Course name and code, 4 Nov., 2019 - 17 Jan., 2020

Department of Biology, Lund University

Course leader: Fredric Carlsson / Email: fredric.carlsson@biol.lu.se / Phone: 046-2224197

Other Teachers: Klas Fibhöf (KF), Claes von Wachenfeldt (CvW), Catherine Paul (CP), Stefan Schwartz (SS), Edith Hammer (EH), Vinardas Kelpsas (VK), Beer Sen (BS)

Location: see web schedule at L@L

Learning platform: L@L

Teaching activities: L (lecture), Sem (seminar), G (group exercises), Lab, Proj (Project), Ind (Independent studies)

Compulsory activities are marked with C. If you are absent from a compulsory activity without a valid reason you are not guaranteed to complete this part until the next time the course is offered. A valid reason is e.g. that you are ill, but not that you are travelling!

Before the start of the course please read the 3 documents at current student, Biology Department:

Location: access and regulations, Safety regulations, Plagiarism and cheating policy

Additional information for students can be found at

Current student at LU Current student at Dept. of Biology

Students rights and guidelines

Date        Time        Activity (mark w. C) Description Teacher
Mo. 4 Nov.  10.15-11.00  C       Introduction to the course  PC
11.00-12.00  L       10 reasons to study microbiology  FC
Tu. 5 Nov.  10.15-12.00  L  Microbial evolution and systematics  CvW
11.00-12.00  C       Intro to the laboratory and facilities, divide lab groups and seminar groups, safety walk through  FC, BS, VK
We. 6 Nov.  10.15-12.00  L  The prokaryotic cell (I)  FC
13.15-15.00  C       Lab I: Basic microbiological techniques (Day 1)  BS, VK
Th. 7 Nov.  10.15-12.00  L  The prokaryotic cell (I)  C  or followed by enrichment project lottery  PC
13.00-14.00  Ind     No classes, individual studies  
Fr. 8 Nov.  10.15-12.00  L  Microbiological media and nutrition - An introduction  FC
13.15-15.00  C       Lab I: Basic microbiological techniques (Day 2)  BS, VK
Mo. 11 Nov. 10.15-12.00  L  Structure and function of bacterial membranes; Hand out Seminar I questions  FC
13.15-15.00  Ind     Planning of enrichment project; need to hand in study today or tomorrow  
Tu. 12 Nov. 11.15-12.00  L  Please contrast and light microscopy  PC
13.15-17.00  Ind     Work with seminar questions and enrichment project planning  
We. 13 Nov. 10.15-12.00  L  Energy metabolism (I) - Carbon flow  CvW
13.15-17.00  Ind     Planning of enrichment project  
Th. 14 Nov. 10.15-12.00  Ind C  Hand in enrichment project plan  FC
13.00-17.00  Ind     No classes, individual studies  
Fr. 15 Nov.  9.15-11.00  Sem C  (A) Seminar I - The prokaryotic cell/bacterial diversity  PC
11.15-13.00  Sem C  (B) Seminar I - The prokaryotic cell/bacterial diversity  PC
13.15-15.00  C       Enrichment project  BS, VK
Mo. 18 Nov. 10.15-12.00  L  Growth kinetics and environmental influences on growth; Hand out Seminar II questions  KF
13.15-16.00  Lab C  Enrichment project  BS, VK
Tu. 19 Nov. 10.15-12.00  L  Bacterial cell cycle and differentiation  KF
13.15-16.00  Lab C  Enrichment project  BS, VK
13.15-16.00  Lab C  Enrichment project  BS, VK
We. 20 Nov. 10.15-12.00  L  Communication and regulation, stress responses and biofilms  KF
13.00-15.00  Ind     Work with seminar questions  
Th. 21 Nov. 10.15-12.00  Lab Enrichment project  BS, VK
13.00-17.00  Ind     No classes, individual studies  
Fr. 22 Nov.  9.15-12.00  Sem C  (A) Seminar II - Growth and differentiation  KF
10.15-12.00  Ind C  (B) Individual studies  BS, VK
13.15-15.00  Sem C  (B) Seminar II - Growth and differentiation  KF
13.15-15.00  Ind C  (A) Individual studies  BS, VK
Mo. 25 Nov. 10.15-12.00  L  Energy metabolism (II) - Diversity; Hand out Seminar III questions  CvW
13.15-16.00  Lab C  Enrichment project  BS, VK
Tu. 26 Nov. 10.15-12.00  L  Energy metabolism (II) - Biogeochemical cycles  CvW
13.15-16.00  Lab C  Lab II: Identification of Gram-negative rod shaped bacteria (Day 1)  BS, VK
We. 27 Nov. 10.15-12.00  L  Membrane proteins and transport  CvW
13.15-16.00  Lab C  Lab II: Identification of Gram-negative rod shaped bacteria (Day 2)  BS, VK
Th. 28 Nov. 10.15-12.00  Lab Enrichment project  BS, VK
13.00-17.00  Ind     Read many course period 2  
Fr. 29 Nov. 10.15-12.00  Sem C  (B) Seminar III - Energy metabolism  CvW
10.15-12.00  Ind C  (A) Individual studies  BS, VK
13.15-15.00  Sem C  (A) Seminar III - Energy metabolism  CVW
13.15-15.00  Ind C  (B) Individual studies  BS, VK
Mo. 2 Dec.  10.15-12.00  L  Applied microbiology - An introduction  KF
13.15-14.00  L  C  How to present research - with a focus on your enrichment projects  KF
Tu. 3 Dec.  10.15-12.00  L  The microbiology of milk products  KF
10.15-12.00  Lab Enrichment project - preparation of DNA  BS, VK
We. 4 Dec.  10.15-12.00  Lab Enrichment project - preparation of DNA  BS, VK
19.15-21.00  Lab DNA preparation and PCR  BS, VK
Fr. 6 Dec.  10.15-12.00  L  last lecture applied microbiology - Drinking water microbiology  CF
13.15-16.00  Lab Enrichment project  BS, VK
Tu. 10 Dec. 10.15-12.00  L  Medical microbiology (I); Hand out Seminar IV questions  FCF
13.15-16.00  Lab C  (A) Seminar IV - Growth and differentiation  KF
13.15-16.00  Lab C  (B) Individual studies  BS, VK
We. 11 Dec. 10.15-12.00  L  Antibiotics and resistance  CVW
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Type</th>
<th>Topic</th>
<th>Instructor(s)</th>
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</thead>
<tbody>
<tr>
<td>Th. 12 Dec.</td>
<td>10:15-12:00</td>
<td>L</td>
<td>Guest lecture (medical microbiology) - Viruses</td>
<td>BS</td>
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<tr>
<td>Fr. 13 Dec.</td>
<td>10:15-12:00</td>
<td>Sem</td>
<td>Cell Seminar IV - Medical microbiology</td>
<td>FC</td>
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<td></td>
<td>10:15-12:00</td>
<td>Int</td>
<td>Enrichment project - preparation of report (schedule a meeting with mentor on Dec 18 or 19)</td>
<td>BS, VK</td>
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<td></td>
<td>13:15-15:00</td>
<td>Sem</td>
<td>Cell Seminar IV - Medical microbiology</td>
<td>FC</td>
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<td></td>
<td>13:15-15:00</td>
<td>Int</td>
<td>Enrichment project - preparation of report (schedule a meeting with mentor on Dec 18 or 19)</td>
<td>BS, VK</td>
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<tr>
<td>Mo. 16 Dec.</td>
<td>10:15-12:00</td>
<td>L</td>
<td>Guest lecture - Molecular microbial ecology</td>
<td>EH</td>
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<tr>
<td>Tu. 17 Dec.</td>
<td>10:15-12:00</td>
<td>L</td>
<td>Analyses of 16S rRNA sequence data</td>
<td>CvW</td>
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<tr>
<td>Tu. 17 Dec.</td>
<td>13:15-14:30</td>
<td>L</td>
<td>Information: Exchange studies (in English)</td>
<td>Tina Løide</td>
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<tr>
<td>Fr. 18 Dec.</td>
<td>10:15-12:00</td>
<td>Lab</td>
<td>Enrichment project - PCR sequence analysis</td>
<td>BS, VK</td>
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<tr>
<td>Fr. 18 Dec.</td>
<td>13:15-15:00</td>
<td>Int</td>
<td>Enrichment project (also, have a &lt;30 min discussion with mentor today or tomorrow)</td>
<td>BS, VK</td>
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<tr>
<td>Th. 19 Dec.</td>
<td>10:15-12:00</td>
<td>Int</td>
<td>Individual studies</td>
<td>BS, VK</td>
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<tr>
<td>Fr. 20 Dec.</td>
<td>10:15-12:00</td>
<td>Int</td>
<td>Submit final enrichment project report to mentor no later than 16.00, and schedule meeting for final feedback on Jan 7</td>
<td>BS, VK</td>
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<tr>
<td>Mo. 6 Jan</td>
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<td>Winter break</td>
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<tr>
<td>Tu. 7 Jan.</td>
<td>10:15-16:00</td>
<td>Int</td>
<td>Final feedback (&lt;30 min) from mentor on enrichment project report/presentation</td>
<td>BS, VK</td>
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<tr>
<td>We. 8 Jan.</td>
<td>10:15-12:00</td>
<td>Lab</td>
<td>Finish up cleaning the lab</td>
<td>BS, VK</td>
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<tr>
<td>Th. 9 Jan.</td>
<td>13:00-14:30</td>
<td></td>
<td>Information: Exchange studies (in English)</td>
<td>Tina Løide</td>
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<td>Fr. 10 Jan.</td>
<td>10:15-12:00</td>
<td>Sem</td>
<td>ORAL PRESENTATIONS OF ENRICHMENT PROJECT</td>
<td>FC, KF, CvW, BS, VK</td>
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<tr>
<td>Fr. 10 Jan.</td>
<td>13:15-15:00</td>
<td>Int</td>
<td>Questions and answers</td>
<td>FC, KF, CvW</td>
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<tr>
<td>We. 11 Jan.</td>
<td>10:15-12:00</td>
<td>Sem</td>
<td>No classes, individual studies</td>
<td>FC, KF, CvW</td>
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<tr>
<td>Th. 12 Jan.</td>
<td>13:00-18:00</td>
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<td>WRITTEN COURSE EXAMINATION</td>
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**Weekend Schedule:**

- **Mo. 20 Jan.**: Do the course evaluation, Please!!
- **Tu. 27 Feb.**: No examination