



# Erasmus+ Moby Dig

## Transnational course in Biomaterials and Chemistry

| Agenda                                    | Topics  | Who  |
|---|---|--|
| 1. Introduction                           | General introduction to the MobyDig project                         |  |
|   | Introduction of participants  | Everyone (teachers and participants) introduce themselves with a few sentences |
| 2. Modules<br>(content, structure, tools) | Basic chemistry (CANVAS, calendar function, quiz, discussion board) | Julian   |
|   | Organic chemistry, Peerwise   | Matti, Johanna   |
|   | Biomaterials  | Linn   |
| 3. ISP                                    | Karlsruhe   | Julian   |
|   | Sweden  | Linn   |
|   | Finland   | Matti, Johanna   |
| 4. Other things                           |   |  |





## Online course – Part II Organic chemistry



## Online course teachers

Dr. Johanna Kärkkäinen



Dr. Matti Niemelä





# Organic chemistry online module

- Introduction to organic chemistry
- Nomenclature of organic compounds, especially alcohols and phenols
- Basic reactions of organic compounds, especially alcohols and phenols
- Applications of functionalized polysaccharides

|   |   |   |
|---|---|---|
| ⋮   | 📄 | Week 4 Monday: Functional groups and nomenclature                               |
| ⋮   | 📄 | Week 4 Tuesday: Properties and nomenclature of alcohols                         |
| ⋮   | 📄 | Week 4 Wednesday: Reactions of alcohols (Part 1)                                |
| ⋮   | 📄 | Week 4 Thursday: Reactions of alcohols (Part 2)                                 |
| ⋮   | 📄 | Week 4 Friday quiz  |
| ⋮ ▾ Week 5 (6-12 Nov): Organic Chemistry  |   |   |
| ⋮   | 📄 | Week 5 Monday: Carbohydrates (Part 1)   |
| ⋮   | 📄 | Week 5 Tuesday: Carbohydrates (Part 2)  |
| ⋮   | 📄 | Week 5 Wednesday: Chemical modification of starch                               |
| ⋮   | 📄 | Week 5 Thursday: Applications of functionalized polysaccharides - Project work  |
| ⋮   | 📄 | Week 5 Friday quiz  |
| ⋮ ▾ Week 6 (13-19 Nov): Organic Chemistry |   |   |
| ⋮   | 📄 | Week 6 Monday: Applications of functionalized polysaccharides - Project work    |
| ⋮   | 📄 | Week 6 Tuesday: Applications of functionalized polysaccharides - Project work   |
| ⋮   | 📄 | Week 6 Wednesday: Applications of functionalized polysaccharides - Project work |
| ⋮   | 📄 | Week 6 Thursday: Project work presentation and evaluation                       |
| ⋮   | 📄 | Week 6 Friday: Feedback   |



# Organic chemistry online module

29.10-18.11

## Learning techniques

Daily handouts and exercises, videos, examples, PeerWise questions, groupwork, Friday quizzes

## Tools

Peerwise  
Padlet  
Zoom

## Evaluation

Pass/Fail

## Video Lectures

- [Alcohol properties \(Khan Academy\)](#)



[How to draw an abbreviated structural formula for ethanol](#)

## Exercises



[Properties and nomenclature of alcohols](#)

## Student-generated questions

Create a question in [PeerWise](#) that covers some of yesterday's and today's content.

Answer another student's question as well!

[Logon instructions](#)

## Discussion



[Org chem general discussion](#)



# Organic chemistry - PeerWise instructions

This term we will be using PeerWise as a place for you to create, share and evaluate assessment questions with your classmates. Start by visiting PeerWise here:

<https://peerwise.cs.auckland.ac.nz/>

If you have not used PeerWise before, just click the "Registration" link and follow the prompts. All you need to do is choose a user name and a password for your PeerWise account.

If you have used PeerWise before, simply log in and then select "Join course" from the Home menu.

To access our course, "TCBC module 2 Organic chemistry", you will need to enter two pieces of information:

- 1) Course ID = 15975
- 2) Identifier = Please enter your identifier for this course (Your identifier is your email address e.g. [johanna.karkkainen@oulu.fi](mailto:johanna.karkkainen@oulu.fi))



# ISP - Oulu

## *Polysaccharides, their structure characterization and their utilization in some applications*



### Friday 11.1 Welcome

- Introduction to chemistry research and ISP

### Saturday 12.1 – Social program

- Social program: City of Oulu
- Video meeting with the other ISP participants

### Sunday 13.1 - Social program

### Monday 14.1 - Lab day

### Tuesday 15.1 - Lab day

### Wednesday 16.1– Social program

Visit to local chemistry companies for chemistry students and exchange students

### Thursday 17.1 - Lab day

### Friday 18.1 - Lab day

### Saturday 19.1 – Conclusions, feedback and social program

### Sunday 20.1 - Social Program

# OULU - ISP ORGANIC CHEMISTRY

- Modification of various biomasses
  - Preparation of cationic biomaterials and levulinic acid with microwave reactor
- Biomaterials in water purification applications
- Introduction to analysis methods such as ICP-OES, HPLC, GC, IR and NMR

