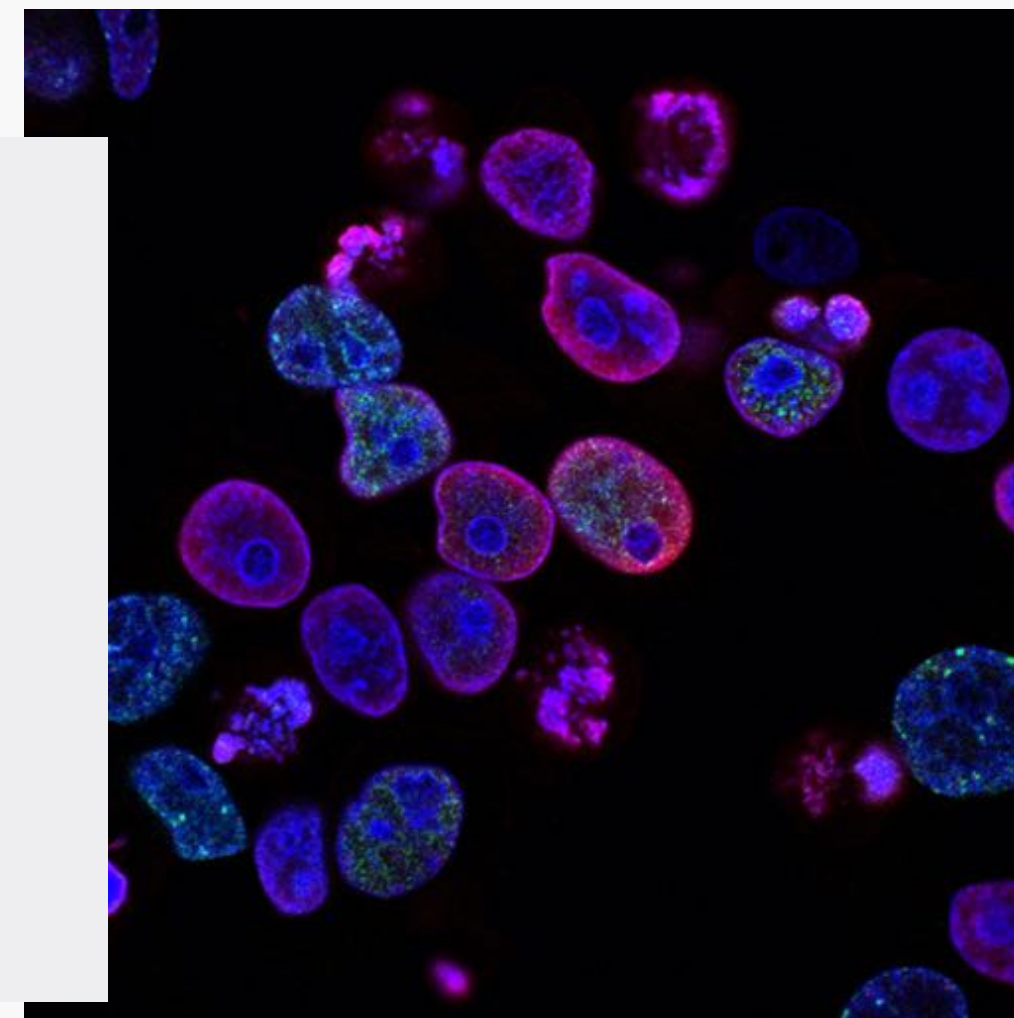
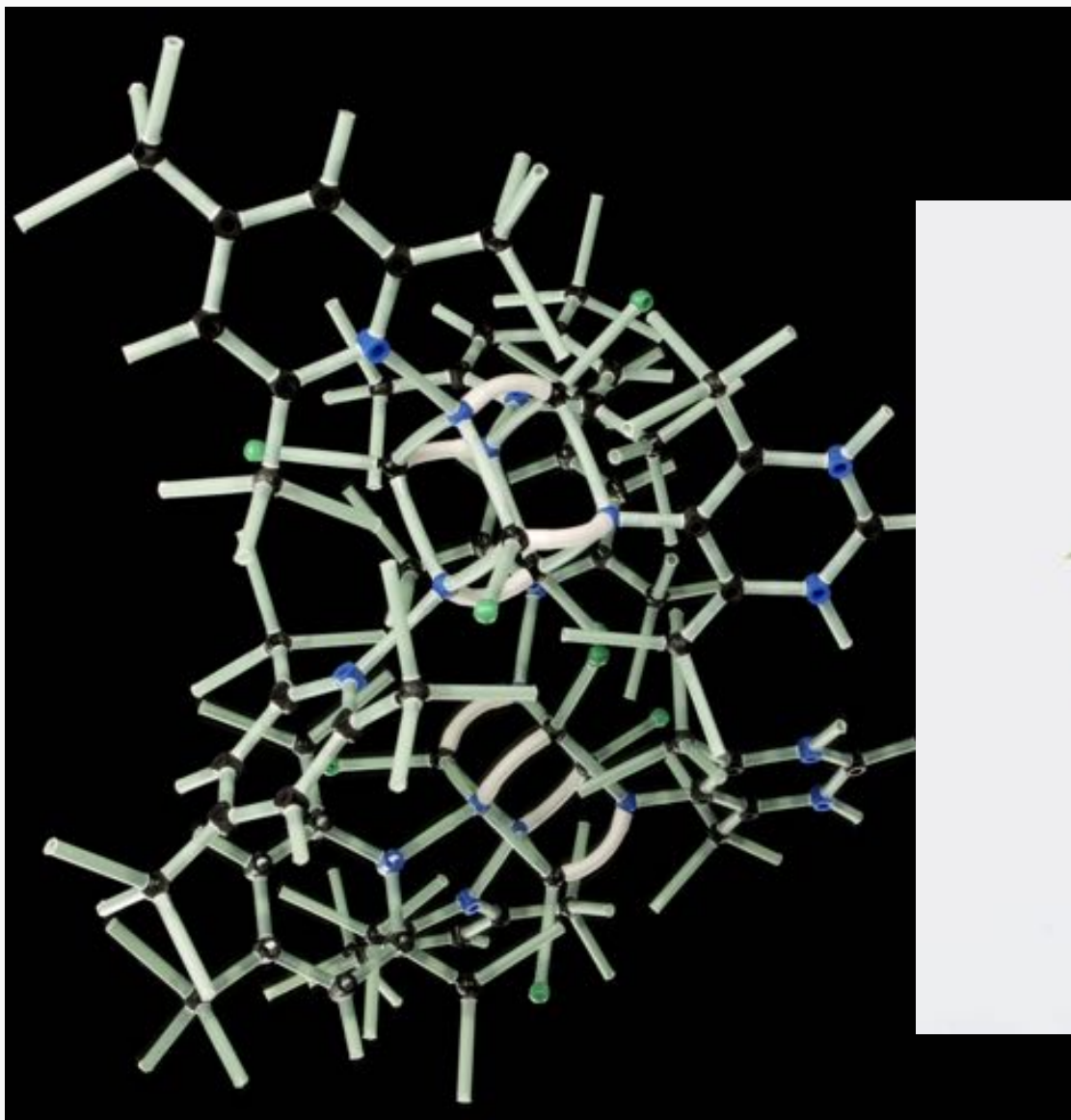


SUSTAINABLE, ENVIRONMENTAL CHEMISTRY AND TECHNOLOGY FOR CIRCULAR ECONOMY

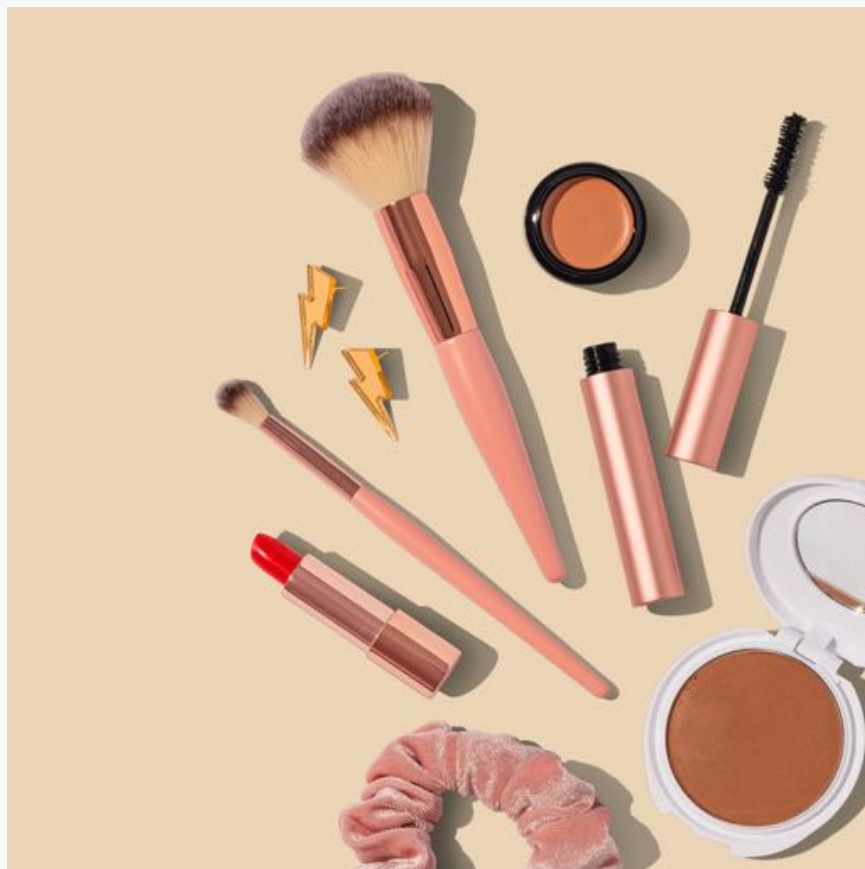




Welcome to the world of Sustainable, Environmental Chemistry ! In this course, you will explore important concepts and delve into the fascinating field of chemistry that focuses on creating a circular and sustainable future for our planet.

WHY CHEMISTRY ?

Because chemistry is our daily life. What we use, what we wear is a process of chemical by-product. For example SALT is sodium chloride it's a chemical compound (ionic) depending on if it's fluid or edible form it is differently used.



SO WHY NOT LEARN ABOUT SOMETHING WHAT WE USE EVERYDAY ?

ENVIRONMENTALLY FRIENDLY

Sustainable Chemistry

Sustainable Chemistry is the practice of understanding and implementing chemical processes that are environmentally friendly, economically viable, and socially responsible. It involves designing and producing chemicals in a way that minimizes their impact on the environment and promotes the efficient use of resources.



SUSTAINABILITY

Circular Economy

In today's world, it is crucial to shift towards sustainable practices that can help protect our environment. Circular economy plays a vital role in achieving this goal by promoting the reduction, reuse, and recycling of resources.





GUESS JEANS - FLORENCE

RECENT EXAMPLE

The new Guess Jeans brand that launched at Pitti Uomo January 10 th - 12 th

The official unveiling of the collection and of the trademarked Guess Airwash technology, developed by Jeanologia, a longtime partner of Guess took place.



GUESS AIRWASH™

80% less water consumption

500% - zero

conserves

no toxic

carbon footprint



stonewash

500% - 1250kg

energy

pollutes

toxic chemicals

The Guess Airwash technology is a sustainable alternative to stone washing, recreating the look of that original technique. Stone washing was spearheaded by Guess in 1981 when brothers Georges, Maurice, Armand and Paul Marciano founded the company. Its modern-day counterpart replaces the water used in stone washing with air and bubbles, eliminating the use of pumice stones and significantly decreasing the energy consumption of stone washing. All fabrications are made of organic or recycled materials.

Key Concepts of the Course

FUNDAMENTAL UNDERSTANDING



Develop a strong foundation in the basic concepts of environmental chemistry for sustainable solutions.

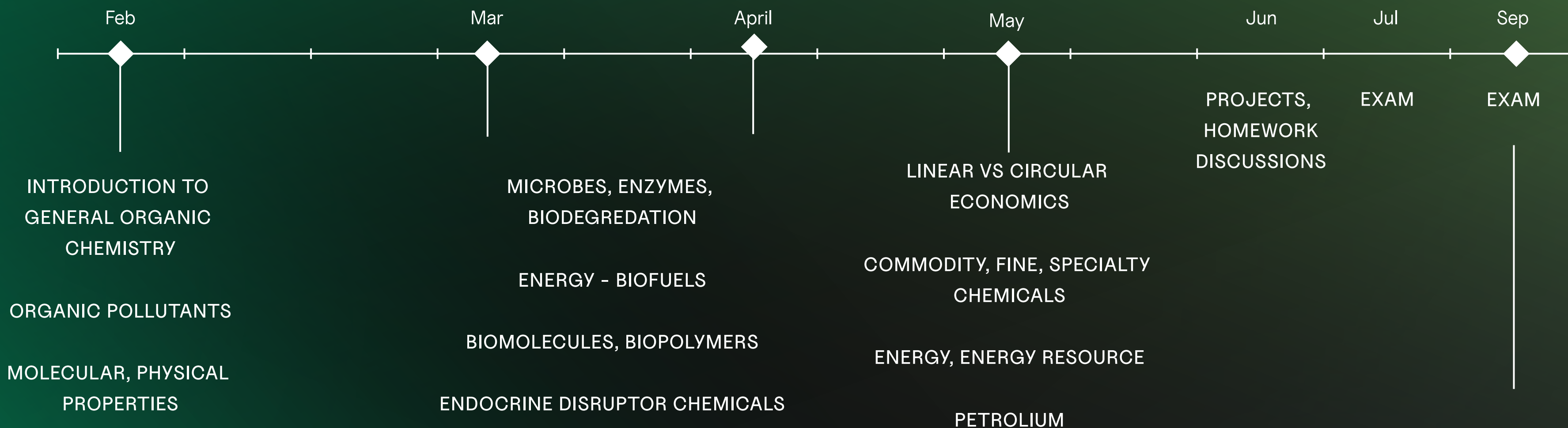
DETAILS OF THE COURSE TEST

This course is overall 12 CFU and it has been divided in 3 sections where our professors help you with each step of the process

Final test ? :

- DEPENDS IF YOU ARE ATTENDING STUDENT OR NOT because in the class it's more useful if u were to participate directly in the discussions we take during the lecture
- The test were written/pick a subject oral

Study plan: Exploring Circular Economy, Environmental Chemistry



TIPS

DON'T BE AFRAID TO ASK :)

TAKE NOTES

TAKE A LOOK ON THE LECTURES
FIRST THEN YOU CAN DO MORE
RESEARCH : FOUNDATION IS
IMPORTANT



ARE U READY TO TAKE SNEAK PEAK OF WHAT WE LEARN ?

Sometimes we make the process more complicated than we need to. We will never make a journey of a thousand miles by fretting about how long it will take or how hard it will be. We make the journey by taking each day step by step and then repeating it again and again until we reach our destination.

WHAT ARE FATTY ACIDS ?

Fatty acids	lamb	pork	beef	turkey	horse meat
SFA*	51.99	43.54	58.13	40.40	43.77
UFA*	30.3	47.45	37.80	40.91	45.14
MUFA*	23.55	36.59	30.55	28.63	22.97
PUFA*	6.75	10.86	7.25	12.25	22.17
PUFA/SFA	0.13	0.25	0.12	0.30	0.51
UFA/SFA	0.58	1.09	0.65	1.01	1.03
Elaidic acid (trans-9-C _{18:1})	3.2	2.63	3.1	–	–
Arachidonic acid (C _{20:4n6})	1.55	0.90	1.69	0.36	0.66
ω-3 PUFA	0.94	0.91	1.39	0.46	4.07
ω-6 PUFA	5.74	9.74	5.78	11.75	18.10
ω-6/ω-3	6.14	10.76	4.15	25.82	4.45

Note: * SFA – saturated fatty acids; UFA – unsaturated fatty acids; MUFA – monounsaturated fatty acids; PUFA – polyunsaturated fatty acids.

Fat is one of the major 3 nutrients made up of fatty acids.

A **fatty acid** is a **carboxylic acid** ($-\text{C}(\text{=O})\text{OH}$), with a long unbranched hydrocarbon tail. It is studied in organic chemistry and biochemistry. Their properties are determined by their composition, for example we digest fats but it's not considered by just it's physical fat ;

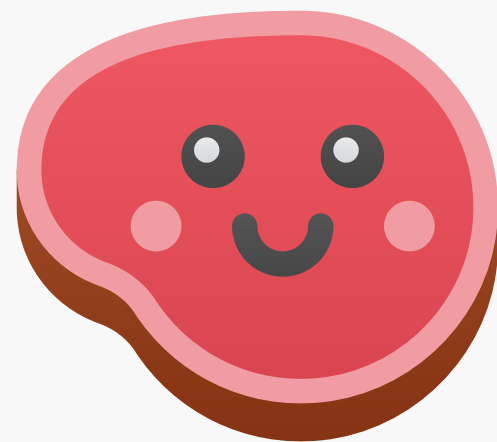
because it doesn't mean sheep is good and pig is bad.

During digestion, the body breaks down fats into fatty acids, which can then be absorbed into the blood. Fatty acid molecules are usually joined together in groups of three, forming a molecule called a triglyceride

A comparative study of A.B.Lisitsyn 2017

SFA - SATURATED FATTY ACIDS

Saturated fatty acids, or fats as we know them, are solid under normal conditions. Saturated refers to complete molecules in which carbon atoms are linked by sigma bonds. Saturated fats are high in animal fats and have the disadvantage of raising blood triglycerides. (Good for regulation of brain function)

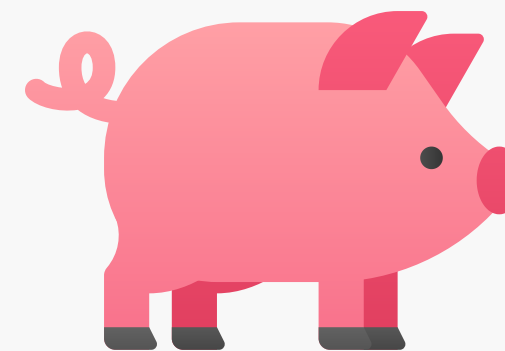


Beef fat has the highest saturated fat content at 58.13%

UFA- UNSATURATED FATTY ACIDS

Unsaturated means that hydrogen is missing and some of the carbon atoms are linked by sigma or pi bonds. The more these fatty acids are, the fat does not congeal and the oil becomes more digestible.

example : pork fat and horse fat (does not solidify like bone)



easy to say

fatty acids - omega 3





THANK YOU