Schedule for BL7044 Animal Diversity - Invertebrates 10HEC, HT 2024

The course starts 6 November

Field course at Tjärnö Marine laboratory 13-24 November

Course leader:

Ulf Jondelius ulf.jondelius@nrm.se 0707-838711

Teachers:

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Course format: *e-learning course* in English using Zoom and Athena.

Lectures will be on Zoom and material (presentation pdfs) will be available in most cases. In addition we will use compendia and journal articles. We will use the Athena site of the course for distribution of materials and Zoom links.
Active participation in group discussions, the fieldcourse, submission of a project report and a presentation for the seminar are all compulsory. Teachers can be contacted by email anytime during his/her block of teaching.

Literature: Brusca, Moore, Shuster. 2016. Invertebrates 3rd edition. Sinauer Associates. ISBN 9781605353753. There is now also a 4th edition of this textbook, which of course also works well. Other materials distributed during the course.

The course covers:

- Animal diversity and evolution with emphasis on modern systematic research.
- A systematic review of the biology, comparative anatomy, and phylogeny of extant and some fossil animal groups.
- A discussion of current hypotheses on invertebrate evolution

Learning outcomes

It is expected that the student after taking the course will:

- be familiar with the main animal groups, their biology, comparative anatomy, diversity and life cycles
- be able to describe and discuss the evolution and phylogeny of Metazoa,
- be able to discuss current hypotheses on Animal evolution

Forms of examination

- There will be a practical test during the field course (”dugga”).
- The completion of the “Problematica” seminar presentation.
- The completion of an individual project.
- The final examination consists of a formal test with questions which will be distributed by e-mail.

Grading is on a 7-point scale related to the learning objectives:

A = Excellent; B = Very Good; C = Good; D = Satisfactory; E = Sufficient, Fx = Fail; F = Fail

Exam:

2024-12-13 Written exam distributed by e-mail

Second opportunity for those who did not pass the first exam (omtentamen) is 2025-01-17

Schedule

Date	Day	Teachers	Topic	Where
2024-11-04	Monday	Ulf Jondelius	9.00-15.00 Introduction to the course. Metazoa. Porifera, Ctenophora and Cnidaria	Zoom
2024-11-05	Tuesday	Ulf Jondelius	9.00-11.00 Bilateria, Xenacoelomorpha, deuterostomes and protostomes.UJ 13.00-16.00 Gnathifera (Monogononta-Seisonida,Bdelloida,Acanthocephala, Micrognathozoa, Gnathostomulida). SA	Zoom
2024-11-06	Wednesday	Ulf Jondelius	9.00-14.00 Echinodermata, Annelida	Zoom
2024-11-07	Thursday	Tim Topper	9.00-15.00 Invertebrate fossils	Zoom
2024-11-08	Friday	Tim Topper	9.00-15.00 Invertebrate fossils	Zoom
2024-11-11	Monday		Travel to Tjärnö. See separate information. Arrival by 17.00	
2024-11-12	Tuesday	Ulf Jondelius, MM	9.00-12.00 Introduction to the field course.-Gastrotricha and Platyhelminthes 13.00 Collection trip with R/V Nereus	Tjärnö
2024-11-13	Wednesday	Ulf Jondelius, MM	9.00-12.00 Nemertea, Mollusca. 13.00— Lab	Tjärnö
2024-11-14	Thursday	Ulf Jondelius, MM	9.00-12.00 Collection trip with R/V Nereus 13.00—Lab	Tjärnö
2024-11-15	Friday	Oleksandr Holovachov (on video)	9.00-12.00 Nematoda and other Cycloneuralia. 13.00— Lab	Tjärnö
2024-11-16	Saturday	Ulf Jondelius, MM	9.00-11.00 Phoronida, Brachiopoda, Bryozoa. Excursion on Saltö. Collection on the shore and in freshwater. Study/work on projects	Tjärnö
2024-11-17	Sunday	Ulf Jondelius, MM	Study/work on projects. Lab. Review at 17.00	Tjärnö

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Date	Day	Teachers	Topic	Where
2024-11-18	Monday	Ulf Jondelius, MM	9.00-12.00 Collection trip with R/V Nereus 13.00—Lab	Tjärnö
2024-11-19	Tuesday	Ulf Jondelius, MM	9.00-12.00 Arthropoda (Pantopoda, Xiphosura and Pancrustacea). 13.00— Lab	Tjärnö
2024-11-20	Wednesday	Ulf Jondelius, MM	8.30-10.30 Plankton sampling with R/V Nereus. 1030-12.00 Lab Plankton studies. 13.00-16.00 Plankton studies (MM on collection trip for dugga) continued. 16.00-17.00 Metazoan phylogeny	Tjärnö
2024-11-21	Thursday	Ulf Jondelius, MM	9.00-12.00 Study/work on projects. 13.00 Dugga (practical test). Cleaning of the lab.	Tjärnö
2024-11-22	Friday		Return trip from Tjärnö	
2024-11-25	Monday	Victor Passanha	9.00-12.00 Terrestrial arthropods. Chelicerata, Myriapoda. 13.00-16.00 Terrestrial arthropods. Chelicerata, Myriapoda.	Zoom
2024-11-26	Tuesday	Tobias Malm	9.00-12.00 Apterygota. Evolution of wings 13.00-16.00 Article discussion	Zoom
2024-11-27	Wednesday	Hege Vårdal	9.00-12.00 Polyneoptera overview. Zoolsidan. 13.00-16.00 lab	Zoom
2024-11-28	Thursday	Hege Vårdal	9.00-12.00. Paraneoptera 13.00-15.00 Holometabola. Hymenoptera	Zoom
2024-11-29	Friday	Johannes Bergsten	9.00-12.00 Holometabola. Coleoptera etc. 13.00-16.00 Lab	Zoom
2024-12-02	Monday	Emma Wahlberg Tobias Malm	9.00-12.00 Lab and photo quiz 13.00-16.00 Holometabola Trichoptera,Lepidoptera	Zoom
2024-12-03	Tuesday		Work on individual projects, preparation for seminar, study for exam.	
2024-12-04	Wednesday		Work on individual projects, preparation for seminar, study for exam.	
2024-12-05	Thursday		Work on individual projects, preparation for seminar, study for exam.	

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Date	Day	Teachers	Topic	Where
2024-12-06	Friday		Work on individual projects, preparation for seminar, study for exam.	
2024-12-09	Monday		Work on individual projects, preparation for seminar, study for exam.	
2024-12-10	Tuesday		13.00 seminar on “Problematica” (Instructions given at Tjärnö)	Zoom
2024-12-11	Wednesday		Work on individual projects, study for exam.	
2024-12-12	Thursday		Deadline for submission of individual project at 17.00 (via Athena). Course ends	
2024-12-13	Friday	Ulf Jondelius	9.00-14.00 Exam. Questions will be e-mailed at 09.00 and should be returned by 14.00 by e-mail. Course ends	Zoom
2025-01-17	Wednesday		Second oppotunity exam	

Field course at Tjärnö Marina Laboratorium

During the field course you will have the opportunity to participate in sampling trips with R/V Nereus. We will also make excursions to the shore and to freshwater habitats. It is a good idea to bring warm clothing and rain gear. You will also need to bring bed linen and towel.

Tjärnö has a comprehensive and compulsory meal plan. The cost for all meals from dinner 11 through breakfast 22 November is 3084 SEK. Payment instructions are below. Send me an e-mail by 4 November at ulf.jondelius@nrm.se if you have special dietary requirements, eg. food allergies, vegetarian diet etc. with subject "Tjärnö Food". There is no charge for accommodation at Tjärnö.

Please arrive at Tjärnö in time for dinner at 17.00 on 11 November.

You will need to book and purchase your ticket individually. Ticket costs for the return trip from Stockholm will be reimbursed by the Stockholm University Department of Biology Education (big.su.se) upon presentation of receipts/tickets (info.big@su.se)

Suggested itinerary if you are travelling from Stockholm on public transportation

11 Nov

Train 425 from Stockholm Central station to Göteborg	08.34-11.35
Bus 841 from Göteborg Nils Ericson terminal Torp	12.23-13.30
Bus 870 fromTorp to Strömstad station	13.35-15.11
Bus 891 from Strömstad to Tjärnölaboratoriet	16.05-16.28

22 Nov

Bus 891 from Tjärnölaboratoriet to Strömstad station	07.36-08.05
Bus 871 from Strömstad to Torp	09.20-10.30
Bus 841 from Torp to Göteborg Central Station	10.35-11.41
Train 176 from Göteborg C to Stockholm C	11.59-16.43

(There are other options, see https://reseplanerare.resrobot.se)

Payment for food at Tjärnö

The cost for all meals is 3084 SEK
From Swedish account
Bankgiro: 5050-0206 (Danske bank)
Message: 91000636/460091/34422 and your name and course code BL7044
From international account
Bank: Danske Bank, Norrmalmstorg 1, 111 46 Stockholm
Bank account: 12810117756
IBAN: SE1612000000012810117756
SWIFT/BIC: DABASESX
Organisation number: 202100-3062
VAT nr: SE202100306201
Message: 91000636/460091/34422 and your name and if possible course code.
If paying in currency other than SEK use the exchange rate at day of payment and pay any bank fees.