University of Gdańsk

Subject card

Subject name and code	Marine Living Resources - lecture, PG_00204938		
Field of study	Oceanography		
Date of commencement of studies	October 2027	Academic year of realisation of subject	2028/2029
Education level	Master's studies	Subject group	Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	2.0
Learning profile	academic	Assessment form	exam
Conducting unit	Department of Marine Ecology -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Mariusz Sapota, prof. UG	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	0.0	30

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	30	2.0	18.0	50

Subject objectives

Presentation of issues related to the exploitation of marine biological resources, its history and prospects

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANMU2-W06] knows and identifies potential threats to the marine environment on a local and global scale resulting from strong anthropopressure, predicts their effects on various time and space scales	knows the importance of marine living resources and identifies potential threats to the marine environment resulting from the exploitation of these resources, on a local (Baltic) and global scale	[SW4] test/exam - oral or written

Subject contents

- The concept of marine living resources and their distinguishing features. Comparison of mariculture and direct exploitation of natural resources. Methods of breeding marine organisms with particular emphasis on bivalve molluscs and crustaceans.
- Fishing techniques for marine organisms and fishing gear used.
- Methods of studying the structure, determining the size of exploited populations and determining the allowable amount of catches.
- Legal and economic basis for the exploitation of marine living resources. Principles of administration of the exploitation of marine biological resources.
- Products obtained from marine organisms. Genetically modified products and transgenic organisms. Biofuels produced from marine organisms as an alternative source of energy.
- Use of marine biological resources for non-food purposes. The cultural significance of invertebrates as tools of everyday use.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	51.0%	100.0%

Recommended reading	Basic literature	Chrzan F., 1979, Przyrodnicze podstawy rybołówstwa morskiego, Wyd. Uniwersytetu Gdańskiego, Gdańsk Costa-Pierce B.A., 2002. Ecological Aquaculture. Blackwell Science, Oxford, UK. FAO World Agricultural Information Centre. Yearbook Statistics Fishery Commodities FAO Rome Global Aquaculture Production Fishery Statistical Collections,2011. FAO, Rome. Gutkowski B., Witoński M., 2009. Polskie Sieci Morskie - infrastruktura przesyłowa niezbędna dla rozwoju farm wiatrowych w polskich obszarach morskich. Przyszłe wykorzystanie polskiej przestrzeni morskiej dla celów gospodarczych i ekologicznych. Instytut Morski w Gdańsku. Gdańsk. Harris R. (ed.), 2005. ICES Zooplankton Methodology Manual. Elsevier Academic Press. Hoff F.H., Snell T.W., 1987. Plankton culture manual. Florida Aqua Farms Inc. Huner, J. V., Brown E. E. (eds.), 1985. Crustacean and Mollusk Aquaculture in the United States. AVI Publishing Co., Westport, Connecticut. Imai T., 1980. Aquaculture In Shallow Seas: Progress In Shallow Sea Culture, A. A. Balkema/ Rotterdam. Klekowski R. Z., Fischer Z. (red.), 1993. Bioenergetyka ekologiczna zwierząt zmiennocieplnych, PAN, Wydział II Nauk Biolo-gicznych, Warszawa. Lavens P., Sorgeloos P., 1996. Manual of the production and use of live food for aquaculture. FAO Fisheries Technical Paper No 361. Lee C.S, OBryen P., Marcus N., 2005. Copepoda In Aquaculture. Wiley-Blackwell. Moksness E., Kjorsvik E., Olsen Y., 2004. Culture of Cold-water Marine Fish. Blackwell. Muzzarelli R.A.A., Peter M.G., 1997. Chitin Handbook. Atec Edizioni, Grottammare, Italy. Omori M., Ikeda T., 1992. Methods in Marine Plankton Ecology. Krieger Publ. Comp. Malabar, Floryda Sikorski Z.E., 1992, Morskie Surowce Żywnościowe, Wyd. NT, Warszawa. Stickney R.R. (ed.), 2000. Encyclopedia of Aquaculture. John Wiley&Sons, Inc. Świniarski J, Cetinic P, 1993. Technologia połowu organizmów morskich, Wydawnictwo Morskie Gdańsk Winberg G.G., 1971. Methods for the estimation of production of aquatic animals. Academic Press, London, U.K. Costa-Pierce B.A., 2002. Ecological Aquaculture. Blackwell Science, Oxford, UK. Harden Jones F.R. 1970 Fish Migration, Edward Arnold (Publishers) Ltd. London History of Aquaculture, 2009. FAO, United Nations. Wojnikanis-Mirski W.N., 1954. Narzędzia połowu rybołówstwa przemysłowego, Wydawnictwa Komunikacyjne, Warszawa The Encyclopedia of Marine Resources 1969 Frank E. Firth Reinhold Company London Świniarski J, Kepa J., 1975. Teoria łowności I projektowanie narzędzi połowu, PWN Warszawa
	Supplementary literature	Andersen, R.A. (ed.). 2005. Algal Culturing Techniques. Elsevier Academic Press, London, 578 str. Beiras R., Camacho A.P., Albentosa M., 1994. Comparison of the scope for growth with the growth performance of Ostrea edulis seed reared at different food concentrations in an open-flow system. Mar. Biol. 119, 227-233. Davis F.M., 1958. An account of the fishing gear of England and Wales, HMSO, London Grant J., Cranford P.J., 1991. Carbon and nitrogen scope for growth as function of diet in the sea scalop Placopecten magellanicus. J. Mar. Biol. Assoc. U.K. 71, 437-450. Guerin J.L., Stickle W.B., 1992. Effects of salinity on the tolerance and bioenergetics of juvenile blue crabs (Callinectes sapidus) from waters of different environmental salinities. Mar. Biol. 114, 391396. Pusceddu A., Fraschetti S., Mirto S., holmer M., Danovaro R., 2007. Effects of intensive mariculture on sediment biochemistry. Ecological Applications 17(5), 13661378. Richmond A., 2004. Microalgal Culture Biotechnology and Applied Phycology. Blackwell Science. Riisgård H.U., Randlow A., 1981. Energy budgets, growth and filtration rates in Mytilus edulis at different algal concentrations. Mar. Biol. 61, 227-234. Rutkowicz S. 1982. Encyklopedia ryb morskich, Wydawnictwo Morskie Gdańsk Saoud P.I., Anderson G., 2004. Using scope-for-growth estimates to compare the suitability of feeds used in shrimp aquaculture. Journal of the World Aquaculture Society 35 (4), 523-528.

	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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