

# **Sustainable Products & Supply Chains (ME-203)**

## **All About the Course**

Amin Kaboli, Martyn Wakeman

Week 1 – Session 1 – Feb 20<sup>th</sup>, 2025

# SP&SC Team

## Coaches

---



Michelle



Ivan



Thibault



Joan



Seung



Davide



Amelia



Daniele



Mizuki



Arthur



Benoit



Leo



Gaiane

## Instructors

---

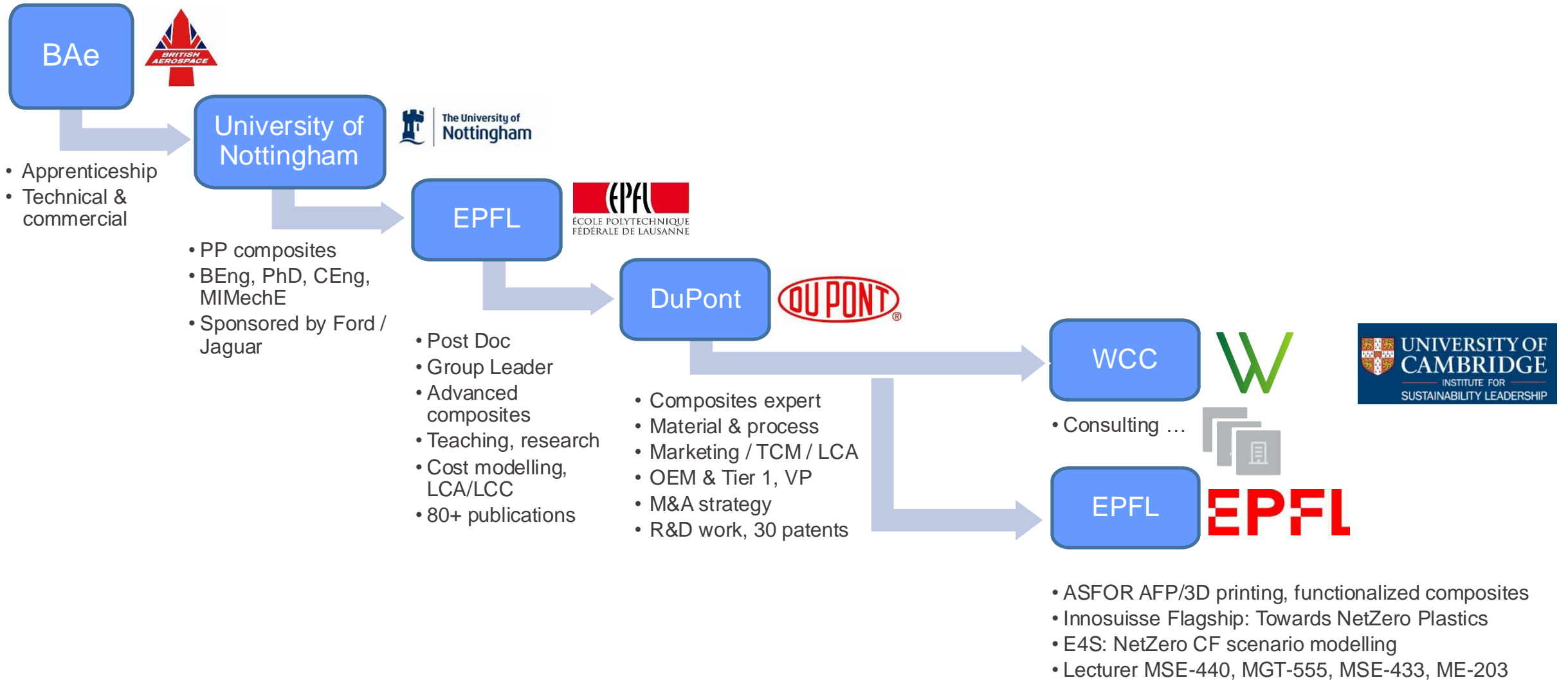


Martyn



Amin

# Martyn Wakeman – Introduction





Lecturer at Swiss Federal Institute of Technology, Lausanne (EPFL)

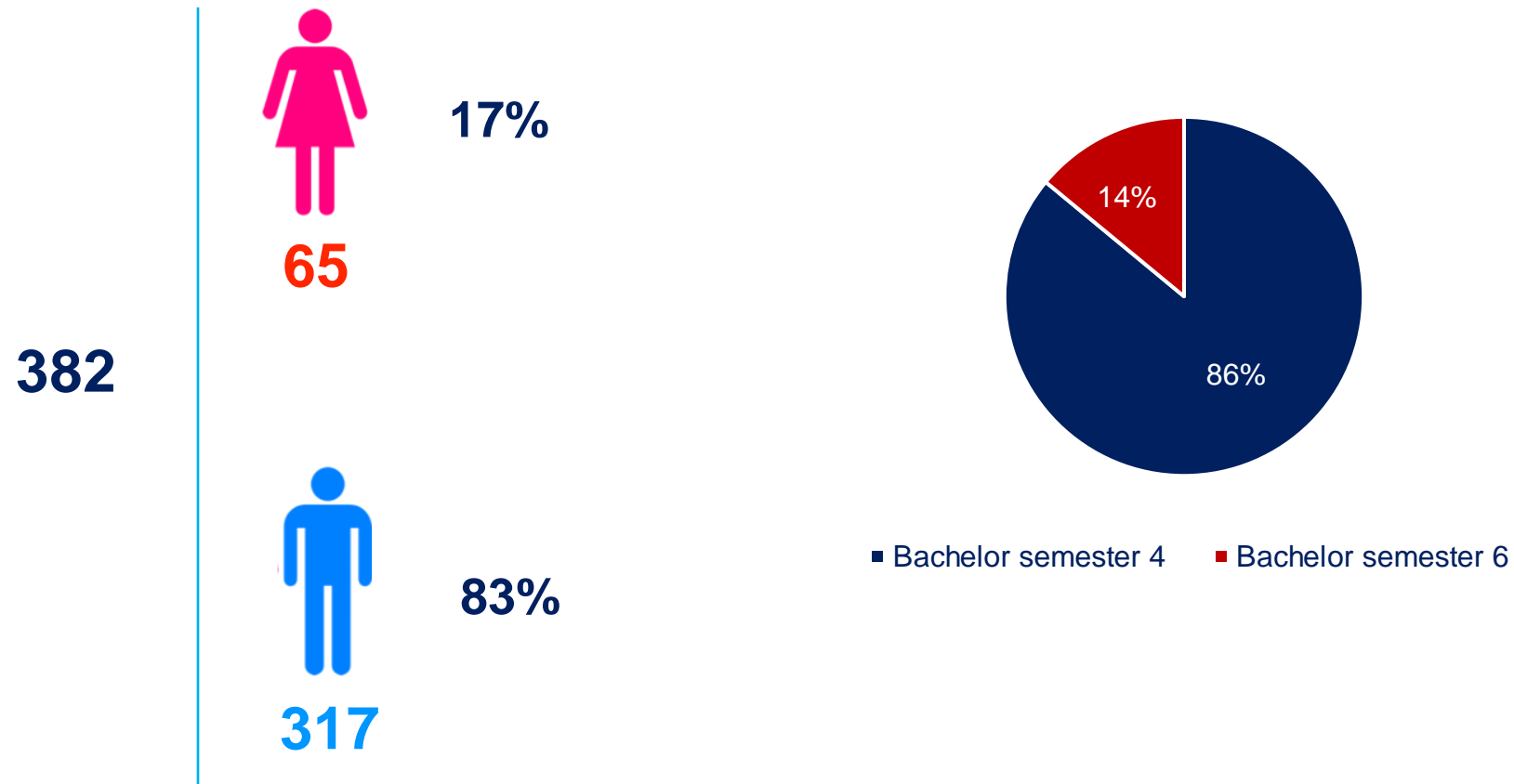
**Education:**

- IMD - Advanced Leadership diplomas
- EPFL - PhD in Manufacturing Systems & Robotics

## Amin Kaboli – Introduction

- **Academic & Teaching Role:** Lecturer and co-director of the AI Product Management executive program at EPFL, specializing in AI, supply chain management, and operational excellence.
- **Industry & Advisory Experience:** Advises corporates and startups on AI-driven transformations, with expertise benefiting companies like Rolex, Patek Philippe, Panerai, Philip Morris, Haleon, Sika, and Sauber Motorsport - Alfa Romeo F1 Team.
- **Background & Education:** Joined EPFL in 2018 after an industry tenure, including as a supply chain executive at Philip Morris. Holds a PhD in Manufacturing Systems & Robotics from EPFL and advanced leadership diplomas from IMD Business School.

# SP&SC – Statistics



# About You?



**3 Min**

1



**Meet your classmates**

2



**Introduce yourself**

Your name

Why do you study Mechanical Engineering?

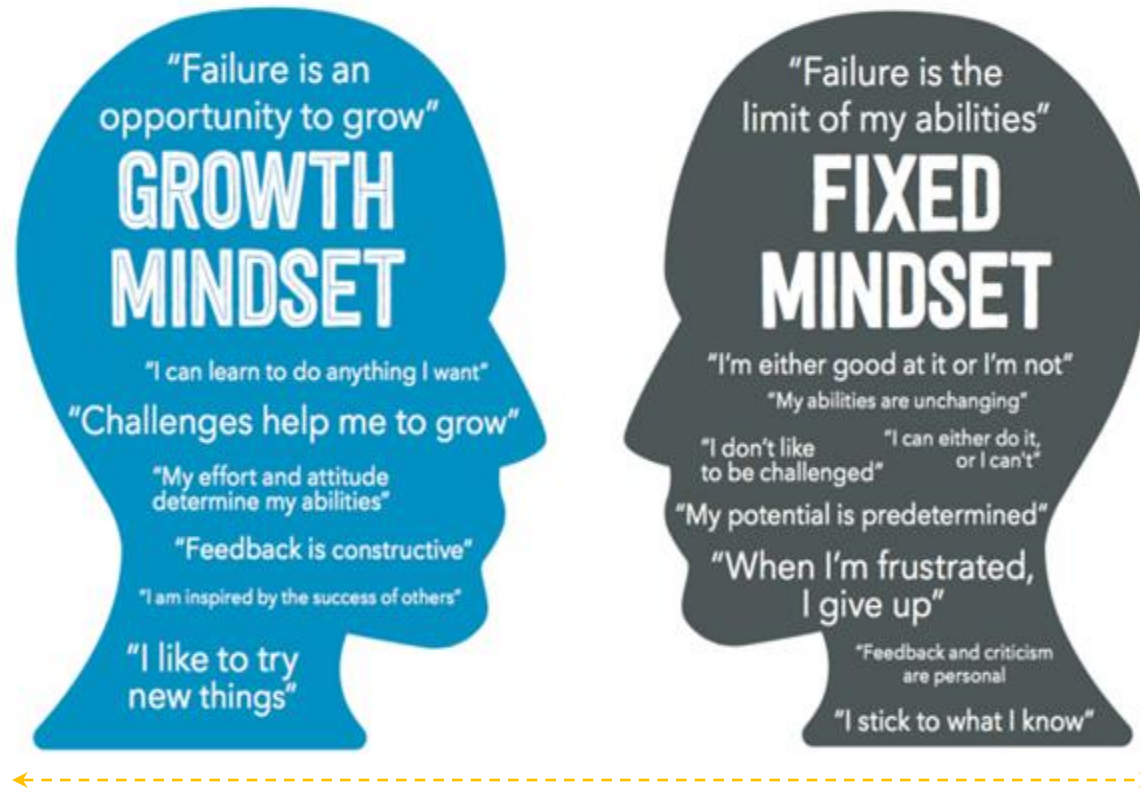
What is special about you?

3



**Listen and connect**

# Agreement #1 – Cultivate (Personal) Growth Mindset



We are here to learn, embrace setbacks and mistakes

## Agreement #2 – Disconnect to connect



**Turn off or silence your phone**



**Handwritten note is highly recommended**



**Laptop is allowed during lab sessions**

# Agreement #3 – Connect and Bond with Class



Listen twice  
and speak once



Effective Communication  
4-sentence rule

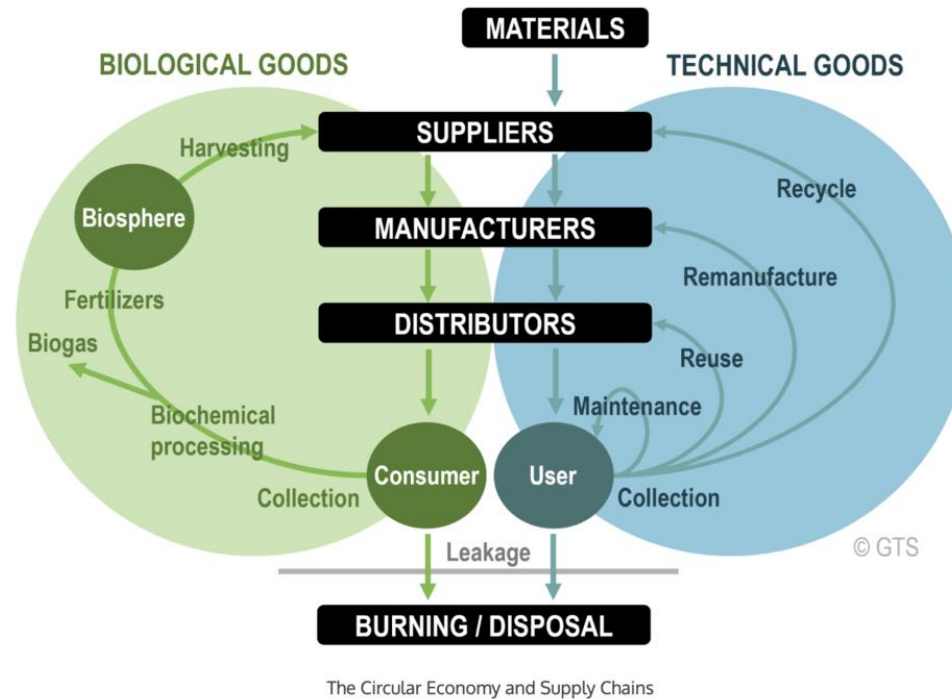


Question?  
Raise your hand

# Agenda

- **13:15 – 14:00** Introduction to Sustainable Products & Supply Chains (ME-203)
  - The course objectives, framework, structure, assessments, ...
  - Assessment methods and success factors
  - Your needs and expectations
  - Summary of seven agreements

# The Course Objectives



The course is designed to provide a **foundational understanding of sustainability principles** and equip students with practical skills and tools to **develop** sustainable products and optimize supply chains.

# The Learning Outcomes

By the end of the course, the student must be able to:



Understand and describe **key concepts in sustainability**



Analyze the **impacts** of products and supply chains

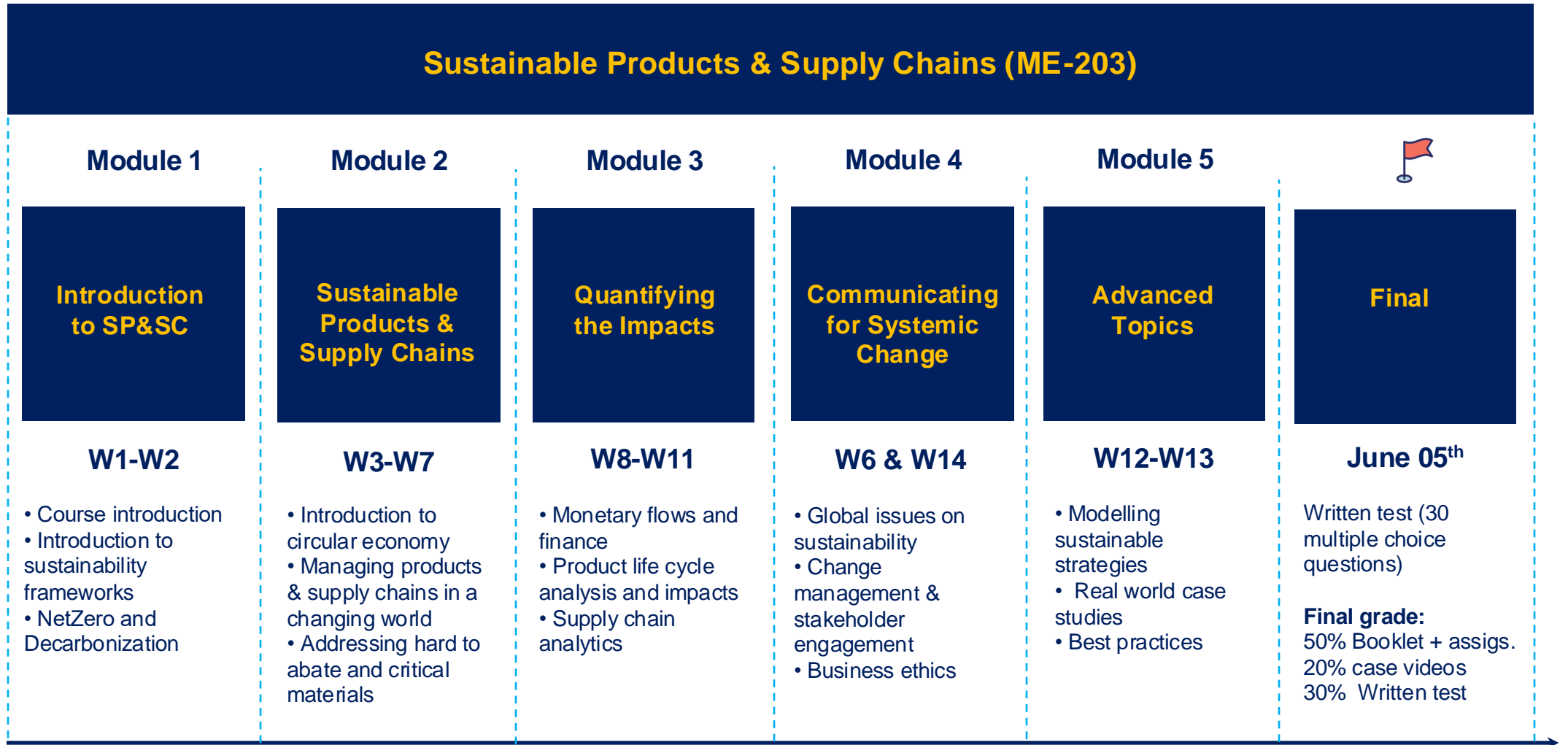


Propose strategies to **decarbonize** products & supply chains



Construct **sustainable** products & supply chains initiatives

# Course Framework



# Course Weekly Plan



Weekly Announcement  
on Moodle

Sustainable Products & Supply Chains (ME-203)						
Student Journey	Date	Student Activity	Week	Learning objectives	Session 1: 10:15-11:00	Session 2: 11:15-12:00
The first 2 weeks of semester	20/2/2025		1	Course introduction, Framework, Sustainability 1. Course introduction and learning objectives 2. Identify core pillars/framework of the course 3. Recognize global trends and drivers in sustainability.	All about SPASC (Intro, Class stat, Course structure, Class policies, ...) grading	Towards a NetZero economy
Launch booklets and case studies	27/2/2025		2	Introduction to sustainable products 1. Sustainability strategies 2. Understand the concept of the circular economy 3. Understanding your course group project and getting to know your group members.	Sustainability strategies and initiatives	Launch booklet case studies
	6/3/2025	Submission of Assignment 1 (booklet)	3	Managing products and supply chains in a changing world 1. Understand the concept of supply chain management. 2. Explore the benefits of closed-loop supply chains. 3. Analyze case studies of circular supply chain implementations.	Products / Supply Chain Management (SCM)	Circular supply chains - case studies, best practices, and challenges
	13/3/2025	Submission of Assignment 2 (booklet)	4	Addressing hard to abate and critical materials 1. Understanding the impact of hard to abate and critical materials 2. Explore strategies for reducing carbon footprints. 3. Discuss case study on EVs.	Industrial decarbonization Hard to Abate and Critical Materials Towards sustainable materials & product design	Case study of Tesla (des. vs. R&D) Group work
Student feedback	20/3/2025	Submission of Assignment 3 (booklet)	5	Global lecture 1. NetZero transition of global north (EU models) 2. Highlight global inequality and SDGs (Global south) 3. Perspective taking and respectful debate	Guest speaker 1 Global North decarbonization lecture (e.g. edoardo.chiarotti@epfl.ch)	Guest speaker 2 Global South lecture: MedAr Human and societal impacts of climate change
Intro to Video 1	27/3/2025	Submission of Assignment 4 (booklet)	6	Communicating sustainability: human factor 1. Introduce change management process 2. Stakeholder engagement 3. Business ethics	1) Communicating change, (20 min) 2) Stakeholder engagement (15 min) 3) NetPositive purpose driven companies (10 min)	1) How to communicate in a video 2) Intro to video 1 group project
Project interim feedback	3/4/2025	Submission of Assignment 5 (booklet)	7	Monetary flows and finance Circular design exercise Interim feedback, videos / booklet	Monetary flows - Cost modelling & finance - Cost of carbon / carbon credits - Green washing	Circular design (Elen MacArthur exercise in groups)
Video 1 due	10/4/2025	Submission of Case Video 1	8	Quantification of impacts 1. Introduce LCA, LCC, MFA 2. Give overview of LCA method 3. Simple LCA demonstration / try out	Introduction to LCA, LCC, MFA	LCA method
	17/04/2025	Submission of Assignment 6 (booklet)	9	Supply Chain Analytics part 1 1. Understand and analyze Supply Chain Metrics 2. Map Supply Chain Networks	Supply chain analytics 1 Supply chain KPIs/Pharmetrics	Supply chain analytics 2 Mapping supply chain networks

Block Schedule  
(Subject to change)

# Class Structure (Max 6h/week required)



# Assessments Methods – Continuous Evaluation



**50%**

Case booklet (teamwork)  
Class assignments

**20%**

Video presentation of your case  
(Video 1 & Video 2)

**30%**

Final written test  
30 multiple choice questions

70%

100%

# Diverse Learning Needs – Inform Teaching Team Until Week 2



## Dyslexia

Affects reading and related language-based processing skills



## Dyscalculia

Affects a person's ability to understand numbers and learn math facts



## Other

Dysgraphia, Non-verbal learning disabilities, Oral/written language disorder, ADHD, ...

# Your Needs & Expectation(s)



5 min



## Question 1:

What is your motivation for taking this course?



## Question 2:

What do you expect to learn?



## Question 3:

What would be an ideal outcome/take away for you?

# What Do We Expect From You?



## Individual

Respect  
Presence  
Involvement



## Team

Respect  
Teamwork  
Openness to learn

# Key Success Factor – Attention



## **Self-learning**

Reading slides

Booklet



## **Class learning**

Play & Practice

Guest speakers



## **Group learning**

Team work

Creating study groups

# Resources



Slides



Booklet



Case Studies

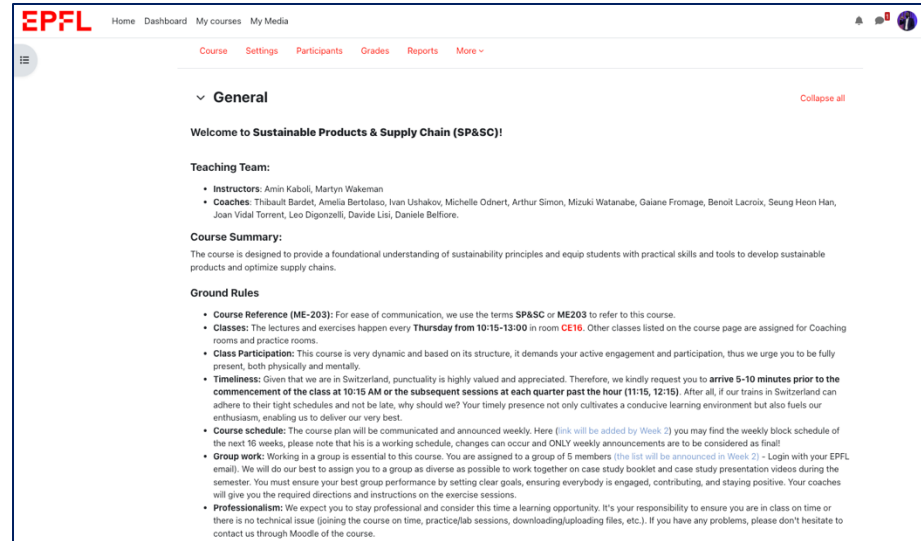


Videos



Book Chapters

# Agreement #4 – Stay Connected/Communicate via Moodle



The screenshot shows the EPFL Moodle interface. At the top, there's a navigation bar with 'Home', 'Dashboard', 'My courses', and 'My Media'. Below this, a course-specific navigation bar includes 'Course', 'Settings', 'Participants', 'Grades', 'Reports', and 'More'. The main content area is titled 'General' and contains the following sections:

- Welcome to Sustainable Products & Supply Chain (SP&SC)!**
- Teaching Team:**
  - Instructors:** Amin Kaboli, Martyn Wakeman
  - Coaches:** Thibault Bardet, Amelia Bertolaso, Ivan Ushakov, Michelle Odriert, Arthur Simon, Mizuki Watanabe, Gaiane Fromage, Benoit Lacroix, Seung Heon Han, Joan Vidal Torrent, Leo Dizonelli, Davide Lisi, Daniele Belfiore.
- Course Summary:**

The course is designed to provide a foundational understanding of sustainability principles and equip students with practical skills and tools to develop sustainable products and optimize supply chains.
- Ground Rules**
  - Course Reference (ME-203):** For ease of communication, we use the terms SP&SC or ME203 to refer to this course.
  - Classes:** The lectures and exercises happen every **Thursday from 10:15-13:00** in room **CE16**. Other classes listed on the course page are assigned for Coaching rooms and practice rooms.
  - Class Participation:** This course is very dynamic and based on its structure, it demands your active engagement and participation, thus we urge you to be fully present, both physically and mentally.
  - Timeliness:** Given that we are in Switzerland, punctuality is highly valued and appreciated. Therefore, we kindly request you to **arrive 5-10 minutes prior to the commencement of the class at 10:15 AM or the subsequent sessions at each quarter past the hour (11:15, 12:15)**. After all, if our trains in Switzerland can adhere to their tight schedules and not be late, why should we? Your timely presence not only cultivates a conducive learning environment but also fuels our enthusiasm, enabling us to deliver our very best.
  - Course schedule:** The course plan will be communicated and announced weekly. Here [\(link will be added by Week 1\)](#) you may find the weekly block schedule of the next 16 weeks, please note that this is a working schedule, changes can occur and **ONLY** weekly announcements are to be considered as final!
  - Group work:** Working in a group is essential to this course. You are assigned to a group of 5 members [\(the list will be announced in Week 2\)](#) - Login with your EPFL email. We will do our best to assign you to a group as diverse as possible to work together on case study booklet and case study presentation videos during the semester. You must ensure your best group performance by setting clear goals, ensuring everybody is engaged, contributing, and staying positive. Your coaches will give you the required directions and instructions on the exercise sessions.
  - Professionalism:** We expect you to stay professional and consider this time a learning opportunity. It's your responsibility to ensure you are in class on time or there is no technical issue (joining the course on time, practice/lab sessions, downloading/uploading files, etc.). If you have any problems, please don't hesitate to contact us through Moodle of the course.



Hand-outs



Plans



Docs



Slides



Videos, ...

# Agreement #5 – Report Professionally



Executive summary/abstract  
Conclusion



Problem/Analysis/Outcome



Citation and referencing

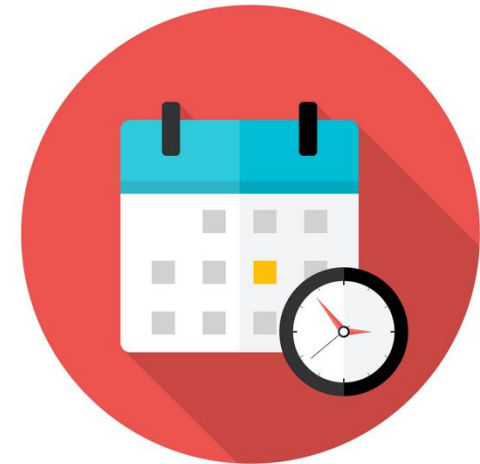
## Agreement #6 – Present Professionally



Structured, short,  
concise, to the point



Visualize  
Problem/Solution/Outcome



Respect 5 min  
allocated time

# Agreement #7 – Giving and Receive Effective Feedback



Feedback is a gift



Feedback/comments are  
always welcome

# Seven Agreements – Summary



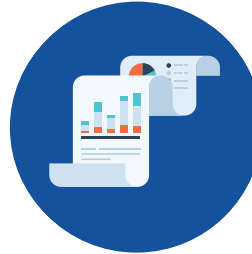
Cultivate Growth mindset



Stay connected off-class (Moodle)



Disconnect to connect



Report Professionally



Present Professionally



Connect and bond with your team, coaches, class



Give and receive effective feedback