

Plan of the course

From Pharmacogenomics to Personalized Medicine

Academic year **2016/2017**

I. COURSE AIMS

This seminar-based short course provides the students with the following:

- An overview of genomics approaches to biology and medicine, including major technological and methodological approaches, resources necessary to understand the specific topics as well as impact on the practice of medicine
- An understanding of enabling strategies in the (bidirectional) translation of genomics and biomedicine.
- An understanding of relevance (or lack of it) and of applications of pharmacogenomics on selected topics and problems in human therapeutics.
- An opportunity to develop critical views about the area as well as practice their skills in the analysis and presentation of research data.

Course coordinator: Dr. Ante L. Padjen, Pharmacology & Therapeutics, McGill University Dr.

II. COURSE STRUCTURE

Course hours:

Seminar: 12

Practicum: 13

Total hours: 25

Morning (except Day 1)

Tutors provide overview of selected topics

Discussion by Tutors & Students

Afternoon

Preparation of presentations

Student presentations

III. PLAN OF THE COURSE AND COURSE SCHEDULE

BLOCKS OF THE COURSE

Number of blocks: 1

Block number	Start	End
1.	3.7.2017	7.7.2017

BLOCKS OF THE COURSE SCHEME

Block 1

Date	Time	Group	Course hours type	Theme	Teaching staff
Monday 3.7.2017.	09:30-10:15; HIIM R 013		Seminar	Intro	Ante L. Padjen
	10:45-11:30; HIIM R 013		Seminar	Genomic variability / Study designs	Ante L. Padjen
	13:15-14:00; HIIM R 013		Practicum	DNA Methylation: Cancer I (CA)	Ante L. Padjen
	14:30-15:15; HIIM R 013		Practicum	DNA Methylation: Cancer II	Ante L. Padjen
	15:45-16:30; HIIM R 013		Practicum	How to prepare... Workshop	Ante L. Padjen
Tuesday 4.7.2017.	09:00-09:45; HIIM R 013		Seminar	DNA Methylation: CNS I (CNS)	Ante L. Padjen
	10:15-11:00; HIIM R 013		Seminar	DNA Methylation: CNS II	Ante L. Padjen
	11:15-12:00; HIIM R 013		Seminar	Discussion and Summary	Ante L. Padjen
	13:30-14:15; HIIM R 013		Practicum	Preparation of presentations	Ante L. Padjen
	15:30-16:15; HIIM R 013		Practicum	Preparation of presentations	Ante L. Padjen
Wednesday 5.7.2017.	09:00-09:45; HIIM R 013		Seminar	Drug metabolism (ME)	Ante L. Padjen
	10:15-11:00; HIIM R 013		Seminar	Adverse drug reactions (ADR)	Ante L. Padjen
	11:15-12:00; HIIM R 013		Seminar	Discussion and Summary	Ante L. Padjen
	13:30-14:15; HIIM R 013		Practicum	Student presentations	Ante L. Padjen
	14:15-15:00; HIIM R 013		Practicum	Student presentations	Ante L. Padjen
	15:00-15:45; HIIM R 013		Practicum	Student presentations	Ante L. Padjen
	15:45-16:30; HIIM R 013		Practicum	Student presentations	Ante L. Padjen
Thursday 6.7.2017.	09:00-09:45; HIIM R 013		Seminar	Ethics (ETH)	Ante L. Padjen
	10:15-11:00; HIIM R 013		Seminar	Informed consumer (DTC)	Ante L. Padjen
	11:15-12:00; HIIM R 013		Seminar	Discussion and Summary	Ante L. Padjen
	13:30-14:15; HIIM R 013		Seminar	Exploring PharmGKS	Ante L. Padjen
	15:00-15:45; HIIM R 013		Practicum	Student presentations	Ante L. Padjen
	16:15-17:00; HIIM R 013		Practicum	Student presentations	Ante L. Padjen
Friday 7.7.2017.	09:30-10:15; HIIM R 013		Practicum	Final review/ Evaluation	Ante L. Padjen

The course will take place at HIIM (Hrvatski institut za istraživanje mozga), Šalata 12

IV. EXAMINATIONS

By Tutors and peers

There will be no exam in this course. The final grade (pass-fail) is composed of the elements listed below.

- a) In class presentations, (two articles, each presentation 30% of the final grade, total 60%).
- b) Class participation (40%): discussion of presentations
- c) Students may be asked to evaluate all presentations

Student presentations (60%):

- All students are assigned articles to present during the course.

(The list and the articles in PDF are posted under **Documents** in the Forum of the course) at least 10 days before the start of the course.

- Each paper will be presented by two students (chosen randomly): one student will present Introduction, Objectives and Methods – Part 1, the other student will present Results and implications – Discussion, Part 2.

- Students are divided in 7 groups of two (1 - 7). Members of the group will work together on presentations of paper assigned to them.

(Please check the tab *Students* for the identity of students)

The papers are selected to complement the presentations by Tutors. The assumption is - and the course coordinators' expectation - that students will research the topics assigned to them beyond just the suggested article and become “experts” in the topic. (NB! Articles are available 10 days before the start).

It is not sufficient that the presenter simply reads the paper and presents the figures to the rest of the class. All students will have read the papers before class and thus simply regurgitating the paper's contents will have no real added value.

Instead, all presenters should use the content of the papers (e.g., figures, interpretations) as points of departure for more in-depth analysis and discussion.

Highly evaluated presentations, in addition to having clear and easy to follow slides, will include:

- a) A succinct review of the objectives/hypotheses of the work (**WHY?**)
- b) A description of what was actually done (methods slides should be presented only where essential for the understanding) and what was observed (i.e., main findings—show relevant figures) (**HOW?** more about **WHAT?**)

c) A discussion of the larger significance of the results according to the authors (i.e., what is the big picture?) (**WHERE** does this lead us...?)

Critical attitude of the presenter throughout the discussion will be particularly evident in

d) an evaluation of the major strengths and weaknesses of the work

e) alternative interpretations (where applicable) to those presented by the authors

f) an assessment of what could have been done differently and why

To accomplish these objectives, each day a session is reserved for preparation of presentations with the assistance of tutors.

The presenters are encouraged to do additional research in their preparation. This will include:

Reading other work referenced in the paper under discussion as well as other related papers in the literature.

Reading the supplementary material that is often included with the paper.

Duo of presenters should be prepared to cover all of these objectives in 30 min including discussion (i.e. 20 min for Part 1 and 2, and 10 min for discussion); therefore, they should aim to have no more than 10 slides each.

Presenters should arrive early on the day of their presentations to load their PowerPoint files on the web site and/or the notebook used for projection.

The **other students** in the class will have read the papers and will come prepared with at least one question for each paper (see 3.2). It is unlikely that there will be time to address all of the questions; therefore, it is the presenter's responsibility to keep the discussion moving along so that we can discuss as much as possible.

Class participation (40%):

In order to receive the signature and mark in the Index all students are expected to come to each session:

a) having read all of the assigned papers (review papers as well)

b) with one or more questions/comments prepared for each paper selected for presentation of the day

Read the papers with a critical eye and come prepared to ask questions or make arguments about what you perceive to be strengths and weaknesses of

the work under consideration.

(You do not need to prepare questions during the session you will present).

IMPORTANT:

Your questions/comments should be handed to the tutors **before the session** (therefore not written in class). Make sure to indicate your name on the page(s) and clearly indicate to which paper each question corresponds.

V./I. LIST OF LECTURERS AND TEACHING STAFF

V./II EXTERNAL ASSOCIATES:

1. Ante L. Padjen

V./III UNTENURED LECTURERS:

VI. LITERATURE

Class web site – online Forum

<http://www.cai.mcgill.ca>

All learning material (reviews and articles for presentation) will be available on the site before the start of the course. Students will receive the instruction by e-mail how to log in. The access and the use of the Forum will be demonstrated in the first session.

The students should upload their presentations to the appropriate site (Student Presentations 2013). The file should be in the following format

PGX2014_GroupX_studentname1_studentname2

(X = group number)