Załącznik nr 2 do uchwały nr 7 Senatu ZUT z dnia 25 stycznia 2021 r.

Wydział Nauk o Żywności i Rybactwa

Nazwa kierunku studiów: Aquaculture and Fisheries

Poziom kształcenia: studia pierwszego stopnia

Profil studiów: ogólnoakademicki

Dziedzina: nauk rolniczych

Dyscyplina: zootechnika i rybactwo (100%)

Tytuł zawodowy uzyskiwany przez absolwenta: inżynier

Opis zakładanych efektów uczenia się

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| --- | --- | --- | --- |
| Kod | Efekty uczenia się programu studiów | Odniesienie do efektów uczenia się dla kwalifikacji na poziomie 6, 7 lub 8 PRK | Odniesienie do efektów uczenia się prowadzących do uzyskania kompetencji inżynierskich |
| Wiedza | | | |
| AQF\_1A\_W01 | Student has a basic knowledge in the field of chemistry, biochemistry, hydrochemistry, mathematics, statistics and physics. | P6S\_WG | P6S\_WG |
| AQF\_1A\_W02 | Student has a basic knowledge of ecology and protection of aquatic environment, as well as knows the effects of anthropogenic stress. Student has a knowledge in the field of processes occurring in the environment and knows the analytic methods used for their detection and identification. | P6S\_WG | P6S\_WG |
| AQF\_1A\_W03 | Student knows the statistical tools used in the engineering science. | P6S\_WG | P6S\_WG |
| AQF\_1A\_W04 | Student has a knowledge in the field of fish farming techniques, knows the bio-techniques of cultivation of selected fish and invertebrate species significant in aquaculture. | P6S\_WG | P6S\_WG |
| AQF\_1A\_W05 | Student has a profound knowledge in the field of taxonomy, biology, anatomy, and functioning of hydrobionts, with special regard to species significant in aquaculture and in fisheries | P6S\_WG |  |
| AQF\_1A\_W06 | Students knows the terminology used in genetics and knows the basic tools of genetic engineering used in the aquatic organisms cultivation | P6S\_WG |  |
| AQF\_1A\_W07 | Student has a general knowledge in the field of nutrients and knows the basis of the nutrition physiology of aquatic organisms. Student has a basic knowledge in the field of methods of feed production for aquatic organisms. | P6S\_WG |  |
| AQF\_1A\_W08 | Student has a knowledge in the field of breeding techniques of aquatic organisms. Student has a knowledge in the field of breeding biotechnology and rearing of fish juveniles in the natural and artificial conditions. | P6S\_WG |  |
| AQF\_1A\_W09 | Student has the basic knowledge about the human physiology, aquatic environment, diving equipment and rules for save scuba diving. The student has the basic knowledge about the underwater monitoring and using the scuba diving in fisheries and tourism. | P6S\_WG |  |
| AQF\_1A\_W10 | Student is able to define a factors conditioning the spread and persistence of parasites in different groups of aquatic organisms. Student has knowledge of the current parasitological diagnostics and appropriate hygiene standards used in the acquisition and production of aquatic food. | P6S\_WG |  |
| AQF\_1A\_W11 | Student has a basic knowledge in the field of distribution and amount of biological aquatic resources, and methods of their estimation. Student has a basic knowledge in the field of fishing techniques used in the marine and freshwater fisheries. | P6S\_WG |  |
| AQF\_1A\_W12 | Student knows the most important diseases caused by various groups of pathogens, occurring in in aquatic vertebrates and vertebrates. Student knows the reservoirs and transmission routes of viruses, bacteria and parasites in the aquatic environment and the methods of their elimination. She/he indicates possible health effects related to their presence. | P6S\_WG |  |
| AQF\_1A\_W13 | Student has a basic knowledge in the field of economics and business management, environmental management as well as intellectual property protection and patent law. | P6S\_WK | P6S\_WG |
| AQF\_1A\_W14 | Student knows the general rules of creation and the individual entrepreneurship development. Student is able to use the legal norms in practice. | P6S\_WK |  |
| AQF\_1A\_W15 | Student knows the technological properties of waterborne raw materials. Student knows basics of preservation and processing the raw materials. | P6S\_WG |  |
| AQF\_1A\_W16 | Student has a basic knowledge of the non-technical aspects (e.g. environmental, economic, policy) in the engineering tasks. Student knows basic HSW rules in the aquaculture and fisheries. | P6S\_WK | P6S\_WK |
| AQF\_1A\_W17 | Student knows the principles of philosophy, with special regards to philosophy of nature. Students knows the ethical rules in the scientific research. | P6S\_WK |  |
| Umiejętności | | | |
| AQF\_1A\_U01 | Student is able to obtain information from literature, data bases and other sources related to aquaculture and fisheries as well as related areas; is able to integrate the obtained information, interpret it, draw proper conclusions and formulate opinions with their justification. | P6S\_UW | P6S\_UW |
| AQF\_1A\_U02 | Student is able to communicate with professionals and others, using various techniques of transferring information, also in a foreign language. | P6S\_UK P6S\_UW |  |
| AQF\_1A\_U03 | Student is able to prepare, in English or another foreign language, a well-documented study of problems within the scope of aquaculture and fisheries; is able to develop documentation concerning the accomplishment of an engineering task. | P6S\_UK P6S\_UW |  |
| AQF\_1A\_U04 | Student is able to prepare, in English or another foreign language, an oral presentation within the scope of aquaculture and fisheries as well as related areas, using technical vocabulary. | P6S\_UK |  |
| AQF\_1A\_U05 | Student has the ability to learn, e.g. to raise professional competences. | P6S\_UO P6S\_UU |  |
| AQF\_1A\_U06 | Student has the ability to use English or another foreign language on B2 level of the European Framework of Reference, in particular within the scope of aquaculture and fisheries. | P6S\_UK P6S\_UW |  |
| AQF\_1A\_U07 | Student is able to use computer programs supporting the accomplishment of basic engineering tasks. | P6S\_UW |  |
| AQF\_1A\_U08 | Student is able to plan and conduct process experiments, including measurements and computer simulations, as well as to interpret the obtained results and draw conclusions. | P6S\_UW | P6S\_UW |
| AQF\_1A\_U09 | Student is able to use characterize main species of aquatic flora and fauna, as well as define their importance for aquaculture and fisheries. | P6S\_UW |  |
| AQF\_1A\_U10 | Student is able to use correctly terms and undertake common actions related to the scope of hygiene, prophylactics and toxicology to ensure health and welfare of aquatic animals. | P6S\_UW |  |
| AQF\_1A\_U11 | Student is able to use correctly terms in the field of microbiology and parasitology, as well as select needed tools to perform directed diagnostics. | P6S\_UW |  |
| AQF\_1A\_U12 | Student has basic skills to solve simple engineering tasks related to the design and practical use of fishing gears. Student is able to prepare simple fishing gears. | P6S\_UW | P6S\_UW |
| AQF\_1A\_U13 | Student is able to characterise aquatic resources and define methods of their exploitation. Student is able to define factors that affect effectiveness of fishing gears. | P6S\_UW |  |
| AQF\_1A\_U14 | Student is able to characterise results of genetic analysis and apply basic indices in aquaculture programs, resources management and biodiversity conservation. | P6S\_UW |  |
| AQF\_1A\_U15 | Student is able to perform simple engineering calculations related to design of recirculation system, pond and cage culture. | P6S\_UW | P6S\_UW |
| AQF\_1A\_U16 | Based on data bases and other sources related to resources student is able to prepare plan for sustainable exploitation of aquatic resources and prepare all necessary documents. | P6S\_UW | P6S\_UW |
| AQF\_1A\_U18 | Student is able to notice systemic and non-technical aspects (e.g. environmental, economic, policy) while formulating and solving engineering tasks. Student is able to apply basic HSW rules applicable in industry. | P6S\_UO |  |
| AQF\_1A\_U19 | Student is able to select tools and equipment needed to run aquaculture facility and fisheries industry. | P6S\_UO P6S\_UW | P6S\_UW |
| AQF\_1A\_U20 | Student is able to design feed formulation based on proximate composition and nutritional requirements. Student is able to perform simple characteristic of a feed and define feeding efficacy based on zootechnical indices from fish trail. | P6S\_UW |  |
| AQF\_1A\_U21 | Student is able to perform hatching and incubation of fry in artificial conditions for selected fish species. Student is able to perform fish rearing. | P6S\_UW | P6S\_UW |
| AQF\_1A\_U22 | Student can organize an aquatic activity and is able to analyze underwater data, make the underwater monitoring report and work as a team member. | P6S\_UO P6S\_UW |  |
| AQF\_1A\_U23 | Student is able to identify and characterize parasitological contaminations in aquatic food products. She/He is able to appropriate apply diagnostic techniques to identify fish parasites and other pathogens. She/He is able to apply appropriate preventive techniques to remove or deactivate food parasites. | P6S\_UW |  |
| AQF\_1A\_U24 | Student is able to identify and characterize technological properties of aquatic raw materials, as well to apply selected methods and equipment in their processing. Student is able to apply using appropriate methods, techniques and tools in by-products processing. | P6S\_UW |  |
| AQF\_1A\_U25 | Student, using appropriate diagnostic methods, is able to identify the pathogens from particular groups of aquatic organisms. She/he can propose and apply appropriate preventive techniques to limit or completely eliminate the infection. | P6S\_UW | P6S\_UW |
| AQF\_1A\_U26 | Student can perceive the world (especially the nature) from the philosophical point of view. Students can apply ethical rules in the scientific research. | P6S\_UK  P6S\_UO  P6S\_UU |  |
| Kompetencje społeczne | | | |
| AQF\_1A\_K01 | Student is aware of self-knowledge and skills. Student understands the need and possibilities of continuous education and self-improvement. She/he establishes the opportunities of her/his own development and education (the second, third degree studies; postgraduate studies; courses). | P6S\_KK P6S\_KR |  |
| AQF\_1A\_K02 | Student behaves in a professional manner, follows the professional ethical rules and respects the diversity of views and cultures. | P6S\_KO P6S\_KR |  |
| AQF\_1A\_K03 | Student is aware of the responsibility for own work and she/he ensures a compliance with the rules of the team work and takes the responsibility for the cooperative projects. | P6S\_KO P6S\_KR |  |
| AQF\_1A\_K04 | Student is able to assess risks and to evaluate results of actions related to aquaculture and fisheries activities. | P6S\_KK |  |
| AQF\_1A\_K05 | Student is able to think and act in a creative, innovative and enterprising manner. | P6S\_KK P6S\_KR |  |
| AQF\_1A\_K06 | Student understands the need of communicating to the society, e.g. through mass media, information related to production activity and is able to communicate this information in an understandable manner. Student is able to perform the function of a team leader. | P6S\_KK P6S\_KO |  |