

CARACTERIZAÇÃO DE ATIVIDADE ACADÊMICA

Identificação

Atividade Acadêmica: 060637 - Energy Efficiency, Renewable Energy and Certification

Período Letivo: 2024/1

Carga Horária Total: 60 horas-aula

Créditos Acadêmicos: 04

Distribuição da Carga Horária:

Teoria: 60 horas-aula

Competências

In order to achieve the desired profile the following competencies must be developed:

The use of renewable energy in the built environment.

Evaluation and use of sustainability certification process in international and national scenarios.

The ability to develop energy efficient designs, taking into consideration natural ventilation, daylight and fabric heat losses and gains.

Conhecimentos

Renewable Energy.

Thermal Exchanges.

Building Envelop.

Passive design strategies for heating and cooling.

Thermal Performance Assessment (LEED, BREEAM, PROCEL).

Metodologias, técnicas e recursos de ensino e aprendizagem

Based on an active and projectual perspective, teaching methodologies promote:

The development of collaborative and cooperative projects, understanding theory and practice as inextricable dimensions.

The practice of experiments that enable different experiences in knowledge construction.

The creation of personalized knowledge repertoires, based on closer relations between the competences that support Academic Activities and the individual affinities and interests of the students, affording the design of their formative trails.

The inter and transdisciplinarity, encouraging the student's mobility in the university ecosystem.

The use of different educational environments, both in the campus and in specific professional contexts; Contextual formative actions articulated to social, cultural and market practices, according to the specific courses areas; The development of a critical, investigative, innovative and propositional attitude.

The role sharing between professor and students, making the university both a context of collective learning construction and a living environment constituted by the experience of being together.

Some strategies that may compose the Academic Activity:

Case studies: propositions that aim at the generation of social impact under the perspective of projectual knowledge construction and at the students' insertion in real work contexts, enabling them to experience possible positive social impacts that their areas can produce, according to the demands and social characteristics of the community.

Simulations in classroom or in specific contexts: activities that aim at the promotion of different approaches to professional practice, experience of acting strategies and problem-solving in loco, as well as the exercise of debate and pluralism, understood as academic life propellers.

Workshops: applied by guests or professors from the university, prioritizing the inter-relation between graduation and research. These are moments in which the student has the opportunity of being closer to the outcomes that the knowledge developed in the AA can acquire in professional practice. Towards that, the applicators must be chosen according to the possibility of interface between the AA and their research topic, comprehending professors from both graduation and post-graduation levels.

Partnerships among Academic Activities: encourage the collaborative knowledge construction, allowing the experience, the reflection in a collective and solidary way, as well as the shared elaboration of ideas and solutions according to the competences to be developed in each Academic Activity. This modality must be developed in diverse environments and about multiple themes, enabling the experience of simulated situations of problem identification and solving, as well as the systemic view and the understanding about the impacts of their decisions.

Other possibilities: expositive classes; individual or group work; readings and directed studies; problem-solving; document analysis and discussions; case studies; researches; seminars; reviews; film analysis; debates; exercises for individual and group solving; textual productions; interaction and material sharing through learning community.

Metodologias, técnicas e recursos de avaliação

Besides of the application of punctual evaluative instruments, the professor must elaborate strategies of monitoring and mapping, as well as appropriated registers, coherent with the AA, in order to evaluate:

The processes of knowledge production in a macro dimension, and not of isolated competences.

The students' attitude in the face of the methodological processes proposed, considering their protagonism, shared with the professor, in an active production of knowledge.

The impacts of different pedagogical experiences developed along the AA, covering the articulations held by the student in relation to experimentation, reflection and action.

The development of abilities and knowledge, in relation to the practical experiences of the area professional context.

The relations networks built by the students between the AA specific knowledge and their own interest fields - enabling the professor both to collect elements for evaluation and to contribute to the design of the student's formative trail.

The protagonism in relation to the curricular choices and the development of the academic and professional self-knowledge also join the set of competences to be gradually learned by the students, considering that the professors must contribute to the design of those processes.

Resources for the professor's evaluative action:

To elaborate individual portfolios (physical or virtual), composed of periodical registers - according to the frequency agreed between students and professor.

To elaborate collective portfolios, based on the use of an on-line platform that enables a shared and collaborative construction among the students.

To develop projects with execution schedule integrated to the teaching plan, in order to enable the professor to follow all the elaboration stages and to contribute with the students' work dynamics.

To distribute evaluative exercises in different moments, transforming them into small tasks or challenges.

To elaborate a worksheet with the AA competences and the evaluative strategies adopted, making it available on an e-learning platform. This strategy will allow the students to follow their processes and to assume their main role, together with the professor, in their performance in the AA.

Other evaluation possibilities: individual and collective work; readings discussion; tests; reading worksheets elaboration; reviews; papers; reports; case studies; oral exposition; debates; projects elaboration.

The evaluation instruments, resources and criteria, as well as the way in which evaluation will be carried, will be specified in the Academic Activity Teaching Plan, elaborated by the professor.

This academic activity will not have the grade C (GC) due to its practical character.

Bibliografia básica

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