

**Course: Human Biomonitoring**

Lecturer: A. Alimonti; M. Horvat

Date: 06-07/06/2017; 19-23/06/2017

Classroom: 1-16; 1-17@IUSS

**Course schedule:**

Week	Date	Lecture hours From ____ To ____	Tutorial hours From ____ To ____	Subject	Tot h
	06/06/2017	3 p.m. - 6 p.m.	-	Human Biomonitoring (fundamentals and objectives)	4
	07/06/2017	3 p.m. - 6 a.m.	-	Biomarkers	4
	19/6/2017	10 a.m. – 1 p.m.	2 p.m. - 4 p.m.	Human biomonitoring (HBM) principles Study design – part 1	5
	20/6/2017	10 a.m. – 1 p.m.	2 p.m. - 4 p.m.	Study design part II	5
	21/6/2017	10 a.m. – 1 p.m.	2 p.m. - 4 p.m.	Study conduct	5
	22/6/2017	10 a.m. – 1 p.m.	2 p.m. - 4 p.m.	Data analysis and interpretation	5
	23/6/2017	11 a.m. – 1 p.m.	2 p.m. - 4 p.m.	Communication and implementation of the results Examples of human biomonitoring surveys	4

**Course Syllabus: A. Alimonti**

**B) Human Biomonitoring (HBM)**

- 1) Fundamentals, objectives
- 2) Reference Values
- 3) Exposure, internal dose, dose biologically active
- 4) Biomarkers
- 5) Biological matrices
- 6) HBM in Environment-Health studies
- 7) HBM in the exposomic frame

**Course Syllabus: M. Horvat**

- 1) Human biomonitoring principles
  - a) Fundamentals.
  - b) Aims of HBM
  - c) Terms and definitions
- 2) Study design
  - Part 1
    - a) Study hypothesis
    - b) Population selection
  - Part II
    - c) Toxicokinetics
    - d) Biomarker selection and validation

- e) Ethics
- f) Communication at the planning stage
- 3) Study conduct
  - a) Enrolment
  - b) Sample collection
  - c) Laboratory processing
  - d) Sample storage/Biobanking
- 4) Data analysis
  - a) Statistical analysis
  - b) Interpretation
- 5) Communication and implementation of the results
  - a) Communication to study participants/individual risk
  - b) Communication to clinical settings
  - c) Communication to media and population
  - d) Communication to policy makers and agencies
- 6) Examples of human biomonitoring surveys
  - a) National HBM studies, HBM4EU study, US NHANES, WHO POPs biomonitoring