

Summer Course „**Hydrobiology and inland environmental science in Poland**”
by the Faculty of Fisheries Sciences, Hokkaido University (**HU**), Japan
and the Faculty of Biology and Biotechnology,
the University of Warmia and Mazury in Olsztyn (**UWM**), Poland
28 August - 8 September 2017

**Coordinators: prof. Katsutoshi ARAI, prof. Takafumi FUJIMOTO from HU;
prof. Alicja BORON from UWM**

Each Group contains 4 students (2 from HU and 2 from UMW), one assistant professor and/or PhD student (UWM) - supervisors of Students-Participants and one professors (HU or UWM).

PT – practical training

Day	Activities	
	Group #1	Group #2
26.08 Saturday	Arrival (15:00) by LOT (stay one night at Warszawa, because of arrival is at 15:00)	
27.08 Sunday	Move to Olsztyn (Katsutoshi ARAI and HU students) Alicja BORON, Katsutoshi ARAI ; Orientation; 16:15-17:00 Welcome party/Ice breaking (coffee/tea with sweets)	
28. 08. (Monday) 9:00-9:20	Prof. Tadeusz KAMINSKI , Dean of the Faculty of Biology and Biotechnology Welcome address Start of the summer course by Katsutoshi ARAI, Takafumi FUJIMOTO - coordinators from HU and Alicja BORON - coordinator from UWM	
9:30-11:00 (2hrs)	Lecture by prof. A. Boron " Hydrobiology as the science of life processes in water - field of research interests and inland water bodies in Poland "	
11:00-11:45 (1hrs)	Two Mini-projects – One for each group of students – short introduction into the topics and organization of the Summer Course by Katsutoshi ARAI, Alicja BORON	
	MP#1 (21 hrs.) by Dorota Juchno, PhD " Gonad histology of the Prussian carp <i>Carassius gibelio</i> (Teleostei, Cyprinidae) males from bisexual population "	MP#2 (21 hrs.) by Aleksandra Szabelska, PhD student and Lech Kirtiklis, PhD " The length and chromosomal mapping of 5S rDNA sequence of <i>Carassius gibelio</i> diploids and triploids "
12:00-13:00	Lunch	
13:30-15:00 (2hrs)	Tour (c. 30') to the Polish Academy of Sciences in Olsztyn (PAN)	
15:00-15:45 (1hrs)	Lecture by prof. Andrzej Ciereszko, PAN " Cryopreservation of the fish sperm " PT: Scientific groups of Gamete and Embryo Biology – visit in PAN	
29. 08. (Tuesday) 8:30-10:00 (2hrs)	Lecture by prof. Stanisław Czachorowski " Animals living in Polish inland water bodies; characteristic of the most typical taxa, adaptations and limitations "	
10:15-13:15 (4hrs)	PT by prof. Stanisław Czachorowski " Identification of main typical invertebrates taxa inhabiting Polish lakes and rivers " (field trip to lake, river, collecting samples)	
13:15-14:15	Lunch	
14:15-15:45 (2hrs)	MP#1 (21 hrs.) by Dorota Juchno, PhD " Gonad histology of the Prussian carp <i>Carassius gibelio</i> (Teleostei, Cyprinidae) males from bisexual population "	MP#2 (21 hrs.) by Aleksandra Szabelska, PhD student and Lech Kirtiklis, PhD " The length and chromosomal mapping of 5S rDNA sequence of <i>Carassius gibelio</i> diploids and triploids "

30. 08. (Wednesday) 8:30-10:00 (2hrs)	Lecture by Lech Kirtiklis, PhD " Taxonomical identification - a review of the genetic methods "	
10:00-12:15 (3hrs)	PT by Lech Kirtiklis, PhD " Molecular techniques in freshwater animals' taxonomy "	
12:15-13:15	Lunch	
13:30-15:45(3hrs)	MP#1 (21 hrs.) by Dorota Juchno, PhD " Gonad histology of the Prussian carp <i>Carassius gibelio</i> (Teleostei, Cyprinidae) males from bisexual population "	MP#2 (21 hrs.) by Aleksandra Szabelska, PhD student and Lech Kirtiklis, PhD " The length and chromosomal mapping of 5S rDNA sequence of <i>Carassius gibelio</i> diploids and triploids "
31. 08. (Thursday) 8:30-10:00 (2hrs)	Lecture by prof. Katsutoshi ARAI, HU " Clonal loach in nature - Its reproduction and origin "	
10:30-12:00 (2hrs)	Lecture by prof. Katsutoshi ARAI, HU " Polyploidy and aneuploidy in wild pond loach "	
12:00-13:00	Lunch	
13:00-16:00 (4hrs)	MP#1 (21 hrs.) by Dorota Juchno, PhD " Gonad histology of the Prussian carp <i>Carassius gibelio</i> (Teleostei, Cyprinidae) males from bisexual population "	MP#2 (21 hrs.) by Aleksandra Szabelska, PhD student and Lech Kirtiklis, PhD " The length and chromosomal mapping of 5S rDNA sequence of <i>Carassius gibelio</i> diploids and triploids "
01.09. (Friday)	Students; Professors; Trip to Krakow and Wieliczka Salt Mine; to know the culture and tradition of Poland (2 days plus one night)	
02. 09. (Saturday)		
03.09.2017 Sunday	UWM and HU students - tour of Olsztyn	
04. 09 (Monday) 8:30-10:00 (2hrs)	Lecture by prof. Takafumi Fujimoto, HU " Chromosome set manipulation in fish "	
10:30-12:00 (2hrs)	Lecture by prof. Takafumi Fujimoto, HU " Embryo manipulation as a developmental engineering in fish "	
12:00-13:00	lunch	
13:00-16:00 (4hrs)	MP#1 (21 hrs.) by Dorota Juchno, PhD " Gonad histology of the Prussian carp <i>Carassius gibelio</i> (Teleostei, Cyprinidae) males from bisexual population "	MP#2 (21 hrs.) by Aleksandra Szabelska, PhD student and Lech Kirtiklis, PhD " The length and chromosomal mapping of 5S rDNA sequence of <i>Carassius gibelio</i> diploids and triploids "
05. 09. (Tuesday) 8:30-10:00 (2hrs)	Lecture by prof. Dorota Fopp-Bayat " Application of genetic analysis in aquaculture and conservation of sturgeons "	
12:30-13:00	lunch	
13:00-16:00 (4hrs)	PT: by prof. Dorota Fopp-Bayat " Analysis of the basic parameters of water quality "	
06. 09. (Wednesday) (whole day trip)	(4 hrs.) plus 5 – 6 hrs. round-trip by train/bus: " Production process of salmonid fish " IFI, the Department of Salmonid Fish Farming, Rutki, Gdansk	
07. 09. (Thursday) 9:00-10:30 (2hrs)	Lecture by prof. A. Boron " Freshwater fishes of Poland with data on farm species "	
10:30-12:00 (2hrs)	MP#1 (21 hrs.) by Dorota Juchno, PhD " Gonad histology of the Prussian carp <i>Carassius gibelio</i> (Teleostei, Cyprinidae) males from bisexual population "	MP#2 (21 hrs.) by Aleksandra Szabelska, PhD student and Lech Kirtiklis, PhD " The length and chromosomal mapping of 5S rDNA sequence of <i>Carassius gibelio</i> diploids and triploids "

12:00-13:00	lunch	
13:00-15:15 (3hrs)	Preparation of the final presentation - the results of Mini-Project (#1); D. Juchno, PhD	Preparation of the final presentation - the results of Mini-Project (#2); A. Szabelska, PhD student, L. Kirtiklis, PhD
08. 09. (Friday) 8:30-10:00 (2hrs)	Preparation of the final presentation - the results of Mini-Project (#1); D. Juchno, PhD	Preparation of the final presentation - the results of Mini-Project (#2); A. Szabelska, PhD student, L. Kirtiklis, PhD
10:00-12:15 (3hrs)	Seminar - Final presentation and discussing of the results of Mini-Projects by prof. Alicja BORON and prof. Takafumi FUJIMOTO;	
12:15-13:15	Lunch	
17:00-∞	Official Dinner, summarizing of the Summer Course, closing remarks	
09.09. (Saturday) 10.09. (Sunday)	Move to Warszawa, stay one night (09.09). Leave to Japan (10.09)	

Running the summer course and excursion for 10 days (excluding weekend) with 4 to 8 hours of lectures/training courses/seminars in each day

1. In total during the Summer Course will be given 81 hours of different activities as following:

- a) 20 hours (20 x 45') of lectures,
- b) 16 hours of practical training,
- c) 42 hours of practical training in scientific research realizing as two Mini-Projects,
- d) 3 hours of seminars.

2. Each Student-Participant will get 2/4 ECTS points (in UWM) = 2 credits (in HU) and take part in 60 hours of different activities as following:

- a) 20 hours (20 x 45') of lectures,
- b) 16 hours of practical training,
- c) 21 hours of practical training in scientific research realizing as two Mini-Projects (16 hrs. by Mini-project + 5 hrs. by Preparation of the final presentation),
- d) 3 hours of seminars.

Total hours of lectures, training courses and seminars for each of Students and also in each working day of the Summer Course

Day	lectures	Mini-Projects realization	PT (practical training)	seminars, presentations/ preparation	Total hours
28. 08. (Monday)	4	1	1	-	6
29. 08. (Tuesday)	2	2	4	-	8
30. 08. (Wednesday)	2	3	3	-	8
31. 08. (Thursday)	4	4	-	-	8
1.09. (Friday)	-	-	-	-	-
4. 09 (Monday)	4	4	-	-	8
5. 09. (Tuesday)	2	-	4	-	6
6. 09. (Wednesday)	-	-	4	-	4
7. 09. (Thursday)	2	2	-	3	7
8.09. (Friday)	-	-	-	5	5
Total 60	20	16	16	8	60