

**Subject card**

Subject name and code	, PG_00120350						
Field of study	Oceanography						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2025/2026		
Education level	postgraduate studies	Subject group			Obligatory subject group in the field of study Optional subject group		
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			1.0		
Learning profile	academic	Assessment form					
Conducting unit	Pracownia Ichtiologii -> Katedra Ekologii Morza -> Faculty of Oceanography and Geography						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Mariusz Sapota				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	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	15		5.0		5.0	25
Subject objectives	Presentation of issues related to the exploitation of marine biological resources, 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 and identifies potential threats resulting from the exploitation of marine biological resources, especially in coastal areas of seas and oceans, knows the benefits of the possibility of using marine biological resources		[SW5] implementation of a problem task		
Subject contents	Practical application of marine fishing gear for estimating marine biological resources						
	Application of mathematical and statistical models to calculate the growth rate of marine organisms						
	Calculation of the allowable catch volume (maximum sustainable catch)						
Prerequisites and co-requisites	Basic information in zoology, botany and ecology						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	determining the final grade on the basis of partial grades received during the semester		51.0%		100.0%		

Recommended reading	Basic literature	<p>Chrzan F., 1979, Przyrodnicze podstawy rybołówstwa morskiego, Wyd. I Costa</p> <p>Pierce B.A., 2002. Ecological Aquaculture. Blackwell Science, Oxford, U</p> <p>Encyklopedia Geograficzna Świata tom VII Oceany i Morza, OPRES Kra FAO</p> <p>World Agricultural Information Centre. Yearbook Statistics Fishery Comn Global Aquaculture Production Fishery Statistical Collections, 2011. FAO, Rome.</p> <p>Gutkowski B., Witoński M., 2009. Polskie Sieci Morskie - infrastruktura przesyłowa niezbędna dla rozwoju farm wiatrowych w pols morskich. Przyszłe wykorzystanie polskiej przestrzeni morskiej dla celów</p> <p>Harris R. (ed.), 2005. ICES Zooplankton Methodology Manual. Elsevier /</p> <p>Hoff F.H., Snell T.W., 1987. Plankton culture manual. Florida Aqua Farm</p> <p>Huner, J. V., Brown E. E. (eds.), 1985. Crustacean and Mollusk Aquacul</p> <p>Imai T., 1980. Aquaculture In Shallow Seas: Progress In Shallow Sea Cu</p> <p>Klekowski R. Z., Fischer Z. (red.), 1993. Bioenergetyka ekologiczna zwie gicznych, Warszawa.</p> <p>Lavens P., Sorgeloos P., 1996. Manual of the production and use of live</p> <p>Lee C.S, OBryen P., Marcus N., 2005. Copepoda In Aquaculture. Wiley- Blackwell.</p> <p>Moksness E., Kjorsvik E., Olsen Y., 2004. Culture of Cold- water Marine Fish. Blackwell.</p> <p>Muzzarelli R.A.A., Peter M.G., 1997. Chitin Handbook. Atec Edizioni, Gr</p> <p>Omori M., Ikeda T., 1992. Methods in Marine Plankton Ecology. Krieger</p> <p>Reich G., 1970. Kolagen. Zarys Metod, Wyniki i Kierunki Badania. Wyda Techniczne, Warszawa.</p> <p>Rutkowicz S., 1970, Zasoby morza i człowiek, Wydawnictwo Morskie, G</p> <p>Sikorski Z.E., 1992, Morskie Surowce Żywnościowe, Wyd. NT, Warszaw</p> <p>Stickney R.R. (ed.), 2000. Encyclopedia of Aquaculture. John Wiley&amp;Sor</p> <p>Świniarski J, Cetinic P, 1993. Technologia połowu organizmów morskich</p> <p>Methods for the estimation of production of aquatic animals. Academic Press, London, U</p>
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	Supplementary literature	<p>Costa-Pierce B.A., 2002. Ecological Aquaculture. Blackwell Science, Oxford, U</p> <p>Cushing D.H. 1975 Marine Ecology and Fisheries. Cambridge University</p> <p>Harden Jones F.R. 1970 Fish Migration, Edward Arnold (Publishers) Ltd</p> <p>History of Aquaculture, 2009. FAO, United Nations.</p> <p>Wojnikanis-Mirski W.N., 1954. Narzędzia połowu rybołówstwa przemysłowego, Wyd</p> <p>The Encyclopedia of Marine Resources 1969 Frank E. Firth Reinhold Co</p> <p>Świniarski J, Kepa J., 1975. Teoria łowności i projektowanie narzędzi po</p> <p>Andersen, R.A. (ed.). 2005. Algal Culturing Techniques. Elsevier Acader</p> <p>Beiras R., Camacho A.P., Albentosa M., 1994. Comparison of the scope different food concentrations in an open-flow system. Mar. Biol. 119, 227-233.</p> <p>Davis F.M., 1958. An account of the fishing gear of England and Wales,</p> <p>Grant J., Cranford P.J., 1991. Carbon and nitrogen scope for growth as f Assoc. U.K. 71, 437-450.</p> <p>Guerin J.L., Stickle W.B., 1992. Effects of salinity on the tolerance and b different environmental salinities. Mar. Biol. 114, 391396</p>
	eResources addresses	Adresy na platformie eNauczenie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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