How to Apply Entry Requirements I Application Guidelines	**Joint Application Form: link** **Application Deadline: XX** **Contact Details for further Information: sap email**
Selection Criteria and Process	**Joint Selection Procedure and Criteria** **Maximum Number of Students to be selected**
Assessment of the SAP	**According to Conformity Check approved**
Certification Students I Teaching Staff I Coaches	**Joint Certification**
Further Information	If applicable
(Background information on Institutional QA)	Reference to the Institutional QA system(s) in line with the ESG I

Example of Programme at a Glance

	September	27	28	29	30	Oct 1	...	October 8
Schedule (all times GMT)								
9:00-10:00		Welcome & Opening session	Challenges + opportunities for impr. circul. for plastics	Materials and processing	Multilevel design perspective	Sustainable business modelling		
10:00-11:00		**What is circular design + Ecodesign**	Circular enterpreneurship / regional+local chains	Circular economy principles	MDP(30m) + EI&CI(30m)	SBM(30m) + ST(30m)		
11:00-12:00		Sustainability / global aspects	Design for X	Economics of circular design / green logistics	Environmental Impact & Circularity Indicators	System thinking [+tool]		
12:00-13:00 (13:00-14:00 CET)		LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK		
13:00-14:00		Team-building activity	Group work (unsupervised)	Group work (with local mentors)	Group work (unsupervised)	Group work (with local mentors)		
14:00-15:00								Final group presentations
15:00-16:00		Group setup + planning				Interim presentations (~5m)		(~15m)
16:00-17:00		Cultural session						
17:00-18:00								Learning assessment

Design
Environment
Business

Example of Programme Detailed

Module description

- **Ecodesign / circular design** - An overview of the development of Design for Sustainability from the early stages of 'Eco design', Design for circular economy/ 'Cradle to Cradle' Design , Life Cycle Analysis (LCA) and 'Regenerative design'. The module will cover the basic principles, limitations, key terms , opportunities and approaches and will give students a basic understanding of how to apply these through short case study and project work.
Lecturer: Adam de Eyto, Limerick Institute of Technology (LIT)

- **Design for X** - overview of this main concept as well and some relevant Xs that relate it to Design for the Circular Economy such as Df Maintenance; Df Reuse/redistribute; Df Refurbish; Df Service; Df Disposability, that will be addressed through examples that demonstrate the potential of these strategies and their impact notably on EOL approaches
Lecturer: João Sampaio, Polytechnic of Cávado and Ave (IPCA)

- **Materials and processing** - From medical devices to packaging, polymeric materials are an essential part of modern life thanks to their remarkable versatility. The choice of polymers available in the market is wide, ranging from thermoplastics to thermosets, rigid to flexible, commodities to engineering, polyolefin-based to biobased, the design possibilities are endless. As a result, plastic production ramped during the last six decades and we now produce 300 million tons of plastic each year worldwide, however half of it is for single-use items and only 90% is being recycled. This linear economy model has resulted on a serious environmental crisis due to plastic accumulation of 80% of the 7 billion tons of plastic ever produced, endangering our marine and terrestrial ecosystems. Migrating from a linear to a circular economy is imperative to mitigate the environmental impact of plastic materials as well as to maximise the use of resources. However, achievement of a circular economic system will depend on the synergetic combination of a mindful product design process, appropriated operations and post-consumer management. In that context, understanding of the principles about plastic materials and processing techniques is essential for the design for circularity. This topic will introduce the chemical and physical properties of polymeric materials and their processing techniques to understand their implications on the waste management routes of the final products. Through the analysis of the state of the art of plastic reconversion routes, we will look to answer what are the requirements for the reconversion of a plastic product and to explore the innovations on materials and recycling technologies.
Lecturer: Romina Pezzoli, Athlone Institute of Technology (AIT)

- **System thinking** - relates products and services in a holistic design approach. By applying service design tools such as CE Journey, we propose a learning by doing approach by running an assignment that identifies a challenge and the stakeholders where in-group um must try to generate a solution that will analyze (up hill, top hill and down hill) and optimize (in a conceptual framework), which allows you to consider new strategies or minimize possible negative impacts and enhance circularity.
Lecturer: João Sampaio, Polytechnic of Cávado and Ave (IPCA)

- **Sustainability / global aspects** - We are living in a world where products are created to be replaced as frequently as possible instead of lasting long. The linear take-make-waste system that humanity has been living in for a long time is evolving at an even more critical state with fast consumption. The appliances we use, our furniture or our clothes, everything is produced in a way that ensures that we need to buy a new one in a rather short amount of time. Circularity focuses on the resources aspect of sustainability and is a holistic and futuristic way of thinking that considers the entire product lifespan as a whole and aims for a product to complete its purpose in a waste-free way. It is currently considered to be the most promising approach to ensure sustainable development for the society with minimal damage to our planet.
Lecturer: Marcel Crul, NHL-Stenden University of Applied Sciences (NHL-Stenden)

- **Circular economy principles** - awareness about the basic principles connected to the development of Circular Economies; Product and Materials Lifecycles, Value Chain, User Behaviours, CE Business models, Policy, Legislative drivers and Barriers for implementation. Students will be given an opportunity to work on real world 'wicked problems' connected to Circular Economies and to propose sustainable product and product service system design solutions to address these.
Lecturer: Adam de Eyto, Limerick Institute of Technology (LIT)

- **Circularity indicators & Environmental impact** – in order to improve the circularity of products and systems, it is important to have methods to assess the relevant parameters. To complement other more qualitative modules, this module focuses on quantitative tools, both for circularity (circularity indicators, which are more intuitive for industry and for which it is easier to collect the require information) and environmental impact (life cycle assessment, which while being very robust and well established, require considerable technical expertise to understand and is often very difficult to collect the required input data). Being able to quantitatively assess the performance is the first step towards a more sustainable future.
Lecturer: Ricardo Simões, Polytechnic of Cávado and Ave (IPCA)

- **Challenges and opportunities of improving circularity of plastics** - Recent years have seen heightened interest in the potential of circular technologies to break, or at least mitigate, the adverse effects of the make-use-dispose model. Yet few government initiatives, business models or collective efforts to date have be adequately extended or reached their full intended scale and impact. This is due

to multiple factors including the complexities of the plastics value chain which spans raw materials extraction to final disposal, collection and recycling and includes regulation, standards, technologies, investment and trade. The Challenges and opportunities for improving circularity for plastics module will provide an overview of core challenges to meeting a plastics circular economy before providing attendees an opportunity to discuss opportunities arising from these challenges as well as highlighting best practice solutions to these challenges.
Lecturer: Declan Devine, Athlone Institute of Technology (AIT)

- **Sustainable business modelling** - Business modelling is a way to describe the rationale of how a company or organization creates, delivers and captures value. 'Value' can be defined in economic, social, cultural or another context. The most common use of business modelling is when it encompasses one organization, often a commercial company, and is focused on creation of economic value for that company and its customers. Value creation is mostly seen in terms of turnover, profit and earning money. In this lecture the process of designing a business model is introduced. After this module you will understand the different business strategies in relation to value creation and value loss (Value Hill Model), the value creation through including everyone involved in the product life-cycle, the different design strategies in relation to the different business models, the main circular business model archetype, and see the difference between a linear and a circular business model.
Lecturer: Judith Ogink, NHL-Stenden University of Applied Sciences (NHL-Stenden)

- **Multilevel Design Perspective** - In order to create truly circular solutions, it is necessary to design both products made from materials that may be reused, as well as the service and business model surrounding these products, as well as the infrastructure, policy, regulations and other relevant aspects related to the circular system. After all, a circular product will only be truly circular, if the disposed product is indeed collected, processed and made into another product again. This requires a redesign of for instance new infrastructure or business models related to the disposed product collection system, or new regulations requiring a deposit on empty cans or plastic bottles. Each of these solution elements requires a conscious design process.

  This module introduces a specific way of conceptualising the complete system, in the form of the Multilevel Design Model (MDM). The MDM supports designers in their role as facilitator of societal change towards a circular economy. It does this by providing insight into the relationships between processes on different system levels, distinguishing between the Product-Technology level, the Product-Service level, the Socio-Technical level and the Societal level.

  In the module, a general outline of the MDM is presented and the systems thinking approach is introduced. It is being explained how to use the MDM, and an operational problem is introduced as an example case to work on during the module. Based on the preferred future - a completely circular society - students design new solutions for both a circular product or technology, a related circular product-service system as well as a circular socio-technical system and society.
  Lecturer: Peter Joore, NHL-Stenden University of Applied Sciences (NHL-Stenden)

- **Economics of circular design / green logistics -** We will discuss the processes and performance objectives of the circular supply chain. In particular, we focus on how product design decisions affects

the configuration of a circular supply chain. In turn, this configuration determines the performance of the circular supply chain. After this session you will be able to understand the implications of design decisions on the performance of the circular supply chain.
Lecturer: Dennis Vegter, NHL-Stenden University of Applied Sciences (NHL-Stenden)

Other information:

Group project profile:
- students pick their own topic, _among_ topics one of them is already working on. They "elect" which topic to do.

- they have to propose their own _goal_ for the project, it has to fit 1 of the 12 (or so) topics of the SAP, _and_ the project goal must be in line with increasing their holistic perspective expanding from their own previous work (e.g. discuss and study relevance on the other 11 topics)

Group project evaluation		
PROJECT BREAKUP (interim): Problem statement State of the art	**PROJECT BREAKUP (final):** Problem statement State of the art Holistic perspective Group suggestions / solutions	**Evaluation criteria:** - overall quality and care with the presentation - reasoning and arguments presented - application of content from the SAP - an active role in both presentations is mandatory from every student
Note:project evaluation components marked in blue.		