**Appendix No.9 to the Regulations of participation in the project and participation in the paid professional internships**

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University stamp

**INTERNSHIP PROGRAMME**

1. **Extract from the educational outcomes in the field of - ECOPOWER ENGINEERING,
1st degree (B.Sc.)**

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| ***PROFESSIONAL KNOWLEDGE (PK)*** |
| The student has general knowledge in mathematics, chemistry and biology required to understand processes related to ecopower engineering |
| The student recognises laws of physics, appropriately selects mathematical tools to solve simple engineering tasks |
| The student has basic knowledge concerning legal and economic foundations as well as technological requirements in the application of environmental protection equipment and systems |
| The student knows basic dependencies between ethics and values and norms, the student is aware of the need to apply law in the protection of intellectual and industrial property |
| The student knows and understands principles for the presentation of spatial (3D) objects on a plane (2D) in orthogonal and axonometric projections, the student knows the principles and tools facilitating their extensive modifications and mutual transformation, the student applies symbolic representations in the graphic presentation of machine parts |
| The student knows and understands problems of statics, kinematics and fluid dynamics, the student knows the design and operation of hydraulic and pneumatic elements as well as principles related to their selection and use |
| The student knows and understands thermodynamic principles as well as thermodynamic processes and cycles used in power engineering systems related to agriculture and renewable energy sources |
| The student knows soil properties, can explain basic theoretical problems in soil geology  |
| The student knows and understands basic concepts in electrical engineering and automatics, principles of operation of electrical and electronic equipment and installations as well as dynamic systems in automatics |
| The student knows and understands concepts and principles of deformable body mechanics and foundations of kinematics of machines used in ecopower engineering |
| The student knows characteristics of major plant and animal raw materials. The student has basic knowledge on rearing main farm animal species and production of animal and plant origin materials |
| The student can characterise and list performance parameters of tractors, machines and tools used in plant and animal production |
| The student knows basic concepts concerning machine work technologies, can explain factors determining functioning and development of rural areas in terms of implementation of waste and machine recycling technologies |
| The student can define metrological properties of measuring instruments, the student knows procedures for appropriate measurement of physical quantities; the student has knowledge on the need to perform precise measurements in ecopower engineering processes |
| The student presents processes taking place in machines and equipment, including those used in plant protection |
| The student knows basic functions of enterprise management and management processes, the student is acquainted with recording and settlement procedures as well as costing methods, the student understands economic risks in the renewable energy industry |
| The student can characterise the structure of fossil fuels and renewable energy sources in Poland and worldwide. The student knows the economic and social role of renewable energy sources |
| The student can characterise and list basic working parameters of machines and tools used in the production of solid biofuels |
| The student knows and understands foundations of production of gaseous biofuels |
| The student has basic knowledge on the production of liquid biofuels |
| The student has basic knowledge on heliothermal and photovoltaic power engineering |
| The student can describe technologies used in wind power engineering |
| The student has basic knowledge on energy collection from surface waters and geothermal sources |
| The student can describe technological characteristics of basic systems in biological municipal waste treatment plants and waste disposal |
| The student has basic knowledge on construction industry |
| The student has general knowledge on costs in logistics, particularly problems of unit costs in vehicle transport |
| The student knows and understands general principles of design, the need for standardisation and unification, methods supporting technical system design |
| The student can explain methods to implement information technology to meet needs related to studies |
| ***PROFESSIONAL SKILLS (PS)*** |
| The student can identify and determine types, subtypes and species of soils and substrates |
| The student can identify plant species grown as energy crops and can apply appropriate cultivation technologies and assess their effect on the natural environment |
| The student can evaluate applicability in agriculture for construction materials and technical designs |
| The student can use measuring instruments, can take measurements of physical, electrical, chemical and biological units characteristic of materials, machines and equipment used on renewable energy installations |
| The student can prepare a descriptive design for the selection of environmental protection methods and equipment for a specific hazard |
| The student can design a simple technological process or technical system in ecopower engineering and use technological documentation |
| The student can formulate opinions on efficiency of energy collection from unconventional sources |
| The student can appropriately select equipment and technological solutions to reduce the environmental impact of a given installation or activity |
| The student can perform simple operations related to the practical operation of agricultural machines, as well as machines and equipment in renewable energy installations |
| The student can identify mechanical, hydraulic and pneumatic elements in functional diagrams of technical equipment used in ecopower engineering |
| The student can appropriately analyse a design task in relation to the environmental impact indicating its drawbacks and advantages |
| The student can present new or upgraded solutions of an assembly in machines and technical equipment in ecopower engineering using analytical methods  |
| The student can use a spreadsheet, prepare and present computer designs, including those supporting agricultural production related to renewable energy sources |
| The student undertakes actions using appropriate mathematical and statistical methods, techniques and technologies in solution of mathematical, physical and chemical problems, in plant and animal production, environmental protection and renewable energy sources |
| The student can prepare a schedule of services in technical maintenance of machines and equipment used in ecopower engineering |
| The student can organise economic activity in the sphere of production or services related to the use of renewable energy sources |
| The student can prepare, based on an analysis of literature and experiments conducted under the supervision of a scientific supervisor, a study in renewable energy sources; the student can present it using appropriate style in Polish and a foreign language (B2 level) |
| The student can propose processes and management procedures, control and logistics systems in a renewable energy generating plant  |
| ***SOCIAL COMPETENCES (SC)*** |
| The student understands the need for individual work aiming at mastering and broadening of acquired knowledge and developed practical skills |
| The student can think creatively and assess the risk of wrong decisions, defending their position; the student is open to criticism and based on it can draw appropriate conclusions |
| The student can define engineering problems and priorities in professional activity |
| The student is aware of the impact of dynamically developing macro- and microeconomic situation on the ecosystem |
| The student is aware of the important effect of modern technology on natural resources |
| The student is creative and open to innovations in technological processes related to ecopower engineering |
| The student is aware of the need to apply appropriate technological solutions in order to reduce the adverse environmental impact |
| The student can define and consider necessary environmental criteria when realising specific engineering tasks |
| The student is open to cooperation with individuals, companies and institutions; the student can work as part of a team, assuming various functions; the student is aware of the effect of their decisions on the team |
| The student can apply the system of values based on respect of law and ethical norms |

**B. Personal data of the Intern and Employer**

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| NAME AND SURNAME OF THE INTERN | ………………………………………………………………………………………………….… |
| NAME OF THE EMPLOYER | ………………………………………………………………………………………………….… |
| INTERNSHIP LOCATION | ………………………………………………………………………………………………….…*(address of the company / institution headquarters / branch)* |
| ASSIGNED INTERSHIP SUPERVISOR | ………………………………………………………………………………………………….… *(Name and surname, position)*………………………………………………………………………………………………….… *(phone number, email)* |

**C. Information about the internship**

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| INTERNSHIP PERIOD[[1]](#footnote-1)1 | **from:** | *dd-mm-yyyy* |
| **to:** | *dd-mm-yyyy* |
| WORK TIMETABLE[[2]](#footnote-2)2 | Scheduled working hours: |  |
| Scheduled number of internship hours daily: |  |
| Days of the week, when the internship is done: |  |
| TOTAL NUMBER OF INTERNSHIP HOURS | **240 hours** |
| NAME OF THE PROFESSION OR SPECIALISATION | ………………………………………………………………………………………………….… |
| SCOPE OF ACTIVITIES PERFORMED DURING THE INTERNSHIP | ……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………… |
| **PROFESSIONAL KNOWLEDGE** REQUIRED DURING THE RELATION*(based on the Extract from the educational outcomes in the field of Ecopower engineering – in part A, PK)* | ……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………… |
| **PROFESSIONAL SKILLS** REQUIRED DURING THE INTERNSHIP*(based on the Extract from the educational outcomes in the field of Ecopower engineering – in part A, PS)* | ……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………… |
| **SOCIAL SKILLS** REQUIRED DURING THE INTERNSHIP*(based on the Extract from the educational outcomes in the field of Ecopower engineering – in part A, SS)* | ……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………… |

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| *……………………………………………………**SIGNATURE OF THE INTERNEE* | *……………………………………………………**SIGNATURE OF THE EMPLOYER* | *……………………………………………………**SIGNATURE OF THE INTERNSHIP ORGANISER (UNIVERSITY)* |

1. 1The internship has to take place between November 1, 2018 and October 31, 2020. [↑](#footnote-ref-1)
2. 2The internship has to match the following timetable: maximum 8 hours daily and 40 hours weekly; minimum 20 hours weekly. [↑](#footnote-ref-2)