

## LIGHT AND PHOTOSYNTHESIS IN THE SEA, SPRING 2010

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Instructor: Dr. Michael Durako BIO 495 009  
 Class Times: Thur. 12:00-12:50am Room: DO131  
 Telephone: 962-2373/2374    Office: CMS2337/FR1002A    Office Hours: Tue & Thur. 8:30-9:30 & 11-12:00

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WEEK/DATE	ACTIVITY	SPEAKER	
1	1/07	Introduction	Dr. Durako
2	1/14	Photosynthesis vs Light	Dr. Durako
3	1/21	Utilization of Light in Aquatic Systems	Dr. Durako
4	1/28*	Carbon Limitation	Dr. Durako
5	2/04	Assessment Exam	Students
6	2/11	Presentation 1	Students
7	2/18	Presentation 1	Students
8	2/25**	Presentation 1	Students
9	3/04	Presentation 1	Students
10	3/11	<i>Spring Vacation</i>	Students
11	3/18	Presentation 2	Students
12	3/25	Presentation 2	Students
13	4/01	Presentation 2	Students
14	4/08	Presentation 2	Students
15	4/15	Presentation 2	Students
16	4/22	Presentation 2	Students

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\*Date for submission of Presentation 1 topic.

\*\*Date for submission of Presentation 2 topic

**Grades:** Each student will present two seminars (1st:10-12 min 40%; 2nd:15-18 min 60%). The seminars will be graded on organization and information content, not on speaking ability. Students should use handouts and PowerPoint for their presentations. Each student will provide handouts for the rest of class (handouts will be copied by the instructor if received 1 wk prior to talk). The handouts (3-4 pages max) should include an outline of major points that the presenter wishes to make and pertinent data, figures, and tables. The handouts must include a bibliography with at least 3 primary references from the peer-reviewed scientific literature. The quality of the handouts will constitute part of the grade. Attendance is mandatory! Each unexcused absence will result in a lowering of your grade by 5 points.

**A:90-100    B:80-89    C:70-79    D:60-69    F:0-59**

### Potential Topics:

#### Measurement of Light in Aquatic Systems

2 $\pi$  versus 4 $\pi$  sensors - Theoretical considerations

Radiance vs Irradiance

IOPs vs AOPs

PAR versus PUR

Extinction vs Absorption Coefficients - What do they tell us?

#### Causes of Light Attenuation in Aquatic Systems - TSS, CDOM, Water

#### Photosynthesis versus Irradiance

Measurement Techniques

Photoinhibition vs Down regulation

Spatial and Temporal Changes

#### Pigments and Light Capture

#### The Role of Carbon Limitation in Photosynthesis in the sea