

Sustainable Use of Biological Systems

Title	Sustainable Use of Biological Systems
Semester	E2023
Master programme in	Miljø biologi / Environmental Science / Mathematical Bioscience
Type of activity	Course
Teaching language	English
Study regulation	Read about the Master Programme and find the Study Regulations at ruc.dk Læs mere om uddannelsen og find din studieordning på ruc.dk

REGISTRATION AND STUDY ADMINISTRATIVE

Registration	Sign up for study activities at STADS Online Student Service within the announced registration period, as you can see on the Study administration homepage. When signing up for study activities, please be aware of potential conflicts between study activities or exam dates. The planning of activities at Roskilde University is based on the recommended study programs which do not overlap. However, if you choose optional courses and/or study plans that goes beyond the recommended study programs, an overlap of lectures or exam dates may occur depending on which courses you choose.
Number of participants	The Master Programme/Institute reserves the right to cancel the course if fewer than 8 studentes are registered for the course.
ECTS	5
Responsible for the activity	Benni Winding Hansen (bhansen@ruc.dk) Per Meyer Jepsen (pmjepsen@ruc.dk)
Head of study	Per Meyer Jepsen (pmjepsen@ruc.dk)
Teachers	
Study administration	INM Registration & Exams (inm-exams@ruc.dk)
Exam code(s)	U60095

ACADEMIC CONTENT

Overall objective	This is a theoretical course (containing lectures, class-room exercises and student presentations) in applied ecology that will highlight the methods and challenges related to modern biological production and sustainable exploitation of natural populations. The course integrates elements of animal and plant physiology, population biology, sustainability theory, bioprocess science and social science to solve applied research questions in relation to the exploitation and management of plant and animal populations.
Detailed description of content	A theoretical course in applied ecology related to modern biological production and sustainable exploitation of natural populations. The course aims to integrate elements of physiology, population biology, sustainability theory, bioprocess science and social science to solve applied research questions in relation to the exploitation and management of plant and animal populations.
Course material and Reading list	Syllabus and reading material will be announced on Moodle ahead of the course.
Overall plan and expected work effort	Overall plan and expected work effort: The course consists of 18 lectures/exercises, each 2 hours (=2*45 minutes). Two of the lectures are optional and will only be used if some subjects require extra attention and/or if we have had to cancel previous lectures. The course is a 5 ETCS credit course, corresponding to an expected student work-load of 135 hours. • Lectures and exercises: 32-36 hours • Preparation (including preparation for the Individual written take-home assignment): 96-100 hours • We expect thus that students will spend at least 3-4 hours for preparation for a 2-hour lecture.
Format	
Evaluation and feedback	The course includes formative evaluation based on dialogue between the students and the teacher(s). Students are expected to provide constructive critique, feedback and viewpoints during the course if it is needed for the course to have better quality. Every other year at the end of the course, there will also be an evaluation through a questionnaire in SurveyXact. The Study Board will handle all evaluations along with any comments from the course responsible teacher. Furthermore, students can, in accordance with RUCs 'feel free to state your views' strategy through their representatives at the study board, send evaluations, comments or insights from the course to the study board during or after the course.
Programme	A theoretical course in applied ecology related to modern biological production and sustainable exploitation of natural populations. The course aims to integrate elements of physiology, population biology,

sustainability theory, bioprocess science and social science to solve applied research questions in relation to the exploitation and management of plant and animal populations.

Teaching and working method includes, lectures, small laboratory demonstrations, student presentations, classroom discussions and problem-solving exercises. Virtual Reality simulations and/or tutorials may be included wherever relevant.

ASSESSMENT

Overall learning outcomes

After completing the course, student will be able to:

- demonstrate knowledge of the conceptual world, mindsets, reasoning, and applications of bioproduction
- demonstrate knowledge of the most important environmental factors that affect populations used for bioproduction
- modify and manage environmental conditions in bioproduction systems and improve the quality and quantity of biomass production
- design integrated approaches for biomass production and processes accounting for sustainable use of natural resources
- manage, manipulate and exploit selected natural biological resources including the perspectives for sustainable production
- plan and manage the exploitation of organisms from a broad range of domains
- plan, design, operate and optimize suitable bioproduction systems including downstream processes for bioproducts
- plan, design, validate and manage a wide variety of biological production systems
- discuss and enter into collaborations and partnerships in an interdisciplinary manner with knowledge of physiological and ecological conditions in biological production contexts in order to propose solutions to specific research questions.

Form of examination

Individual written take-home assignment.

The character limit of the assignment is: 12,000-36,000 characters, including spaces.

The character limit includes the cover, table of contents, bibliography, figures and other illustrations, but exclude any appendices.

The duration of the take-home assignment is 7 days and may include weekends and public holidays.

Assessment: 7-point grading scale.

Moderation: Internal co-assessor.

Form of Re-examination

Samme som ordinær eksamen / same form as ordinary exam

Type of examination in special cases

Examination
and
assessment
criteria

Individual written take-home assignment. Student draws an assignment title from a lot and will have 7 days (may include weekends and public holidays) to hand in.

Assesment criteria: - demonstrate knowledge of the conceptual world, mindsets, reasoning, and applications of bioproduction

- demonstrate knowledge of the most important environmental factors that affect populations used for bioproduction
- modify and manage environmental conditions in bioproduction systems and improve the quality and quantity of biomass production
- design integrated approaches for biomass production and processes accounting for sustainable use of natural resources
- manage, manipulate and exploit selected natural biological resources including the perspectives for sustainable production
- plan and manage the exploitation of organisms from a broad range of domains
- plan, design, operate and optimize suitable bioproduction systems including downstream processes for bioproducts
- plan, design, validate and manage a wide variety of biological production systems
- discuss and enter into collaborations and partnerships in an interdisciplinary manner with knowledge of physiological and ecological conditions in biological production contexts in order to propose solutions to specific research questions.

Exam code(s) Exam code(s) : U60095

Course days:

Hold: 1

Sustainable Use of Biological Systems (ES)

time 08-09-2023 10:15 til
 08-09-2023 12:00

location 12.2-079 - teori 12.2 (15)

Teacher Benni Winding Hansen (bhansen@ruc.dk)
 Per Meyer Jepsen (pmjepsen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 12-09-2023 10:15 til
 12-09-2023 12:00

location 12.2-079 - teori 12.2 (15)
Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 13-09-2023 14:15 til
13-09-2023 16:00
location 12.2-079 - teori 12.2 (15)
Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 15-09-2023 10:15 til
15-09-2023 12:00
location 12.2-079 - teori 12.2 (15)
Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 19-09-2023 10:15 til
19-09-2023 12:00
location 12.2-079 - teori 12.2 (15)
Teacher Benni Winding Hansen (bhansen@ruc.dk)
Per Meyer Jepsen (pmjepsen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 20-09-2023 14:15 til
20-09-2023 16:00
location 12.2-079 - teori 12.2 (15)
Teacher Benni Winding Hansen (bhansen@ruc.dk)
Per Meyer Jepsen (pmjepsen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 22-09-2023 10:15 til
22-09-2023 12:00

location 12.2-079 - teori 12.2 (15)

Teacher Benni Winding Hansen (bhansen@ruc.dk)
Per Meyer Jepsen (pmjepsen@ruc.dk)

Sustainable Use of Biological Systems (ES) - Room: 11.2-075

time 26-09-2023 10:15 til
26-09-2023 12:00

Teacher Benni Winding Hansen (bhansen@ruc.dk)
Per Meyer Jepsen (pmjepsen@ruc.dk)

Sustainable Use of Biological Systems (ES) - Room: 11.2-075

time 27-09-2023 14:15 til
27-09-2023 16:00

Teacher Benni Winding Hansen (bhansen@ruc.dk)
Per Meyer Jepsen (pmjepsen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 29-09-2023 10:15 til
29-09-2023 12:00

location 12.2-079 - teori 12.2 (15)

Teacher Benni Winding Hansen (bhansen@ruc.dk)
Per Meyer Jepsen (pmjepsen@ruc.dk)

Sustainable Use of Biological Systems (ES) - Room: 11.2-075

time 03-10-2023 10:15 til
03-10-2023 12:00

Teacher Benni Winding Hansen (bhansen@ruc.dk)
Per Meyer Jepsen (pmjepsen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 04-10-2023 14:15 til
04-10-2023 16:00

location 12.2-079 - teori 12.2 (15)

Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 06-10-2023 10:15 til
06-10-2023 12:00

location 12.2-079 - teori 12.2 (15)

Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 10-10-2023 10:15 til
10-10-2023 12:00

location 12.2-079 - teori 12.2 (15)

Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 11-10-2023 14:15 til
11-10-2023 16:00

location 12.2-079 - teori 12.2 (15)

Teacher Benni Winding Hansen (bhansen@ruc.dk)
Per Meyer Jepsen (pmjepsen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 13-10-2023 10:15 til
13-10-2023 12:00

location 12.2-079 - teori 12.2 (15)

Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 24-10-2023 10:15 til
24-10-2023 12:00

location 12.2-079 - teori 12.2 (15)

Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 25-10-2023 14:15 til
25-10-2023 16:00

location 12.2-079 - teori 12.2 (15)

Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems (ES)

time 27-10-2023 10:15 til
27-10-2023 12:00

location 12.2-079 - teori 12.2 (15)

Teacher Per Meyer Jepsen (pmjepsen@ruc.dk)
Benni Winding Hansen (bhansen@ruc.dk)

Sustainable Use of Biological Systems - Take-home assignment (ES)

time 07-11-2023 10:00 til
13-11-2023 10:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

Sustainable Use of Biological Systems - Take-home assignment (reexam) (ES)

time 23-01-2024 10:00 til
30-01-2024 10:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

