Course: 44408 **Molecular virology** 2+1+1 5 ECTS

Lecturer: Professor Dijana Škorić, PhD

Department of Biology

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Consults – book an appointment by e-mail!

2019/20-intro.

Asistant for a part of the laboratory excercises

Dr. sc. Lucija Nuskern Karaica

Syllabus:

Lectures

The replication of viruses from different taxonomic groups–studies of genome and replication mechanisms

Viral transcriptomes

Viral proteome - translation mechanisms and functions of proteins

Viruses and RNA silencing (*VIGS)*

Viruses as cloning vectors ?

Virus diversity – molecular mechanisms, virus evolution

Emerging viruses, virus epidemiology

Retroviruses – Molecular mechanisms of the pathogenesis, HIV – new insights, evolutionary origin

Immune responses to viral infection ?

Recombinant vaccines – new insights

Interferon, treatment of viral diseases

Chemotherapy of viral diseases

Molecular phylogeny of viruses

Seminars

Topics decided by a lecturer.

Practical part of the course:

1. Virus nucleic acid isolation methods (plant viruses as models).
2. Electrophoretic analysis of virus RNA(s)

Different methods for the detection of virus nucleic acids after gel electrophoresis

3. RT-LAMP

Electrophoretic analysis of amplicons.

4. SDS-PAGE of virus proteins

Analysis of the results.

Time of completion: 4 x 4 h, condensed.

Groups of 4-5 students. Wear a lab coat!

Grouping of students?

Schedual:

Practicals:

Tue 16-20 h (or 13-17h)

Wed 16-20 h (or 13-17h)

Fri 12-16 h

Seminars- students' tasks:

Prepare for the seminars!

Read papers given by the lecturer for each topic.

Choose a topic for your presentation, book the time with the teacher for the presentation, prepare ppt up to 15 min long.

Please, respect the time limit!

A presenter of a topic can find additional literature, send it to the teacher for consult 2 weeks before the presentation, at least.

Prepare for a 10 min discussion.

Send the presentation to the teacher at least 3 days in advance for corrections (dijana.skoric@biol.pmf.hr) . Pdf will be posted on the intranet as teaching material for everybody in the class.

Proposed schedual for lectures, tests, seminars?

Lectures – intensely done by the mid April,

Week - April 20-24, 2020 midterm exams (test practicum, when?)

Seminars starting date? (lecture + 1-2 seminars).

Final test (written), when?

Oral exam – elective.

Testing and schedual:

The first test – only laboratory excercise material

April date, place? – 15 points, 45 min

(multiple choice questions+short assay type answers), (5 multiple choice – 1 pint/each, 5 essay type questions, 2 points/each)

The second test (final) – 40 points, 60 min

mixed type (multiple choice 1pt/answer+ short assay type answers 2-4 points/answer), material from lectures and seminars, date set later.

Seminar – 30 points

Oral exam – 15 points, only if a student wants excellent mark.

Final exam – dates in ISVU, register!

Grading system

Requirements:

Completed laboratory excercise, completed seminar, regular class attendance.

Seminar is graded by the teacher taking into account the preparedness of the students for the topic, the scope of the presentation (it has to be in accordance with the title), the quality of the presentation and the preparedness for the discussion.

Grades:

100 – 90 points, excellent (5)

89 – 80, very good (4)

79 – 69, good (3)

68 – 60, satisfactory (2)

It is possible to take the final exam later. The dates are already available in ISVU.

If a student repeats the exam (after faling the written final test), the repeated exam is oral only.

It is important to register in ISVU again.

QUESTIONS?

Literature:

Lecture slides (pdf) and your notes, seminars, original and review scientific papers recommended and usually supplied by the lecturer.

Books:

Carter J. B. & Saunders V. A. Virology – Principles and Applications. 2007 (or 2013-2nd edition), Wiley.

Flint et al. Principles of Virology, 3rd edition, 2009, APS Press or 4th edition (2015).

Cann A. Principles of Molecular Virology. 4th edition, 2005, or later ones, Elsevier &Academic Press;

Strauss J. H. & Strauss E. G. Viruses and Human Disease. 2nd edition, 2008, Academic Press or more recent ones.

Review your notes of Bacteriology and Virology course, Cell Biology, Biochemistry (of nucleic acids and proteins).