

SALEIE project - WP3 Global Challenges-Final Version 2013

SALEIE - WP3 Global Challenges Survey

We are asking you to participate in a survey into the Study of Existing EIE Programmes Oriented to Key Challenge Areas in Higher Education Institutions

The aim of this survey: The aim of this survey: survey of existing EIE programmes in the key challenge areas leading to a basis of example curricula with module content, learning outcomes, level of achievement and assessment methods. The research is being supported by the SALEIE Project which is funded by the European Union Lifelong Learning Programme.

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Your name and email address is requested for the sole purpose of providing additional information should you agree to give it during the questionnaire. We will ensure the confidentiality of your name and email, and no parties involved in the research will release your identity without you agreeing it can be released.

By continuing, I agree to participate voluntarily in a survey. I understand the research purpose of the survey and the protection that will be given to any information I provide. I also understand that by participating in this study I am not waiving any of my legal rights.

I have been informed that I may contact Tony Ward in the Department of Electronics, University of York, England by email at tony.ward@york.ac.uk, or Marian Poboroniuc from the GH. ASACHI Technical University of Iasi, Romania by email at mpobor@ee.tuiasi.ro if I have questions or comments about this survey.

If you wish to receive a copy of the results of this project please contact Tony Ward at the above email address.

This questionnaire is a work product of the SALEIE project. Do not copy or otherwise use the material without permission.

Please read the instructions for each of the following questions. Review the response options carefully before you mark your answer.

This questionnaire can be downloaded in **pdf** format from [here](#)

About your institution

This section relates to you and your institution.

***1. Institution name:**

***2. Country:**

Country

***3. Your Name**

*4. Your role within your institution:

- Academic = 1; Administrator = 2 Other = 3

Other (please specify)

*5. Your contact email:

About Electrical and Information Engineering (EIE) in your Institution

6. Rate your involvement in teaching Electrical and Information Engineering (EIE) students.

1=It is my job

2= It is part of my job

3=No EIE field teaching

7. How many EIE teaching staff do you have in total in your organization/ institution?

- 1-10;
 10-50;
 50-100;
 >100

8. Please also indicate the nature of teaching/faculty involvement (please tick all that apply):

- Full time
 Part Time
 External Visiting
 Other

Other (please specify)

9. How many teaching staff are involved in teaching within your curriculum?

- 1-10;
 10-50;
 50-100;
 >100

10. Which year did your institution start EIE teaching?

Year:

11. Average the total number of registered students within the last 3 years at your institution/faculty/department on EIE study programmes:

- 1-10;
- 10-50;
- 50-100;
- >100

If you know the average number please specify it

Information about Faculties in EIE field from your institution

***12. Please indicate whether you are answering for one or more Faculty/Departments that are within the Electrical and Information Engineering Discipline set?**

- One
- Two
- More than two

13. If More than two please indicate the number :

14. Name of Faculty/Departments:

National Level Questions (for university staff)

15. Are you aware of any other institutions/faculties in your country providing EIE teaching:

- Yes
- No

16. Please estimate the number of other institutions/faculties in your country provide EIE teaching?

Universities Number:

Faculties Number :

Departments Number:

Institution questions related to EIE programmes (for university staff)

This section focuses on your Institution and the EIE programmes

17. Which of the study programmes listed below fits better with those taught within your institution/ faculty/ department?

- 1=Study programmes in Electrical Engineering
- 2=Electronic Engineering;
- 3=Computer Science;
- 4=Mechatronics;
- 5=Robotics;
- 6=Telecommunications;
- 7=Control;
- 8=Avionics;
- 9=Computer engineering;
- 10=Biomedical engineering;
- 11=Power engineering
- 12=Other

Other (please specify)

18. What are the global technical challenges the EIE programme addresses? Rate the level of compliance with:

(* <http://www.globalsciencecollaboration.org/home>)

	1=not relevant	2=weak	3=partial	4=stronger
Sustainable development and climate change.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Global convergence of IT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food security*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energy e.g. secure and efficient energy*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart, green and integrated transport*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Do you have any of the following topics regarding Sustainable development and climate change in your curriculum?

- Design for energy optimization
- Life Cycle Assessment for electrical and electronic products.
- Databases for "green technologies"
- Development of new "green" components
- Design with components and technologies with focus on sustainability
- Sensor technology
- Monitoring and data processing
- Wireless communication giving easy access all over the world
- Recycling, Cradle to Cradle (C2C) or regenerative design

Please add any new proposed topics

20. Do you have any of the following topics regarding Energy in your curriculum?

- High voltage and smart grid (power system): Infrastructure challenger;
- Renewable energy
- Bio and Chemical Fuels
- Embedded Energy for transportation
- Using optimized energy mode and energy storage

Please add any new proposed topics

21. Do you have any of the following topics regarding Clean Water in your curriculum?

- Identifying and characterizing the underlying processes that affect water quality
- Develop technologies to target agricultural best management practices to critical areas of the landscape

Please add any new proposed topics

22. Do you have any of the following topics regarding Global convergence of IT in your curriculum?

- Cloud technologies: Internet services, broadcast services, telecommunications value-added services
- Pipe technologies: Traditional telecommunications network, Internet data communication network, cable network
- Device technologies: Personal electronic devices, telecommunications premise, home entertainment boxes

Please add any new proposed topics

23. Do you have any of the following topics regarding Health Issues in your curriculum?

- Sensors for collecting of medical data and parameters of physiological processes in alive tissues.
- Development of information systems (hardware and software) for medical diagnostic.
- Computing of diagnostic systems for collecting treatment and transfer of ECG and/or EEG-signals, magnetic resonance's images, ultrasound's images X-ray's images etc.
- Investigation on influence of electromagnetic field on the human body in a large frequency band
- Investigation on influence of ultrasound on the human body
- Investigation of influence of X-ray and nuclear processes on the human body
- Investigation on influence of laser on the human body
- Investigation on influence of noises on the human body in a large frequency band
- Investigation on influence of mechanical waves on the human body
- Development of methods for protection of human body in the case of different external influences.
- Development of methods for design of systems for physiotherapy using influence of electromagnetic field, ultrasound, laser, nuclear processes, mechanical waves on the human body.
- Development of methods for design of hardware for local and global communication systems for telemedicine
- Development of methods for design of software for local and global communication systems for telemedicine
- Development of different communication environment for transfer of medical information as wireless systems, cable systems, GSM-systems, Internet, satellite systems etc.
- Investigation on compatibility of different communication systems in a global system for telemedicine.
- Investigation and development of interactive medical systems for permanent observation at home of people with health problems;
- Computer systems for save and protection of medical information
- Protection of medical information in the cases of cyber crime
- Computer restoration of medical diagnostic signals carried in different communication environment in the case of interference of because of physical overlay of noise from external sources
- Assistive Technology to increase, maintain or improve the functional capabilities of individuals with disabilities
- Robots to promote wellness and health

Please add any new proposed topics

24. Do you have any of the following topics regarding Food Security in your curriculum?

- Time and temperature control;
- Hazard analysis and critical control point (especially seafood)

Please add any new proposed topics

25. Do you have any of the following topics regarding Green/Integrated Transport in your curriculum?

- Modelling and simulation of transportation systems logistics - design of resource efficient and safety algorithms
- Human-Machine Interface (HMI) standardization for operators in area of transportation systems
- Advanced Transportation Technologies - research and development of smart equipment and services for drivers, operators and citizens
- Methods and systems for improvement of transportation systems safety and security - data security, development of systems for air transport safety
- Development of traffic systems for reporting via radio, GPS and mobile applications in case of road transport to reduce congestions
- Research in area of communication networks within the transport systems
- X-by-wire technologies
- Standardization of transport redundant sensor systems and safety algorithms
- Research and developments in area of autonomous vehicles as well as in area of humanoid car drivers
- Fully automated train and underground transport
- Methods to maximize the efficiency of the transport system
- Methods to reduce localised air pollutants

Please add any new proposed topics

26. Would your institution be willing to share EIE curricula teaching experiences in terms of learning outcomes, level of achievements and assessment methods within the SALEIE project?

- Yes
- No

27. Is the curriculum within your institution providing to students

- Bachelor courses
- Master courses

28. How do you rate the compliance of the current EIE curricula to the top-level criteria for improved EIE curricula listed below :

	1=unsatisfactory	2	3	4	5=very good
Sector/industry/academic relevance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexibility for use in multiple courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Modularity of course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stakeholders involvement in designing the curriculum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interoperability – the ability to work with other providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conduciveness – ability to contribute to learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Applicability to EIE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Level of support - this includes in/out of class and learning difficulties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Target level (Bachelor/Master)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Duration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Requirements and/or prerequisites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Valorisation level of growth aspects – do they maintain value?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organization of the curriculum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Balance of delivery (theory- practice)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. Does your institution have a web link to the EIE curricula?

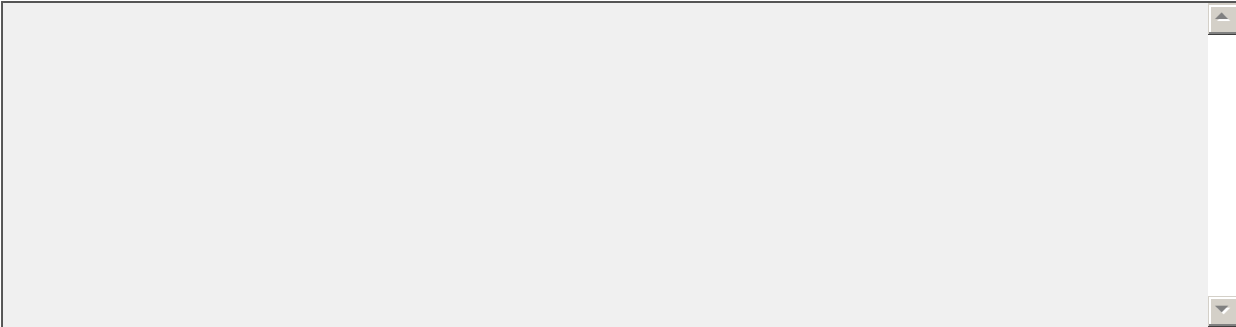
- Yes
- No

If Yes, please provide the link:

30. If the web site doesn't provide enough data can you provide the significant names of these EIE modules:

- Yes
- No

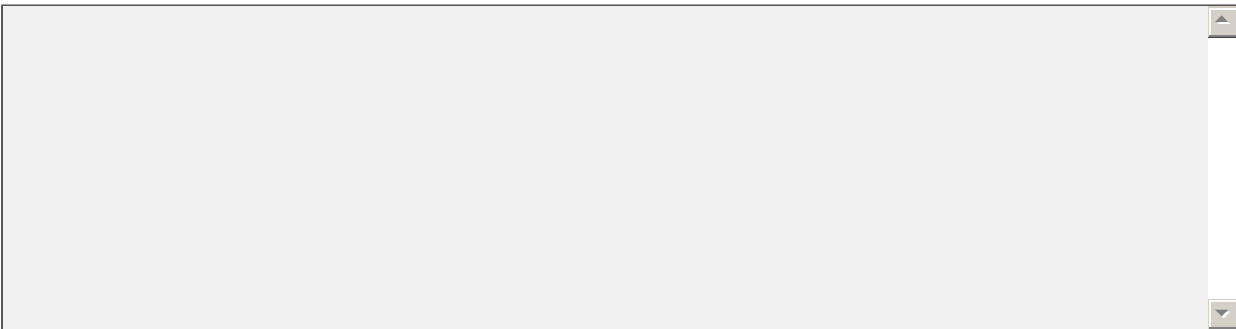
If Yes, please provide the names of these EIE modules:



31. Is your EIE curricula made up from modular content?

- Yes
- No

If Yes, please provide the module titles:



32. Is your curriculum devoted to the specific Global Challenge or does it contain only some modules related to it?

- Dedicated to Specific Global Challenge;
- Contains modules on specific Global Challenge/s;
- Contains modules on a variety of Global Challenge areas;
- No

33. EIE curricula learning outcomes measures. Please rate their importance .Student will be able to:

	1=less relevant;	2	3	4	5=most relevant
understand the mathematical and physical foundations of electrical and information engineering and how these are used in electronic devices and systems. An understanding that engineering knowledge should be applied in an ethically responsible manner for the good of society.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
critically evaluate alternate assumptions, approaches, procedures, tradeoffs, and results related to engineering problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
design a variety of systems related to the EIE topics (e.g. in electronic and/or computer-based components and systems for applications including signal processing, communications, computer networks and control systems).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
lead a team of student engineers performing a laboratory exercise or design project; to participate in the various roles in a team and understand how they contribute to accomplishing the task at hand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
participate in the various roles in a multicultural team and understand how they contribute to accomplishing the task at hand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
participate in the various roles in an interdisciplinary project	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
take part in student/curriculum exchange providing mobility for students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use written and oral communications to document work and present project results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
use written and oral communications to document work and present project results in other languages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
understand intellectual property rights and patents, marketing, the regulatory environment and quality control issues for products and processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
describe and experience innovation and entrepreneurial activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

34. How are industrial partners are involved in your curricula?

- not involved;
- teaching;
- welcoming students;
- certified courses;
- sponsoring;

Other (please specify)

35. Please estimate the ratio of projects and internship, labs and face to face courses within your curriculum

projects and internship:

labs:

face to face courses:

36. Please indicate which of the following curricula assessment methods are relevant for EIE

	1=less relevant	2	3	4	5=most relevant
oral ;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
written, problem based;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
written, simple multiple-choice;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
written, sophisticated multiple-choice i.e. requires more than one selection for the correct answer project based ;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
labs report.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

37. Do you have any results related to the employment data of your graduates;

- Yes
- No

If yes please indicate the relevance to the student degree [insert %].

38. Do you have any modules preparing the students for research and/or innovation activities?

- research
- innovation
- both

39. Other comments:

Thank You

Thank you for your assistance with our study.