**International Summer Courses on Integrated Marine Biology and Ecology**

**Hokkaido University**

**Date**: Course I: July 15 – 20, 2019

Course II: July 29 – August 3, 2019

Course III: August 5 – 10, 2019

**Venues**: Course I: Muroran Marine Station, Hokkaido University

Course II and III: Akkehsi Marine Station, Hokkaido University

**Organizer**: Field Science Center for Northern Biosphere, Hokkaido University

**Organizing committee**: Masahiro Nakaoka\*, Chikako Nagasato\*\*, Tomonori Isada\*, Kensuke Ichihara\*\*, Ippei Sizuki\* (\*Akkeshi Marine Station, \*\*Muroran Marine Station)

**Objectives**: Marine biodiversity and ecosystem functions are declining rapidly worldwide due to multiple stresses from human activities, such as overexploitation, eutrophication, coastal development, invasive species and global climate changes. To understand the responses of marine organisms and ecosystems toward better management of ocean and coastal areas, it is requited to gain integrated knowledge of the responses of marine organisms to these stresses at various levels, i.e., molecular, cell, organisms, population, community and ecosystems. Our summer courses provide unique opportunities for international graduate students with sufficient basic knowledge of biology to learn the structures and dynamics of marine organisms at the multiple levels. Participants will learn about various topics: biodiversity of algal community in Hokkaido, cellular response of marine algae against environmental changes, community structure of rocky intertidal organisms across environmental gradient and variation in plant-animal interactions in seagrass bed relation to environmental changes. Based on these subjects, the programs aim to encourage the participants to develop future research proposal that includes international perspectives.

**Keyword**: Marine algae and seagrass, species diversity, cell structure and cellular response, community structure, plant-animal interactions, statistical data analyses, cold current system

**Participants**: up to 10 international graduate students for each course

**Cost**: No registration fee is required. The participants will have to pay costs for travel, accommodation and daily requirement by themselves unless otherwise indicated.

**Program structure**:

**Course I**: July 15 – 20: A series of lectures and practices will be held at Muroran Marine Station, especially focusing on micro-scale biology of algae

**Course II**: July 29 – August 3: A series of lectures and practices will be held at Akkeshi Marine Station, especially focusing on ecology of seagrass and seaweed communities

**Course III**: August 5 – 10: A series of lectures and practices will be held at Akkeshi Marine Station, especially focusing on phytoplankton ecology and remote sensing analysis of pelagic ecosystems

**Application**: Application forms need to be submitted to the contact persons (see below) no later than **June 5, 2019**. Participants will be selected based on information provided in the application.

**Contact**: Prof. Masahiro Nakaoka (nakaoka@fsc.hokudai.ac.jp),

Dr. Chikako Nagasato (nagasato@fsc.hokudai.ac.jp)

**Related URLs**:

Hokkaido University “Marine Biology and Ecology in Cold-current Ecosystems” Program

http://www.fsc.hokudai.ac.jp/KANRYU/english/

Muroran Marine Station, Hokkaido University, http://www.fsc.hokudai.ac.jp/muroran/english/

Akkeshi Marine Station, Hokkaido University, http://www.fsc.hokudai.ac.jp/akkeshi/en/index.html