Preparation Activities for Accreditation and Implementation of the Study Programs

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New energy competence system and technology for WB energy stability system curriculum reform
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- A structured framework and a systematic approach to implementation of curriculums for energy studies implies accreditation/verification of newly developed contents.

- The authorities in charge (perspective of RS):

1. Full programs – The National Accreditation Agency
2. Moduls – The National Accreditation Agency
3. Inovation of Contents – Professional Bodies, up to 20% of the curriculum change

FRAMEWORK

- The framework for development of new, innovative programs implies:
  - standards, and
  - procedures.

- Procedures are implemented on the
  - institutional, and
  - national level.

  - What are the common elements for WB?

CONTENT CREATION

- Analysis
- Competences and Qualifications
- Goals and Outcomes
- Green Agenda and Digitalization
- Horizontal and Vertical Mobilities
- Innovations
- Internationalization
- Internship

CONTENT CREATION

- Learning Elements and Outcomes
- QA Institutional Policy
- Teaching Staff Competences
- Equipment
- E-platform
- Student Engagement
- Other Institutional Resources

CURRICULUM DESIGN

- A detailed need assessment is necessary for the sake of prioritizing the curriculum components based on industry needs, academic goals, and student preferences
- Identifying the specific skills and knowledge required in the energy sector
- Surveys and interviews with industry experts, faculty and students
- Analyzing the job market trends helps define the competences in demand

- Algorythm: **Analytic Hierarchy Process (AHP)**

LEARNING OUTCOMES

- Defining clear and measurable outcomes is crucial.

- These outcomes comprise:

1. theoretical knowledge
2. practical skills
3. critical thinking, and
4. problem solving abilities.

LEARNING OUTCOMES

- All the learning outcomes should be adequately addressed by the curriculum by balancing:

1. traditional lectures,
2. practical labs,
3. online modules, and
4. experiences on field.

- Algorythm: **Curriculum Mapping Algorythm**

BLENDED LEARNING STRATEGY

- Traditional classroom components such as face-to-face lectures and discussions are crucial for facilitating interactive learning.
- Active learning techniques are:

1. group discussions
2. debates, and
3. problem-solving exercises.

BLENDED LEARNING STRATEGY

- They are accompanied by the online learning components delivered via a learning management system (LMS), such as:

1. high-quality e-learning modules,
2. video lectures,
3. interactive simulations, and
4. online quizzes.

This system tracks progress and facilitates communication.

- Algorythm: **Adaptive Learning Algorythm**

PRACTICAL EXPERIENCE INTEGRATION

- Practical experience is crucial in energy studies.
- Theoretical knowledge is applied to practical scenarios providing hands-on experience with energy systems and technologies.
- Partnerships with local energy companies provide opportunities for:

1. internships,
2. fields trips, and
3. hands-on training.

- Algorythm: **Scheduling Optimization Algorythm**

TECHNOLOGY INTEGRATION

- An LMS is essential for managing course content, tracking student progress and facilitating communication.
- This platform should support a variety of multimedia content, discussion forums, and assessment tools.
- Virtual labs and simulation software allow students to replicate real-world energy systems and processes.
- Discussion boards, video conferences and group workspaces facilitate communication and teamwork.

- Agorythm: **Learning Management System (LMS) Analytics**

FACULTY DEVELOPMENT

- Faculty members need training and support in hybrid teaching methodologies and digital tools.
- Providing continuous professional development opportunities helps them stay updated on advancements in the energy sector and educational technology.
- Encouraging resource sharing through a repository of teaching materials and best practices fosters a collaborative environment where faculty can learn from each other.

- Algorithm: **Knowledge Sharing and Collaboration Algorithm**

STUDENT ENGAGEMENT AND ASSESSMENT

- Interactive and engaging content is vital to maintain student interest and participation.
- Gamification elements, such as badges, leaderboards and challenges, can motivate students to engage more deeply with the material.
- Formative assessments which provide regular feedback, helping students understand their progress and areas for improvement include:

1. quizzes,
2. assignments, and
3. peer assessments.

STUDENT ENGAGEMENT AND ASSESSMENT

- Summative assessments which comprehensively evaluate student skills and knowledge include:

1. exams,
2. projects,
3. presentations, and
4. practical demonstrations.

- Algorythm: **Gamification Algorithm**

CONTINUOUS IMPROVEMENT

- Continuous improvement is essential for maintaining the quality and relevance of the curriculum.
- Collecting feedback from students, faculty and industry partners helps identify strengths and weaknesses through:

1. surveys,
2. focus groups, and
3. course evaluations.

- Regular curriculum reviews and updates ensure that the curriculum remains relevant and aligned with industry needs and technological advancements.

- Algorithm: **Feedback Loop and Iteration Algorithm**

THE GOALS

- Submitting material to official bodies:

1. National Agency,
2. Regional Agency, or
3. Professional Bodies.

- The results are top priority!

- The main output of NEST4WB is the proof of verification!

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