

Course Evaluation 2022

## **MOL320 Biophysical Methods for Molecular Biologists (10 ECTS)**

Hee-Chan Seo, Course-in-charge

MOL320 is a practical course that aims to provide students with both hands-on experience and theoretical knowledge on various biophysical methods on molecular biology systems. It is an elective course for the MSc students who major molecular biology. The covered methods in MOL320 are Fluorescence, Isothermal titration calorimetry (ITC), Surface plasmon resonance (SPR), and (high resolution) NMR. The first 3 topics are wet-lab-based and NMR is taught as workshop-like. Topic-specific lectures precede practical sessions.

A letter-based formal grade is given in MOL320, which is consisted of a formal written exam (70%) and an overall report evaluation (30%). The student enrolments for the last 3 years were 6 (2020), 10 (2021), and 4 (2022). For the evaluation period of 2020-2022, all completed with good grades both in report evaluation and in written exam.

### 1. Textbooks and required literatures

For syllabus, MOL320 has lab protocols and required reading materials (all provided). There is no textbook, but it has four supporting books (with specified chapters and pages). These are ‘Foundations of Molecular Structure Determination’ (by Simon Duckett, Bruce Gilbert, Martin Cockett, 2<sup>nd</sup> ed., 2015, Oxford University Press); ‘Introduction to Protein Science’ (by Arthur Lesk, 3<sup>rd</sup> ed., 2016 Oxford University Press), textbook of MOL310 (Structural molecular biology) until 2021; ‘Protein Structure and Function’ (by Gregory Petsko and Dagmar Ringe, 2009, Oxford University Press), textbook of MOL310 since 2022; ‘Wilson and Walker’s Principles and Techniques of Biochemistry and Molecular Biology, 8<sup>th</sup> Ed. (2018) by A. Hofmann and S. Clokie), textbook of MOL300 (Practical Molecular Biology).

### 2. Report submission and evaluation

Students submit 4 partial reports (after each module) and one full final report built on these 4 partial reports. These are all IMRaD-based and each report is reviewed and graded. It is expected that the final report would look like a primary research article.

### 3. Written exam

A 4 hour-long written exam is held as ‘digital school exam’. The exam questions were overall in nature of biochemistry and molecular biophysics. In addition, there was a question ‘Make a plan to publish the scientific findings. What/How to carry out the required experiments and how to arrange/analyse the results?’ Here the technical details were not on focus, rather the justification of experimental plans and presentation plan were sought.

#### 4. Impact of the pandemic lockdown

The Covid-19-caused pandemic in 2020 and 2021 did not have a significant impact on MOL320, except for the written exams of 2020 and 2021, which were held as 'school exam at home'. Despite of the restrictions, lab exercises were carried out as planned with some adjustments. (In 2020, all wet lab exercises had finished before the lockdown.)

#### 5. Discontinuation of MOL320

The breakdown of SPR, an essential instrument in the teaching of MOL320, relatively low student enrolment, and lack of teaching resources have brought a serious challenge on the continuation of MOL320. After thorough assessments, in February 2022 the Program Board has decided to discontinue the course. The spring semester of 2022 was the last semester for MOL320.