EUR-ACE GOING GLOBAL
ASSURING AND CERTIFYING QUALITY
OF ENGINEERING EDUCATION PROGRAMMES

ENAEE Forum 2021

2015 EAFSG

2021 Revision of the EAFSG

Establishing Working Group

ENAEE EASFG Review 2021 Survay/ Mapping to Survey results

LC input

Final proposal of EAFSG

It was proposed that the EASFG review process for 2021 could undertake a complete review of all aspects of the guidelines to consider among other items:

- The programme outcomes for Bachelors and Master levels
- The assessment criteria
- New developments in the industry environment e.g. artificial intelligence, cyber security
- Ethical considerations in the new environment
- Modes of delivery
- Assessment in a variety of conditions e.g. online, mixed mode
- Preparation for lifelong learning and professional practice
- External factors such as UN SDGs, Universal Design
- Non-classroom education; apprenticeships
- Industry engagement

POLITECHNIKA BIAŁOSTOCKA

Areas for consideration as part of the review included:

• Greater clarification between Bachelor and Master outcomes,

• Addressing online study and delivery of content

• Input from the labour market (ENQA- ESG)

• Reflection on the teaching and learning process (online also)

• Consideration of 3 and 4 year Bachelor programmes – they deliver different levels of learning and complexity. In some countries the market does not accept graduates of three year programmes as meeting requirements of industry for certain roles.

• Master level programmes should demonstrate more evidence of research

• Should there be discipline specific guidelines?

• As ENAEE has members from South America and North Africa how can the criteria reflect education in these areas? Do we have sufficient knowledge about the education systems in these areas?

• Versions of the EASFG in a number of languages.

MAIN RESULTS

RESULTS

- Broad discussion of programme outcomes for Bachelor Degree Programmes and Master Degree Programmes vs. Sydney Accord and Washington Accord,

- Clarification and comparison of programme outcomes

- **EAFSG Bachelor vs. EAFSG Master**,

- Considering new study process circumstances and programme evaluation,

- Considering the current conditions for curricula design process and conditions for implementing education process (quality of education).

RESULTS

	The learning process should enable **Bachelor Degree graduates to demonstrate**:	The learning process should enable **Master Degree graduates to demonstrate**:
Knowledge and Understanding	- knowledge and understanding of the mathematics, computing and other basic sciences underlying their engineering specialisation, at a level necessary to achieve the other programme outcomes; - knowledge and understanding of engineering fundamentals underlying their specialisation, at a level necessary to achieve the other programme outcomes, including some awareness at their forefront; - awareness of the wider multidisciplinary context of engineering.	- in-depth knowledge and understanding of mathematics, computing and sciences underlying their engineering specialisation, at a level necessary to achieve the other programme outcomes; - in-depth knowledge and understanding of engineering disciplines underlying their specialisation, at a level necessary to achieve the other programme outcomes; - critical awareness of the forefront of their specialisation; - critical awareness of the wider multidisciplinary context of engineering and of knowledge issues at the interface between different fields.
Engineering Analysis	- ability to analyse complex engineering products, processes and systems in their field of study; to select and apply relevant methods from established analytical, computational and experimental methods; to correctly interpret the outcomes of such analyses; - ability to identify, formulate and solve engineering problems in their field of study; to select and apply relevant methods from established analytical, computational and experimental methods; to recognise the importance of non-technical –societal, health and safety, environmental, economic and industrial - constraints.	- ability to analyse new and complex engineering products, processes and systems within broader or multidisciplinary contexts; to select and apply the most appropriate and relevant methods from established analytical, computational and experimental methods or new and innovative methods; to critically interpret the outcomes of such analyses ; - ability to conceptualise engineering products, processes and systems; - ability to identify, formulate and solve unfamiliar complex engineering problems that are incompletely defined, have competing specifications, may involve considerations from outside their field of study and non-technical – societal, health and safety, environmental, economic and industrial – constraints; to select and apply the most appropriate and relevant methods from established analytical, computational and experimental methods or new and innovative methods in problem solving; - ability to identify, formulate and solve complex problems in new and emerging areas of their specialisation.

RESULTS

- Considering the UN Sustainable Development Goals in engineering programmes

  – determination of the main goals covered in programmes,

- Emphasis on the development of new methods in online teaching/learning ,

- Considering the requirements of the labor market,

- Starting discussion about Institutional Accreditation and in-depth discussion

  about Transnational Accreditation.

EXPECTATIONS AFTER REVIEW

A new **guide for agencies** clarifying the definitions e.g. complexity etc.,

- Alignment between ENAEE and the International Engineering Alliance with regard to standards, guidelines, procedures,

- In-depth discussion about engineering programmes delivered online – approach to practical classes (**?**),

- Considering such as aspects like the Green Deal and digitalisation of society etc.,

- Promotion of the EUR-ACE label as a quality brand recognisable for its excellence.

ONLINE ACCREDITATION

→ ONLINE ACCREDITATION REVIEW PROCESS

→ PROGRAMMES DELIVERD ONLINE

Main comments:

- Online accreditations have been very important during the COVID-19 pandemic,
- On site visit is useful for accurate assessment of the infrastructure, labs, support units etc.
- Online accreditation excludes the networking/social aspect e.g. formal and informal conversations with the programme team, students and staff,
- Hybrid methods can succesfully be implemented after the pandemic period.

ONLINE ACCREDITATION

Many agencies have implemented an online visit procedure detailing the following topics:
- Form of cooperation of experts with agency,
- Form of cooperation of expert team with HEI/Faculty,
- Virtual visit preparation,
- Tool used,
- The way of delivery of self-assessment report,
- Documentation storage.

RELATIONS WITH THE SOCIO-ECONOMIC ENVIRONMENT - INPUT FROM LABOUR MARKET

The cooperation with institutions of the socio-economic environment, including employers, should be permanent and it should take various forms, adequately to the goals of education process and the needs resulting from the implementation of the study programme and the achievement of learning outcomes.

These forms of cooperation include:

- organization of apprenticeships and internships,
- organization of volunteer work, study visits,
- implementation of diploma thesis,
- participation of representatives of the social and economic environment in conducting classes/lectures or verifying learning outcomes, certification,
- analysis of the needs of the labor market and the graduate fates.

# RELATIONS WITH THE SOCIO-ECONOMIC ENVIRONMENT - INPUT FROM LABOUR MARKET

The study programme should be consistent with the concept and objectives of education process and the resulting areas of professional/economic activity and the professional labor market appropriate for the field of study.

Periodic reviews of cooperation with socio-economic environment, including employers, in relation to the study programme, should include:
- assessment of the correctness of cooperating institution selection,
- the effectiveness of the forms of cooperation and the impact of its results on the study programme and improvement of its implementation,
- achievement of learning outcomes,
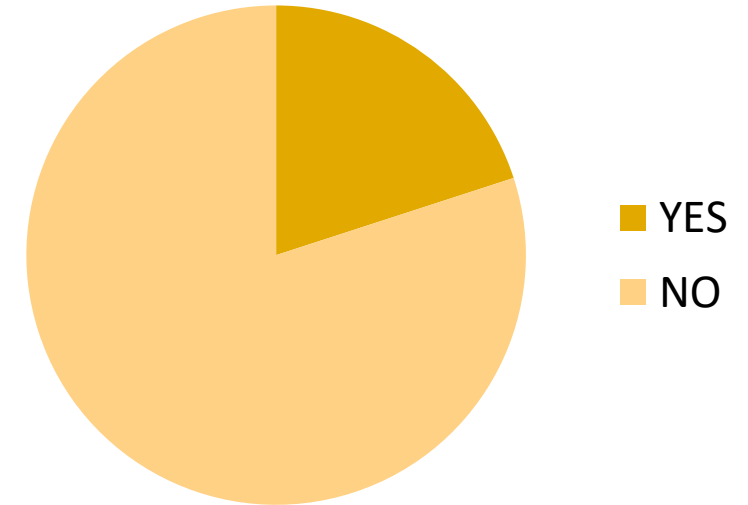- tracking graduate fates.

PROCEDURES

Would you like to suggest any changes to
how ENAEE schedules accreditation visit?

Would you like to suggest any
changes to the panel visit?

17,1%   ■ YES

82,9%   ■ NO

■ YES

■ NO
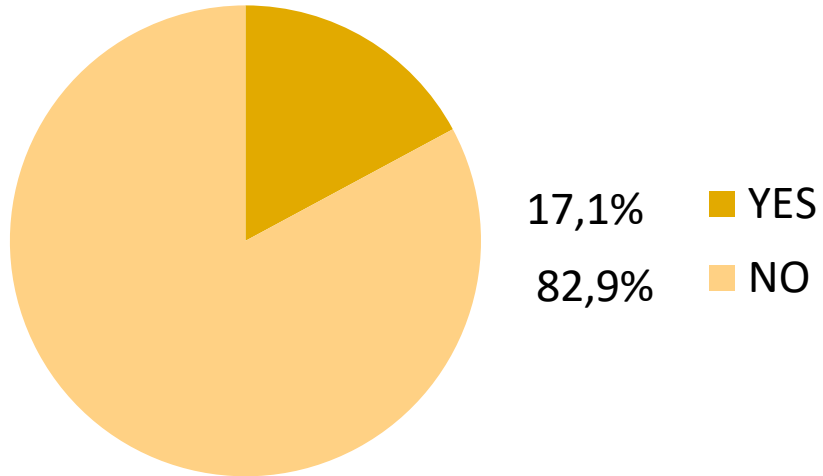
Would you like to suggest any
Changes to the panel report?
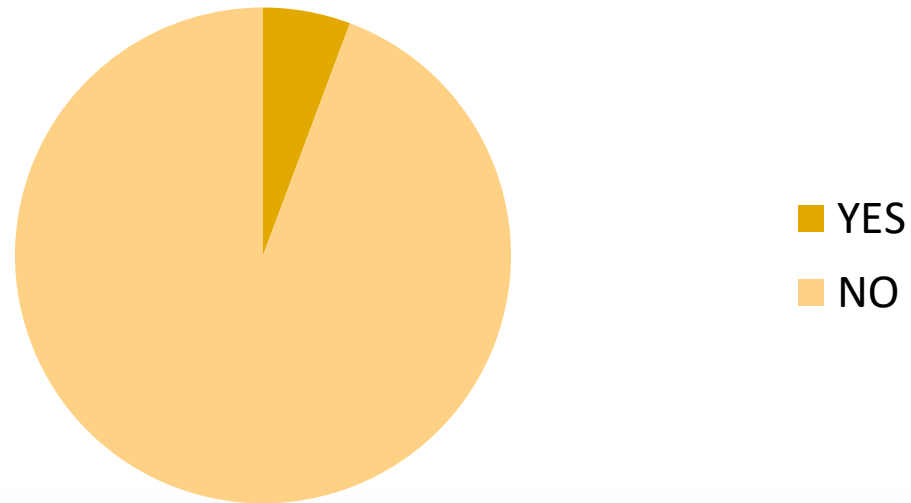
■ YES

■ NO

WHAT WILL BE THE FUTURE OF EAFSG?

INSTITUTIONAL ACCREDITATION

ENAEE SURVEY

	No	46.7%
	Yes	53.3%
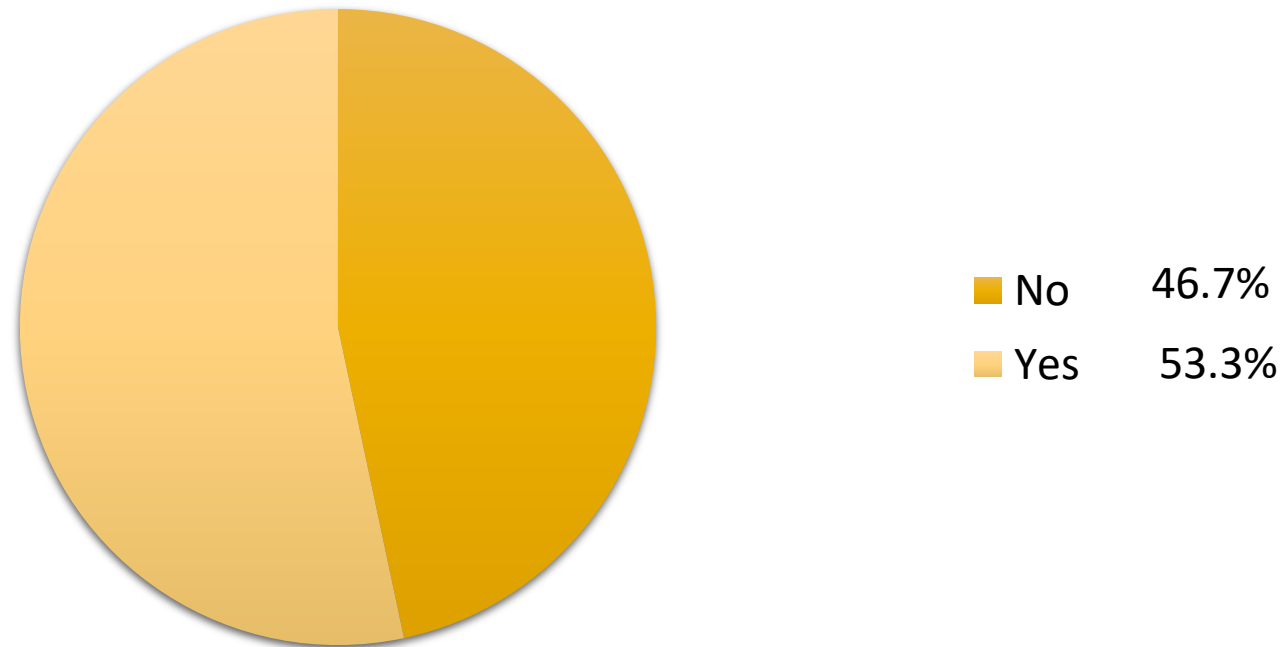
• Accreditation model at the institutional level

• Abandonment of the evaluation of engineering programs in favor of an overall evaluation of the institution

TRANSNATIONAL ACCREDITATION - Conclusions

Transnational accreditation should be done only if there is no accreditation agency in the country the programme belongs. If there is a local agency, transnational accreditation should be not replace the local accreditation.

Transnational Accreditation should:
a) be an opportunity to share best practices applied in other countries;
b) not be a way of circumventing national rules;
c) not be a way to achieve accreditation more easily

THANK YOU FOR ATTENTION