

Technical Biology (KBKA05), 2013

Date	Lecture	Reading materials	Laboratory (AMH, NW, TA) kl. 13.00 – 18.00 GU-lab 2, Hus 1, plan -1
Mon. 28 Oct. K:C, 11.15 – 12.00	Course information (LY)		
Tue. 29 Oct. V:B, 08.15 – 10.00	Mikroorganismer (PR) Morfologi	[Prescott: 1-12, 17-18 19-22, 25-31, 35-36 , 37-38, 46-50 , 59-60]	
Wed. 30 Oct. K:C, 13.15 – 15.00	Prokaryot/Eukaryot (PR)	[Prescott: 50-65 , 65-81, 81-84 , 88-92 , 92-110, (kapitel 18, 22, 23, and 24 läses kursivt)]	
Thu. 31 Oct. K:C, 08.15 – 10.00	Medier/Miljö (PR) Tillväxt	[Prescott 137-138-141 , 141-152 , 155-185 ,185-186, 1054- 1057]	
Mon. 4 Nov. K:C, 10.15 – 12.00	Sterilisering (PR)	[Prescott: 190-205 , 1012-1015]	Lab. 1, grp A (Mikroskopering)
Tue. 5 Nov.			Lab. 1, grp B (Mikroskopering)
Wed. 6 Nov. K:L1, L2, 10.15 – 12.00	Introduction to scientific paper (LY) Protein (LY)	[Prescott: A1-A5, A5-A8] [Compendium Biochem: 19-49]	
Thu. 7 Nov. K:I, 08.15 – 10.00	Enzyme (LY)	[Prescott: 217-222] [Compendium Biochem: 51-71]	
Tue. 12 Nov. K:C, 15.00 – 17.00	Dugga (LY, PR)		
Wed. 13 Nov.			Lab. 2, grp A (Skakkolvsodling av <i>E. coli</i>)
Thu. 14 Nov.			Lab. 2, grp B (Skakkolvsodling av <i>E. coli</i>)
Mon. 18 Nov. K:C, 10.15 – 12.00	Antibiotika och genetik (PR)	[Prescott: 826-847 , 271-274, 376-381, 735 , 1022-1023]	
Tue. 19 Nov.			Lämna in labbrapport 1
Wed. 20 Nov.			Lab. 3, grp A1 (protein purification)
Thu. 21 Nov.			Lab. 3, grp A1 (protein purification)
Tue. 26 Nov. V:B, 08.15 – 10.00	Metabolism I (LY)	[Prescott: 208-217 , 228-236] [Compendium Biochem: 73-92]	Lab. 3, grp A2 (protein purification)
Wed. 27 Nov.			Lab. 3, grp A2 (protein purification)
Thu. 28 Nov. K:C, 08.15 – 10.00	Metabolism II (LY)	[Prescott: 236-250] [Compendium Biochem: 93-111]	Lab. 3, grp B1 (protein purification)
Fri. 29 Nov.			Lab. 3, grp B1 (protein purification) Labbrapport 1 tillbaka
Mon. 2 Dec. K:C, 10.15 – 12.00	Metabolism III (LY)	[Prescott: 249-285] [Compendium Biochem: 113-128]	Lab. 3, grp B2 (protein purification)
Tue. 3 Dec. V:B, 8.15 – 10.00	Biogeokem. cykler (EvN) Taxonomi	[Prescott: 446-458, 459-462 , 462-466, 644-652 , 653-657, 853-870]	Lab. 3, grp B2 (protein purification)
Wed. 4 Dec. K:C, 10.15 – 12.00	Enzyme technology (P-O)		
Thu. 5 Dec. K:C, 08.15 – 10.00	Industriell mikrob. (EvN) Fermentation	[Prescott: 166-173 , 1051- 1070]	

Mon. 9 Dec. K:C, 10.15 – 12.00	Genteknik (LB)	[Prescott: 397-414]	
Wed. 11 Dec. K:C, 10.15 – 12.00	Project meeting (LY)		
Fri. 13 Dec.			Labbrapport 2 tillbaka (kan hämtas efter kl. 15 på avdelningen)
Wed. 18 Dec. MA10-F-J 08.00 – 13.00	Written examination		

Homepage

<http://www.tbiokem.lth.se/homepage/Kursen/KBKA05/KBKA05.html>

Assessment

To pass the course, students need to submit lab reports, finish a literature project work, and get enough points from written exam. The passed students will get Grade 3. Unsuccessful lab report or project work will be returned to students until revised hand-ins become acceptable. An optional dugga is provided. The results of the dugga and the final written exam will be combined to define the students' final grades. More details on the assessment can be found on the next page.

Labbrapport 2 (for Lab. 3) from each group must be submitted within one week after finishing the lab work, *e.g.* grp A1 will finish Lab. 3 on Nov. 21, so they must submit the report before Nov. 28. The report will be assessed and returned to the students within one week, *i.e.* before Dec. 5.

Teachers

AMH = Alejandro Munoz de las Heras, NW = Nora Weber, TA = Tove Andersson

EvN = Ed van Niel, PR = Peter Rådström, LB = Leif Bülow, P-O = Per-Olof Larsson, LY = Lei Ye

Literature

- Prescott, Harley and Klein's Microbiology (8th edition) by Willey, Sherwood and Woolverton, McGraw-Hill, ISBN: 9780077131586. The book can be purchased from KFS in Lund.
- Compendium in Biochemistry, 100 SEK, can be purchased from Media-Tryck in KC.
- Laborationskompodium, 50 SEK, available during the course introduction on Oct. 28.

Course coordinator

Lei Ye, tel. 046-222 9560, e-mail: Lei.Ye@tbiokem.lth.se

Assessment

To pass the course (Grade 3), students need to pass two laboratory reports, finish a literature project report, and obtain a minimal of 12 points from the final exam and the dugga. Unsuccessful lab reports and literature project reports will be returned to students until revised hand-ins become acceptable. An optional dugga and a compulsory final written exam will be used to judge the students' grades.

The grades awarded are: Grade 3 (pass) – approved laboratory reports and literature report, and 12-15 points from the exam (+ dugga); Grade 4 (Very Good): 16-19 points; Grade 5 (Excellent) \geq 20 points.

- A. Laboratory exercises
 - Report 1 (microscopy and bacterial growth)
 - Report 2 (protein purification)
- B. Dugga, optional (8 p)
- C. Literature report
- D. Written exam, compulsory (24 p)

Compulsory Individual Literature Report

Apart from gaining knowledge in a specific area (addressing biochemical/microbial processes in chemical engineering), the aim of these reports is to train students in report presentations and scientific scrutiny.

Topics: Biosensors, Biogas, Bioremediation Processes, Biopolymers and Bioplastics, Pharmaceutical Biologics, Enzymes for Pulp & Paper, Antibiotic Production, Bio-Diesel, Biorefinery, Metabolic Engineering

Send your report to Lei Ye via email by the latest December 19 (Urkund's screening process will be used).

To get your report accepted: Length of the report should be around 3-4 A4 pages of text (< 2500 words with size 12 Times New Roman font). Tables and figures are not included in this measure. The state of the art section (introduction) should clearly describe the status of the field and the objectives of the report. In the end of the report, add a section to conclude the report ("future perspectives/conclusion section"). Demonstrate that you have understood the literature and that you clearly can address the present limitations and future possibilities. In addition, the report should in the text integrate at least one per reviewed international scientific paper (a brief introduction on how to find and read original scientific paper will be given on Nov. 6). This paper(s) must be correctly stated and be a clear part of the outcome of the report. The report should include 5-7 relevant references. Reports not fulfilling the basic requirements have to be corrected and returned in order to be accepted.