Course description

Department/Unit /	KCH / OSPS1			**Academic Year**	2016/2017
Title	Seminar - Optical Spectroscopy I			**Type of completion**	Pre-Exam Credit
Accredited/Credits	Yes, 2 Cred.			**Type of completion**	Oral
Number of hours	Seminář 1 [Hours/Week]				
Occ/max	Status A	Status B	Status C	**Course credit prior to**	NO
Summer semester	0 / -	0 / -	0 / -	**Counted into average**	NO
Winter semester	0 / 0	10 / -	0 / 0	**Min. (B+C) students**	not determined
Timetable	Yes			**Repeated registration**	NO
Language of instruction	Czech			**Semester taught**	Winter semester
Substituted course	KFY/OSPS1			**Počet dnů praxe**	0
Preclusive courses	N/A				
Prerequisite	N/A				
Informally recommended courses	N/A				
Courses depending on this Course	N/A				

Course objectives:

Organické chromofory a luminofory. Aplikace absorpční a fluorescenční fluorescence - identifikace a kvantifikace látek, kinetika oxidačně-redukčních a biochemických reakcí. Příprava a prezentace seminárního referátu na zadané téma.

Requirements on student

Evaluation of the subject as well as the exam grading is made according to the articles No 31 - 33 in the Regulations on Study and Examinations University of Ostrava

Content

The course will be realized as one-day "miniconference". Students will prepare and present lecture on a chosen topic and will respond to questions of the participants of "miniconference".

1. Specification of seminar works.
2. Organic chromophores.
3. Luminophores.
4. Determination of kinetics of oxidation-reduction reactions.
5. Determination of kinetics of enzymatic reactions.
6. Determination of inorganic matter - cations and anions.
7. Determination of biochemical reactions.
8. Application of laser spectroscopy.
9. Femtosecond spectroscopy.
10. Application of fluorescence spectroscopy. Identification and quantification of matter.
11. Application of absorption spectroscopy in medicine.
12. Application of absorption spectroscopy for determination of water quality.
13. Application of absorption spectroscopy for determination of soil quality
14. Other topics will be specified according to actual number of students.

Prerequisites - other information about course preconditions

Competences acquired

Získává poznatky o organických chromoforech a luminoforech. Osvojuje si aplikace absorpční a fluorescenční fluorescence -

identifikace a kvantifikaci látek, kinetiku oxidačně-redukčních a biochemických reakcí.

Studijní opory

Guarantors and lecturers

- **Guarantors:** doc. RNDr. Jiří Kalina, Ph.D.
- **Seminar lecturer:** doc. RNDr. Jiří Kalina, Ph.D.

Literature

- **Basic:** http://cs.wikipedia.org/wiki/Kategorie:Elektromagnetick%C3%A9_z%C3%A1%C5%99en%C3%AD -
  http://cs.wikipedia.org/wiki/Kategorie:Elektromagnetick%C3%A9_z%C3%A1%C5%99en%C3%AD
- **Recommended:** *Další aktuální knižní a časopisecká literatura*.
- **Recommended:** *Guide for Spectroscopy. Edison : Jobin Yvon/SPEX,*. NJ, USA, 1994.
- **Recommended:** HARRIS, D.A. *Light Spectroscopy.*. Oxford: BIOS Scientific Publishers, 1996. ISBN 1 872748 34 1.

Time requirements

Activities	Time requirements for activity [h]
Being present in classes	13
Continuous tasks completion (incl. correspondence tasks)	20
Scientific text studying in a foreign language	15
Consultation of work with the teacher/tutor (incl. electronic)	10
Total:	**58**

assessment methods

professional knowledge

Student´s portfolio analysis

Written examination

teaching methods

professional knowledge

Dialogic (discussion, dialogue, brainstorming)

Monologic (explanation, lecture, briefing)

Projection (static, dynamic)

Working with text (coursebook, book)

learning outcomes

professional knowledge - knowledge resulting from the course:

Získává poznatky o organických chromoforech a luminoforech. Osvojuje si aplikace absorpční a fluorescenční fluorescence - identifikace a kvantifikaci látek, kinetiku oxidačně-redukčních a biochemických reakcí.

Course is included in study programmes:

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Chemistry	Postgraduate Master	Full-time	Analytical Chemistry of Solid Phase	1	2013	2016	Povinně volitelné předměty	B	1	ZS