



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Biologija membran
Subject Title:	Membrane Biology

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Biologija in ekologija z naravovarstvom / Biology and ecology with nature conservation	Biologija / Biology	2	3

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
45	30				135	7

Nosilec predmeta / Lecturer:

Jeziki / Predavanja / Lecture:
Languages: Vaje / Tutorial:

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Prerequisites:

Vsebina:

- Sestava membran pri različnih skupinah organizmov in prilagoditve membran na ekstremne razmere
- Membranski transport majhnih molekul
- Električne lastnosti membran
- Znotrajcelični membranski kompartmenti
- Transport membranskih mešičkov
- Povezave med celičnimi membranami
- Z membranami povezano celično signaliziranje
- Umetne membrane in njihova uporaba

Contents (Syllabus outline):

- Membrane composition in different groups of organisms and adaptations to extreme conditions
- Membrane transport
- Electrical properties of the membranes
- Intracellular membrane compartments
- Transport of membrane vesicles
- Interactions between cell membranes
- Membrane-associated cell signaling
- Artificial membranes and their applications

Temeljni študijski viri / Textbooks:

- Alberts, B., A. Johnson, J. Lewis, M. Raff, K. Roberts, P. Walter, 2002: Molecular biology of the cell, 4th Edition, Garland Science, New York.
- Cooper, G. M., R. F. Hausman, 2004: The Cell: a molecular approach (3rd Ed.). ASM Press, Washington, D. C.
- Lodish, H., A. Berk, P. Matsudaira, C. A. Kaiser, M. Krieger, M. P. Scott, S. L. Zipursky, J. Darnell, 2004: Molecular Cell Biology (5th Ed.). W. H. Freeman and Company, New York.

Cilji:

- Študent se spozna s temeljnimi lastnostmi biotskih membran in z njihovo vlogo pri delovanju enoceličnih in večceličnih organizmov

Objectives:

- Student should understand basic properties of biotic membranes and their role in functioning of unicellular and multicellular organisms

Predvideni študijski rezultati:

- Razumevanje biologije membran kot enega ključnih dejavnikov pri pravilnem delovanju celice

Prenesljive/ključne spretnosti in drugi atributi:

- Vključevanje pridobljenega znanja v poglobljeno razumevanje celice

Intended learning outcomes:

- To understand membrane biology as one of the main factors in proper cell functioning

Transferable/Key Skills and other attributes:

- Use of knowledge in detailed understanding of the cell

Metode poučevanja in učenja:

- Predavanja
- Seminar

Learning and teaching methods:

- Lectures
- Seminar

Načini ocenjevanja:

- Pisni izpit
- Seminarska naloga

Delež (v %) /
Weight (in %)

50
50

Assessment:

- Written exam
- Seminar essay

Materialni pogoji za izvedbo predmeta :

- Predavalnica

Material conditions for subject realization

- Lecture hall

Obveznosti študentov:

(pisni, ustni izpit, naloge, projekti)

- Pisni izpit
- Seminarska naloga

Students' commitments:

(written, oral examination, coursework, projects):

- Written exam
- Seminar essay