

UNIVERSITY OF CALGARY  
FACULTY OF SCIENCE  
DEPARTMENT OF CHEMISTRY  
COURSE SYLLABUS  
WINTER 2017

## 1. Course: CHEMISTRY 599 L01/689 L02, Introduction to Photochemistry

LEC	DAYS	TIME	ROOM	INSTRUCTOR	OFFICE	EMAIL	OFFICE HOURS
L01	TuTh	9:30-10:45	ST 129	Belinda Heyne	SB419	<a href="mailto:bjmheyne@ucalgary.ca">bjmheyne@ucalgary.ca</a>	TBA
L02	TuTh	9:30-10:45	ST 129	Belinda Heyne	SB419	<a href="mailto:bjmheyne@ucalgary.ca">bjmheyne@ucalgary.ca</a>	TBA

D2L course name: CHEM 599.L01 & CHEM 689.L02 - (WINTER 2017) –Selected Topics in Chemistry

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## 2. Course Description: Introduction to modern organic photochemistry.

3. Recommended/ Required Textbook(s): Not required. However, students can use as reference book: "Principles of Molecular Photochemistry" by N.J Turro, V. Ramamurthy and J.C. Scaiano, University Science Book Edition. This book is available at the library of the University of Calgary.

## 4. Topics Covered and Suggested Readings:

1. Paradigm of Photochemistry
2. The electromagnetic spectrum
3. Jablonsky diagram
4. Photophysics of n to pi\* transitions
5. Photophysics of pi to pi\* transitions
6. Rule for intersystem crossing
7. Photochemistry for n to pi\* transitions
8. Photochemistry for pi to pi\* transition
9. Exciplex formation and fluorescence
10. Electron transfer, reaction rates and Marcus inverted region
11. Energy transfer and heavy atom effect
12. Singlet Oxygen
13. Time resolved Techniques, such as laser flash photolysis and its applications.

Department Approval: Approved by Department Head

Date: December 21, 2016