המרכז האקדמי רופין
Ruppin Academic Center

Course: Introduction in RAS technology

Credits: 2

Scope: 2 weekly hours

Semester: 2, Year: 3

Course number: 70-508-0

Lecturer: Dr. John Taylor

john.taylor@aquamaof.com

Course coordinator: Dr. Joseph Aizen

aizen@ruppin.ac.il, meeting hours: by appointment or via Zoom.

1. **Time and Place of the course:**
   Thursday, 10:15-12:00, location (building number and classroom)

2. **Prerequisites: N/A**

3. **Course type: Regular lecture**

4. **Course Topics: Aquaculture systems (RAS) were originally developed to grow freshwater species and produce fingerlings for marine systems. However, RAS technology has increasingly been used for the continuous cultivation of a wide variety of fish (including marine species), crustaceans and mollusks. Today the RAS systems are operated regardless of the target temperature and salinity, and the annual production capacity of some industrial systems can now amount to thousands of tons.**
   In this course, leading experts in RAS technology will present the principles and concepts in RAS and discuss the operation of conventional and "eco-approach" based RAS.

Lecture	Topic	Lecturer	Date
1	Introduction to Salmon industry	John Taylor	2-5-24
2	Why RAS	John Taylor	9-5-24
3	What is RAS - Technology Part 1– Main components & current challenges	John Taylor	16-5-24
4	What is RAS - Technology Part 2– Main components & current challenges	John Taylor	23-5-24
5	Biosecurity	Ofer Ashulin	30-5-24
6	Technology – DNS	Micha Eschar	6-6-24
7	Technology – Disinfection	Micha Eschar	13-6-24
8	Operational	Guy Alon	20-6-24
9	Poland R&D	John Taylor	4-7-24
10	Shrimp RAS and other species	Eran Hadas	11-7-24
11	Israel RAS current situation	Industry	18-7-24

5. **Learning Outcomes:**

Participants will gain an understanding of the principles of recirculation technology, the types of RAS and their specificities, their capabilities and limitations, the benefits, and necessary conditions for optimal use/operation of RAS, and the ongoing research that can increase the efficiency and use of RAS.

6. **Learning Mode: The course will be presentation based including films that will explain the detailed processes that are discussed in each lecture. Lecture will include Aspects of recycling technology relevant to RAS research, design, management, operation, and evaluation.**

7. **Course Requirements:**

Assignment	Assignment in percentage	Comments
Exam	100%	Exam

8. **Bibliography:**

No.	Bibliography item	comments
1	Michael Timmons & Brian Vinci: The Yellow Book of Recirculating Aquaculture, 2022, 5th Edition. ISBN 978-0-9712646-9-4	

Updated articles from recent years will be uploaded to the course website per presentation. An extra recommended reading will be also posted in the course website for extra reading.

9. **Course conduct culture:**

The students and the lecturer are bound by mutual respect.

The culture of the learning process: attending meeting schedules and participating and commenting on the content being studied.