



CESAER

CESAER ANNUAL MEETINGS (CAM) 2018  
HOSTED BY  
UNIVERSITY POLITEHNICA OF BUCHAREST (UPB)  
17<sup>TH</sup> - 19<sup>TH</sup> OCTOBER 2018  
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# UNIVERSITY POLITEHNICA OF BUCHAREST - TWO CENTURIES OF EXCELLENCE IN EDUCATION AND RESEARCH

## HISTORY OF UPB

University POLITEHNICA of Bucharest (UPB) was founded in 1818 and it is the oldest and most prestigious technical university in Romania (see Figure 1 for a detailed timeline of the university's evolution). Over its 200 years of existence, UPB has managed to invest in human capital and to create a qualitative profile that promotes excellence in technical education and research.

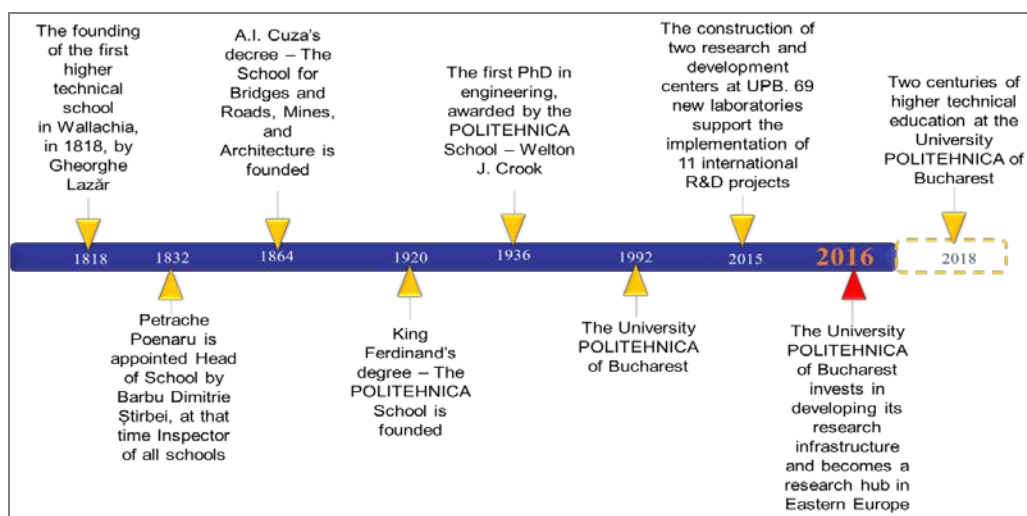


Figure 1. Modern and contemporary history of UPB

### Remarkable moments of University POLITEHNICA of Bucharest modern history

The University Politehnica of Bucharest is the largest technical university in Romania. Its traditions are connected to the founding of the first higher technical school in Wallachia, in 1818, by Gheorghe Lazăr.

Thus, on 24 March 1818, by a princely edict of Ioan Caragea, the premises of Saint Sava Abbey were converted into the new school, *Școala Tehnică Superioară pentru Ingineri Hotarnici* ('The Upper School for Surveying Engineers').

Later, in 1832 the school was reorganised, including four cycles, in accordance with the provisions of Organic Regulation. Among other faculties, the one dealing with exact sciences included courses such as applied trigonometry, geodesy, mineralogy, engineering graphics, descriptive geometry, mechanical elements applied to ordinary machines, principles of building roads and bridges, elements of architecture, etc.

Gheorghe Duca tried and succeeded to bring the best professors to the 'National School of Bridges and Roads'; among these were David Emmanuel (Elementary Mathematics), Spiru Haret (Higher Algebra and Analytical Geometry), C. M. Mironescu (Statistics and Engineering Graphics), Constantin Istrati (Physics), or Anghel Saligny (Bridges and Roads). Moreover, Gheorghe Duca himself was considered the greatest authority in railways at the end of the 19th century. This was perhaps a turning moment, when it was clearly demonstrated that Romania was capable of achieving on its own what had been deemed likely to be obtained only abroad, namely the training of highly qualified science and engineering specialists.

The year 1890 also represented a momentous point, when at the National School of Bridges and Roads a new commission was set up. Its main role was to issue equivalency certificates for the engineering diplomas obtained abroad, thus transforming this national school into a model for evaluating higher technical studies.

Nicolae Vasilescu-Karpen was appointed director of the School in February 1920. As a direct result of his endeavors, the government approved the establishment of Polytechnic Schools in Romania, conceived as higher education institutions, similar to universities, having as their final aim engineering training under the Ministry of Public Works. The Polytechnic School was set up by transforming the "National School of Bridges and Roads" into the "Polytechnic School of Bucharest".

In 1948-1992, the name of the school was 'The Polytechnic Institute of Bucharest'. For some years, it was called '*Institutul Politehnic 'Gheorghe Gheorghiu-Dej' București*'. Based on a resolution of the Senate (November 1992), the Polytechnic Institute of Bucharest turned into University Politehnica of Bucharest.

In 2018 UPB will celebrate [two centuries of existence](#). Moreover, 2018 is a milestone year in the Romanian history, as it marks [a century since the formation of the modern Romanian state](#).

In the present, University POLITEHNICA of Bucharest conducts educational activities in the technical fields – it comprises 15 faculties, and 14 doctoral schools, over 170 master's programs and well over 30,000 students throughout all the years of study – 1,700 PhD candidates, 1344 teachers (as in 2016).

## RESEARCH ACTIVITIES

UPB research activities are amongst the top priorities of the university with two of the newest and most important research hubs in the region - i.e. [Research Center for Advanced Materials, Products, and Processes \(CAMPUS\)](#) and [Research Center for Intelligent Products, Processes, and Services \(PRECIS\)](#). In terms of research, we are almost always positioned in the top Romanian research institutions (regardless of the ranking authority).

Our research potential is due to the advanced and extensive research infrastructure which was built with the contribution of structural funds. In that which regards the European structural funds dedicated to the development of research or to the improvement of the quality of human resources, our university regarded the funding as an opportunity and - through our community - we took full strategic advantage of the available funding. Thus, cutting edge research centres were born (like CAMPUS and PRECIS - the twin buildings dedicated to advanced research and development) and the University POLITEHNICA of Bucharest was able to extend its own research-oriented human resources.

Our investments in research infrastructure rise up to €72.5 millions, almost equal to our investments in human resources, which total €63 millions. We are now among the most proficient universities in Romania in absorbing European funds and we are proud for being able to offer our research community the possibility to continue their pursuit of innovation and breakthrough solutions.

CAMPUS covers an area of 8,600 m<sup>2</sup>, comprising seven floors and the ground floor. The 41 research laboratories support a significant corpus of research projects in the following fields: micro- and nano-materials; food safety; electronics and telecommunications; computers; information technology; electrical engineering; energetics and mechanics.



Research Center for Advanced Materials, Products, and Processes (CAMPUS)

PRECIS has a total area of 8,300 m<sup>2</sup>. With the construction of 28 new research and development laboratories, the research process at UPB has been significantly upgraded. The new facilities support the university's goal of creating more space to develop teaching and research activities, particularly within the field of intelligent services for energy management.



Research Center for Intelligent Products, Processes, and Services (PRECIS)

Our education and research principles and the almost two centuries of experience vitalise curriculum design in undergraduate and postgraduate programmes, and introduce the students to the latest thinking in their chosen fields. With outstanding facilities and the widest range of courses, we are highly respected across the region as a centre of teaching excellence.

## INTERNATIONAL COOPERATION

With regards to the international dimensions, our university is part of over 20 larger academic associations: CESAER, the *Agence Universitaire de la Francophonie* (AUF), European Distance and E-Learning Network (EDEN), the European University Association (EUA) and so on. We have over 265 signed inter-university mobility agreements and well over 150 Memorandums of Understanding (MoUs) with universities across the world. Aside from our students - which we promote in the international environment - our university receives over 800 foreign students every year.

One of the strategic dimensions of our activities is the interaction with the private sector. We take pride in being synchronised with the needs and wants of an important part of the engineering and IT firms in Romania. In this sense, we are the most important nationwide provider of IT and engineering specialists. To maintain such responsibility and educational quality standard, the UPB shall communicate constantly with the private sector and - moreover - develop initiatives and projects alongside the great IT and engineering firms. Among these initiatives, to name just a few, are POLIFEST (the most important job fair dedicated to students), Career Day, various programming, and engineering contests, as well as joint PhD and Masters projects. Thus, partnerships with the private sector are a prerequisite of performance because they offer us know-how on how the great organisations work and what their needs are in terms of human capital. Our collaboration horizon covers over 2600 agreements with the most important players in the private sector.



# BUCHAREST - CAPITAL OF ROMANIA

Bucharest is the largest Romanian academic centre - it hosts over 200,000 students. As for education and research performance, Bucharest has many high-impact universities such as: the University POLITEHNICA of Bucharest (30,117 students), 'Carol Davila' University of Medicine and Pharmacy (12,015 students), the Bucharest University of Economic Studies (22,315 students), the Technical University of Civil Engineering of Bucharest (6,015 students), the 'Ion Mincu', the University of Architecture and Urbanism (2,936), the University of Agronomic Sciences and Veterinary Medicine of Bucharest (12,697), the National University of Arts Bucharest (1,532 students), the National University of Music of Bucharest (923 students).

Adding the satellite towns around the urban area, the metropolitan area of Bucharest has a population of 2.27 million people. Bucharest is the 6<sup>th</sup> largest city in the European Union by population within city limits, after London, Berlin, Madrid, Rome, and Paris.

In terms of visual arts, the city has museums featuring both classical and contemporary Romanian art - the National Museum of Art (MNAR), the Village Museum 'Dimitrie Gusti', the second open-air ethnographic museum in the world, and the Romanian Peasant Museum, one of the most diversified museums in the family of the Art and Folk Tradition Museums in Europe, National Museum of Contemporary Art (MNAC).

## MAIN ATTRACTIONS

The main attractions and must-see places in Bucharest are:



Romanian Athenaeum



[\[website\]](#)



Parliament Palace



[\[visit website\]](#)



Village Museum



[\[website\]](#)



National Museum of Art of Romania



[\[website\]](#)



Cotroceni Palace and Museum



[\[website\]](#)



'Grigore Antipa' National Museum of Natural History



[\[website\]](#)

For complete information, please visit the official [Bucharest tourism website](#).



## THEME CESAER ANNUAL MEETINGS 2018

There was much to do about Research & Innovation Infrastructures (RIIs) at European level:

- The effective investment in and use of RII [became](#) a priority in realising the European Research Area (ERA) in 2012.
- The Competitiveness Council in 2014 “[recognised](#) the great efforts made by the Member States to strategically plan their investments in RIs, noted the need for further coordination of country specific and European roadmaps on RI and of national funding decisions for the development and operation of RI, including those identified by ESFRI.”
- The EU is implementing a [European Cloud Initiative](#) comprising the [European Open Science Cloud](#) (EOSC) underpinned by the [European Data Infrastructure](#) (EDI). On 13<sup>th</sup> March 2018, the European Commission published a [Staff Working Document on Implementation Roadmap for the EOSC](#).
- The European Commission on 26<sup>th</sup> September 2017 published a [Staff Working Document on Long-Term Sustainability \(LTS\) of RI](#) paving the way LTS RI action plans.
- Innovation Infrastructures (IIs) under Horizon Europe and the European Structural and Investment Funds (ESIF) are discussed.

### BUT WHAT IS THE ROLE OF UNIVERSITIES OF SCIENCE & TECHNOLOGY (S&T) IN RII?

Our General Assembly and Board of Directors found it important that we make our role clear and voice heard in RII. We thus published a:

- [Statement on LTS RI](#) on 9<sup>th</sup> December 2016;
- [Statement on the Shaping of the EOSC](#) on 24<sup>th</sup> January 2018;
- [Statement on Innovation Infrastructures](#) on 18<sup>th</sup> March 2018.

Since spring 2017, our Task Force Research & Innovation Infrastructures has analysed the role of universities of S&T in RII and the challenges they are confronted with. During CAM 2018 in Bucharest, it will present its results under the theme:

### ENGINES OF EXCELLENCE, TALENT AND INNOVATION

CAM 2018 will offer an attractive range and programme of events, including:

- [seven workshops from our task forces](#) on 17<sup>th</sup> October;
- a dedicated [workshop on tools for infrastructure management and operation at universities of S&T](#) organised by our Task Force Research & Innovation Infrastructures;
- a [conference on Engines of excellence, talent and innovation](#) on 18<sup>th</sup> October;
- [social programmes open to all participants and their spouses](#), including a visit to an excellent RII at UPB developed from ESIF;
- the [31<sup>st</sup> General Assembly](#) on 19<sup>th</sup> October;
- a [meeting with the European Commissioner for Regional Development Corina Crețu](#) for exclusively our Directors, Rectors and Presidents on 19<sup>th</sup> October in the afternoon;
- a [gala dinner hosted by the Romanian royal house](#) for our Directors, Rectors, Presidents and their spouses 19<sup>th</sup> October in the evening.

# FINAL PROGRAMME

DAY 1 WEDNESDAY, 17 <sup>TH</sup> OCTOBER 2018		
08:15 – 14:00	Registration (open to all Members) Cloakroom available for luggage and coats until 21:00	Central Library Ground floor
08:15 - 09:00	Welcome coffee (open to all Members)	Central Library Hall, 4 <sup>th</sup> floor
09:00 - 13:00	WORKSHOPS 1 (open to all Members)	Central Library
	‘Research Data Management (RDM)’ organised by Task Force Open Science	Room 2.2 2 <sup>nd</sup> floor
	‘Next Generation Metrics’ organised by Task Force Benchmark	Room 2.3 2 <sup>nd</sup> floor
	‘Tools for infrastructure management and operation at universities of S&T’ organised by Task Force Research & Innovation Infrastructures	Room 3.2 3 <sup>rd</sup> floor
	‘Recognition of Study Points and Degrees’ organised by Task Force Mobility	Room 4.3 4 <sup>th</sup> floor
13:00 - 14:00	Lunch (open to all Members and spouses)	Hall, 4 <sup>th</sup> floor
13:00 - 14:00	FAIR ‘Enhancing Student Mobility between Members’	Hall, 4 <sup>th</sup> floor
14:00 - 18:00	Social programme 1 (open to all Members and spouses) Visit to most powerful laser in the world, i.e. Extreme Light Infrastructure (ELI) Nuclear Physics on Magurele platform	Meeting point: main entrance Central Library; Return: main entrance Rectorate
14:00 - 18:00	WORKSHOPS 2 (open to all Members)	Central Library
	‘S&T in 21 <sup>st</sup> Century and Consequences for Education and Training’ organised by Task Force S&T Education for 21 <sup>st</sup> Century	Room 2.2 2 <sup>nd</sup> floor
	‘Careers of Early Academics’ organised by Task Force Human Resources	Room 2.3 2 <sup>nd</sup> floor
	‘Role of Universities of S&T in Innovation Ecosystems’ organised by Task Force Innovation	Room 3.2 3 <sup>rd</sup> floor
18:00 - 19:00	FAIR ‘Enhancing Student Mobility between Members’	Hall, 4 <sup>th</sup> floor
18:00 - 19:00	Short task force meetings (restricted to task forces) - S&T Education for the 21 <sup>st</sup> Century - Task Force Human Resources - Open Science	Room 2.2 Room 2.3 Room 3.2
19:00 - 21:00	Opening reception, including food (open to all Members and spouses)	Rectorate Building, restaurant 5 <sup>th</sup> fl.

DAY 2 THURSDAY, 18 <sup>TH</sup> OCTOBER 2018		
08:15 - 09:00	Registration (open to all Members) Cloakroom available for luggage and coats until 18:30	Central Library Ground floor
08:15 – 14:00	Welcome coffee (open to all Members)	Central Library Hall, 4 <sup>th</sup> floor
09:00 - 13:00	Social programme 2 (open to all Members and spouses) - 09:00 - 10:30 Building, use and exploitation of sustainable RIs - visit to cutting edge laboratories of UPB; - 11:00 - 12:30 Parliament House (House of People) - 12:30 – 13:00: Bucharest tour Transportation by buses	Meeting point: main entrance Central Library; Return: main entrance Rectorate
09:00 - 10:30	Presidency meeting (restricted to Presidency)	Central Library Council Room, 2 <sup>nd</sup> floor
10:30 – 11:00	Coffee break (Presidency and Board)	Central Library Hall, 2 <sup>nd</sup> floor
11:00 - 13:00	Board of Directors meeting (restricted to Board)	Central Library Council Room, 2 <sup>nd</sup> floor
13:00 - 14:00	Lunch (open to all Members and spouses)	Rectorate Building, restaurant 5 <sup>th</sup> floor
Conference on 'ENGINES OF EXCELLENCE, TALENT AND INNOVATION' 14:00 - 18:30 hours (open to all Members and spouses)		Rectorate Building, Radu Voinea Amphitheatre
14:00 - 16:00	PLENARY SESSION: Stakeholders' views Moderator: <a href="#">Ricardo Migueis</a> (Senior Advisor for Research & Innovation)	
14:00	Opening and welcome by <a href="#">Mihnea Costoiu</a> (Rector UPB)	
14:15	Research & Innovation Infrastructures boosting regional development by <a href="#">Viorel Ștefan</a> (Vice Prime Minister and interim Minister for Research and Innovation)	
14:30	Role of universities in European Action Plan on Long-Term Sustainability of Research & Innovation Infrastructures by <a href="#">Jean-David Malo</a> (Director Open Innovation and Open Science at European Commission)	
15:00	Presentation of CESAER white paper on 'Engines of Excellence, Talent and Innovation' by <a href="#">Lars Börjesson</a> (Chair Task Force Research & Innovation Infrastructures)	

15:30	Group photo	Rectorate Building, main entrance
15:50	Coffee break	Central Library 4 <sup>th</sup> floor
16:20 – 17:45	PARALLEL SESSIONS	
	Universities of S& T as engines of scientific excellence at RII Moderator: <a href="#">Karel Luyben</a> (Vice President for Research) – Keynote: Bioengineering Valley - a five-star alliance of HR and futuristic RII by <a href="#">Horia Iovu</a> (Vice-Rector UPB) – <a href="#">MAX IV/ESS</a> by <a href="#">Lars Borjesson</a> (Chalmers) – <a href="#">Quantum</a> by <a href="#">Marte Bugel</a> (TU Delft) – <a href="#">SwissFEL</a> by <a href="#">Isabel Bolliger</a> (ETH Domain)	Central Library Room 2.2 2 <sup>nd</sup> floor
	Universities of S& T as engines of talent for the 21 <sup>st</sup> century at RII Moderator: <a href="#">Jurgita Siugzdiniene</a> (Vice President for Education) – <a href="#">CEITEC</a> by <a href="#">Ondrej Hradil</a> (BUT) – <a href="#">CAMPUS</a> by <a href="#">Bogdan Ionescu</a> (UPB) – <a href="#">HUNT Biobank</a> by <a href="#">Kristian Hveem</a> (NTNU) – <a href="#">PDC</a> by <a href="#">Susanna Pehrson</a> (KTH)	Central Library Room 2.3 2 <sup>nd</sup> floor
	Universities of S& T as engines of disruptive innovation at RII Moderator: <a href="#">Wayne Kaplan</a> (Vice President for Innovation & Impact) – Keynote: Contribution of universities of S&T to ESFRI Roadmap 2020 by <a href="#">Tudor Prisecaru</a> (UPB) – <a href="#">REVERE</a> by <a href="#">Margareta Wallquis</a> (Chalmers) – <a href="#">GVPM WindTunnel</a> by <a href="#">Riccardo Bertacco</a> (PoliMi) – <a href="#">ECCSEL</a> by <a href="#">Sverre Quale</a> (NTNU)	Central Library Room 3.2 3 <sup>rd</sup> floor
17:45 - 18:00	Go back to Plenary room	
18:00 - 18:30	PLENARY SESSION: Universities' of S&T view Feedback from the parallel sessions: – <a href="#">Karel Luyben</a> (Vice President for Research) – <a href="#">Jurgita Siugzdiniene</a> (Vice President for Education) – <a href="#">Wayne Kaplan</a> (Vice President for Innovation & Impact) Concluding remarks by <a href="#">Mikael Östling</a> (Deputy President, KTH)	Rectorate building Radu Voinea Amphitheatre
18:35 – 19:15	Transport by bus to Stirbey Palace, 36 Stirbei-Voda, Buftea, Ilfov	Meeting point: Rectorate Building, main entrance
19:30 - 22:30	Conference dinner (open to all Members, spouses and guests)	
22:30	Return by bus to city centre	

DAY 3 FRIDAY, 19 <sup>TH</sup> OCTOBER 2018		
08:15 – 09:00	Registration Cloakroom available for luggage and coats until 14:00	Rectorate Building Hall AN 010
08:15 - 09:00	Welcome coffee (open to all Members)	Rectorate Building Hall AN 010
09:30 - 17:00	Social programme 3 Trip to Prahova Valley, incl. visit to Dracula Castle (open to all Members and spouses) Transportation by buses	Meeting point: main entrance Rectorate Building
09:00 - 13:00	31 <sup>st</sup> General Assembly (restricted to Delegates and Observers)	Rectorate Building Amphitheatre Radu Voinea
10:30 – 10:50	Coffee break	Rectorate Building Hall AN 010
12:40 – 13:00	UPB Anniversary - 200 years of Excellence by Mihnea Costoiu (Rector UPB) (open to all Members and spouses)	Rectorate Building Amphitheatre Radu Voinea
13:00 - 14:00	Lunch (open to all Members and spouses)	Rectorate Building, restaurant 5 <sup>th</sup> fl.
14:00 - 17:00	Meeting with Commissioner Corina Crețu (confirmed) (restricted to Board of Directors, Rectors and Presidents)	Amphitheatre Radu Voinea
18:00	Departure by bus to Gala dinner at Snagov Palace	Rectorate Building, main entrance
19:00 – 24:00	Gala dinner at Snagov Palace (restricted to Board of Directors, Rectors, Presidents and spouses)	
24:00	Return to city centre by bus	

## WORKSHOP AND FAIR DESCRIPTIONS

Below please find the background, goals, invitation to participants and programme of the seven workshops on 17<sup>th</sup> October. Please mind that the workshops 1 to 4 (morning) and 5 to 7 (afternoon) run in parallel and you can only attend maximally two workshops in total, i.e. one in the morning and one in the afternoon.

### WORKSHOP OPEN SCIENCE

#### BACKGROUND

Together with Open Innovation and Open to the World, Open Science (3O`s) constitutes the main paradigm in European research policy and is therefore also of greatest importance for the European universities of science and technology. The general trend is towards more openness and transparency of research processes, review systems and results to civil society at large. The TFOS therewith effectuates the contribution of our Members to the [European Open Science Agenda](#) from the European Commission (EC).

We will present and discuss the state of play of Research Data Management and Open Access to publications in Europe and the role for S&T universities. We will address key issues related with the criteria for universities to implement open science (OS Label) and jointly define the direction of travel for the future work on open science.

#### GOALS

1. Discuss the scope activities and deliverables in the field of RDM, aiming the publication of a white paper in the summer of 2019;
2. Discuss the draft position on the Open Science Label resulting from a broad consultation to Members;
3. To brainstorm on the way forward on open access to scientific publications following the launch of Plan S and Coalition S;

#### PARTICIPANTS

It concerns a workshop open to any representative from our Members. It might be particularly interesting to members of the following task forces:

- Open Science
- Competitive Funding
- Impact and Outreach
- Research and Innovation Infrastructures

## PROGRAMME

09:00 - 09:15	Welcome and introduction by <a href="#">Karel Luyben</a> (TU Delft)
09:15 - 10:00	Status of current work on Research Data Management by <a href="#">Angelina Kraft</a> (TIB Hannover)
10:45 - 10:45	Identifying key challenges in Research Data Management Support by <a href="#">Wilma van Wezenbeek</a> (TU Delft)
10:45 - 11:15	Coffee-break
11:15 - 11:35	Open Science Label (OS Label): criteria and implications by <a href="#">Ricardo Migueis</a> (CESAER)
11:35 - 12:15	Open Access to publications (OA): challenges and way forward by <a href="#">Pablo de Castro</a> (Strathclyde)
12:15 - 13:00	Discussion and agreement on overall work on open science, moderated by <a href="#">Karel Luyben</a> (TU Delft) and <a href="#">Wilma van Wezenbeek</a> (TU Delft) and all participants

## WORKSHOP NEXT GENERATION METRICS

### BACKGROUND

Next generation metrics in this context are not the same as 'altmetrics' although altmetrics may be part of next generation metrics. We certainly do not mean just 'more metrics' on top of existing ones. Rather, we intend to conduct a broad methodological debate on existing and new metrics for (open) science, (open) education and (open) innovation across all task forces of CESAER, judge them in terms of feasibility in different contexts and identify the suitability to serve the following purposes:

- [internal](#), such as institutional and strategic development, recruitment, assessment and rewarding of staff, and outreach and engagement;
- [interinstitutional](#), in terms of identifying best practices, benchmarking and learning amongst our Members (e.g.) Annual Member Monitor;
- [external](#), such as public policy making, branding and shaping funding instruments.

Our work on next generation metrics will have the following scope:

1. We address the differences, tensions and opportunities of [qualitative and quantitative approaches to metrics](#), including scientific excellence, peer review, cultures of quality and Advanced Qualitative Metrics (AQM).
2. We address challenges created by [conditions and contexts at the national level](#).
3. We reflect upon the [modes of implementation within universities](#), e.g. bottom-up versus top-down, centralised versus decentralised, structural versus organic organisational development, financial models, links to Human Resources (HR), disciplinary (STEM versus Science, Technology, Engineering, Arts and Mathematics - i.e. STEAM), the interdisciplinary angle and the infrastructural aspect.
4. We differentiate between the following '[sorts](#)' of indicators: 1) input-, 2) process-, 3) output- and 4) impact-related.
5. We link the indicators to one or several '[dimensions](#)' outlined above.



6. We reflect upon the 'source' and availability of data in order to be able to give a judgement on the administrative burdens involved in collecting and processing such data.
7. We start from a broad range of indicators from various sources, e.g. Knowledge Hub, OS-related documents, the work of the task forces Benchmark and Innovation, JRC manual and the Thomson & Reuters ranking on most innovative universities and [reduce the number of indicators to a limited set](#) for use within the Members and our association (Annual Member Monitor) and for use in the white paper and (political) statements to influence external parties such as the EU institutions and rankers.

The work of the team next generation metrics consists in essence of two things:

1. [conduct a broad methodological debate on metrics for \(open\) science, \(open\) education and \(open\) innovation](#) across several task forces of CESAER jointly moderated by representatives of the Task Force Benchmark on the one side and from the task forces Open Science, S&T Education for the 21<sup>st</sup> Century and Innovation for their respective field on the other;
2. [write a short and inspiring white paper \(maximally ten pages\)](#) per summer 2019; Formulating the corresponding [political statements](#) internally (such as which indicators to include in the Annual Member Monitor) or externally (such as OS-label, European University Networks) is outside of the scope of this work and team. That is why the cooperation between four task forces will help grounding such positions in the findings of the next generation metrics.

## GOALS

The goals of the workshop are to:

1. Brainstorm and discuss Advanced Qualitative Metrics (AQM);
2. Present the (preliminary) claims, conclusions and recommendations of collaborative working on the indicators for (open) science, (open) education and (open) innovation;
3. Test and enrich them in a discussion with the CESAER Members;
4. Agree on scope, outline and organisation of the White Paper.

## PARTICIPANTS

The workshop thus is open to any representative from any Member. We particularly invite members of the following task forces to join us on 17<sup>th</sup> October:

- Benchmark
- Open Science
- S&T Education for the 21<sup>st</sup> Century
- Innovation
- Competitive Funding
- Human Resources

## PROGRAMME

09:00 - 09:10	Welcome and introduction of work by <a href="#">Per-Eric Thörnström</a> (Chalmers)
09:10 - 09:45	Presentation and discussion on qualitative and quantitative approaches to metrics and Advanced Qualitative Metrics (AQM) by <a href="#">Horia Iovu</a> (UBP)
09:45 - 10:20	Presentation and discussion on indicators for (open) science by <a href="#">Thomas Eichenberger</a> (ETH Zurich)
10:20 - 10:55	Presentation and discussion on indicators for (open) education by <a href="#">Juan Garbajosa</a> (UPM)
11:25 - 12:00	Presentation and discussion on indicators for (open) innovation by <a href="#">Yvonne Kinnaird</a> (Strathclyde)
12:00 - 12:35	Discussion on scope, outline and organisation of white paper by <a href="#">Per-Eric Thörnström</a> (Chalmers)
12:35 - 13:00	Wrap-up and conclusions by <a href="#">David Bohmert</a> (CESAER)

## WORKSHOP TOOLS FOR INFRASTRUCTURE MANAGEMENT AND OPERATION AT UNIVERSITIES OF S&T

### BACKGROUND

Universities - in particular universities of science and technology - and other Research Performing Organisations (RPO) host, (co-) operate and (co-) own significant RI based at our institutions. We are active partners (operation and funding) to national and regional RI and contracting partner to many pan-European, international and global RI. Our researchers and research groups are at the forefront of the scientific case of RI: as frontier (lead) scientists and reviewers of RI and we educate, train and deliver key scientific, managerial, operational and support staff for RI. We are the employers of researchers as users, advisors and governors of RI and underline the importance of involving our faculty and us in all phases of the RI lifecycle. Universities and other RPO are key and indispensable for ensuring scientific excellence of RI, unlocking the innovation potential of RI, delivering scientific, economic, social and societal impact by RI and reaching out to society creating acceptance for RI.

However, this is not well acknowledged in both European and national research infrastructures policy and, thus, has implications on the design and implementation of funding instruments across both levels.

The Task Force Research Infrastructures has taken at hand the development of a white paper that sets the scene and illustrates the central importance of S&T universities for research infrastructures and not just the importance of research infrastructures for universities. It also presents reference tools and best-practices useful for both policy and decision makers at S&T universities, when developing and implementing research infrastructure related strategies.

## GOALS

1. Share and discuss tools and best practices for Research and Innovation Infrastructures management and operation, including strategic priority-setting, access policies and user strategies, cost-calculation models, governance models, IPR, research integrity and FAIR and secure data, human resources and monitoring and evaluation systems;
2. Present the models and importance of institutional roadmaps for universities and explore their impact for the university internally (implications for organisational change and development), as well as externally (which RIIs to develop, collaborations with other entities for their development, and relation with regional national, European and global policies and roadmaps).

## PARTICIPANTS

This workshop is open to all representatives from our Members and we encourage Members of all task forces to attend.

## PROGRAMME

09:00 - 09:15	Welcome by <a href="#">Lars Borjesson</a> (Chalmers)
09:15 - 10:45	<p>Tools for infrastructure management and operation at S&amp;T universities, moderated by <a href="#">Elke Mueller</a> (RWTH Aachen)</p> <p>Models for RI organisation in S&amp;T Universities – the CEITEC model by <a href="#">Ondrej Hradil</a> (CEITEC)</p> <p>Developing a business plan for RI – the case of ETH by <a href="#">Isabel Bolliger</a> (ETH Zurich)</p> <p>RI Tools at UPB by <a href="#">Bogdan Ionescu</a> (UPB)</p> <p>Discussion in three groups moderated by <a href="#">Elke Mueller</a> (RWTH Aachen), <a href="#">Susanna Pehrson</a> (KTH) and <a href="#">Margareta Wallquist</a> (Chalmers)</p>
10:45 - 11:15	Coffee-break
11:15 - 12:30	<p>Institutional roadmaps and S&amp;T universities strategic plans for RIIs, moderated by <a href="#">Riccardo Bertacco</a> (PoliMi)</p> <p>Institutional roadmaps at KTH and Chalmers by <a href="#">Susanna Pehrson</a> (KTH) and <a href="#">Margareta Wallquist</a> (Chalmers)</p> <p>The TU Delft Research Infrastructure Project by <a href="#">Marte Bugel</a> (TU Delft)</p> <p>Discussion in three groups moderated by <a href="#">Riccardo Bertacco</a> (PoliMi), <a href="#">Ondrej Hradil</a> (CEITEC) and <a href="#">Isabel Bolliger</a> (Lausanne)</p>
12:30 - 13:00	Setting the scene for the future by <a href="#">Lars Borjesson</a> (Chalmers)

## WORKSHOP RECOGNITION OF STUDY POINTS AND DEGREES

### BACKGROUND

In November 2017 the EC published a [Communication on Strengthening European Identity through Education and Culture](#), proposing the creation of a European Education Area, in which people can move freely to study and carry out research, improving opportunities for individuals and Europe's capacity to meet its needs for skills and competences.

One of the actions proposed to achieve this is a Council Recommendation promoting the mutual recognition of higher education qualifications/diplomas and study periods abroad. The Recommendation is currently under negotiation and invites Member States to make a political commitment to take the necessary steps to automatic recognition by 2025.

### GOALS

The goal of this workshop is to present and discuss findings and work towards clear and transparent procedures for the assessment of foreign qualifications and periods of studies, developing principles & guidelines for recognition of degrees & credits.

We will agree on follow up actions towards a paper with best practices, showing how universities of S&T deal with the recognition of qualifications and presenting principles & guidelines for recognition of degrees & credits in universities of S&T in Europe and beyond.

### PARTICIPANTS

This workshop is open to any representative from our Members. It might be particularly interesting to members of the following task forces:

- Mobility
- S&T Education for the 21<sup>st</sup> Century
- Competitive Funding
- Colleagues from TU associations

### PROGRAMME

9:00 - 9:10	Welcome and introduction by <a href="#">Ravindranathan Thampi</a> (UCD)
9:10 - 9:30	Recognition of study points and degrees by <a href="#">Ravindranathan Thampi</a> (UCD)
9:30 - 10:00	Presentations on barriers to student's mobility by <a href="#">Luciana Mihai</a> (UPB) and <a href="#">Rui Mendes</a> (IST)
10:00 - 10:45	Inter-institutional cooperation agreements and joint programmes Presentation from T.I.M.E Association by <a href="#">Gwenaëlle Guillerme</a> Eucor – The European Campus by <a href="#">Klaus Rümmele</a> (KIT) European University Networks by <a href="#">Calum MacKichan</a> (CESAER)
10:45 - 11:15	Coffee-break
11:15 - 12:45	Parallel discussion groups on recognition of study points and degrees and planning for the white paper
12:45 - 13:00	Planning for the mobility fair

## FAIR ENHANCING STUDENT MOBILITY BETWEEN MEMBERS

### BACKGROUND

Showcase your organisation and promote your international programmes to your (potential) international higher education partners within CESAER and the students of University POLITEHNICA Bucharest (UPB).

### GOALS

Gain exposure for your mobility programmes, meet key people and foster new partnerships, consolidate existing contacts, inform and guide students and researchers from UPB and staff from CESAER Members about study and research opportunities at European universities of science and technology.

### EXHIBITORS AND PARTICIPANTS

Delegates are invited to bring material and information on mobility opportunities and inter-institutional cooperation agreements and joint programmes. The fair is open to all CAM participants and UPB students.

### PROGRAMME

13:00 - 14:00	Exchange of information between delegates
14:00 – 18:00	Invitation to UPB students to collect information on mobility opportunities
18:00 – 19:00	Exchange of information between delegates

## WORKSHOP S&T IN 21<sup>ST</sup> CENTURY AND CONSEQUENCES FOR EDUCATION AND TRAINING

### BACKGROUND

European societies are changing due to the impact of new technologies and developments in the economy and in society at large. The digital transformation changes every part of engineering, science and technology in a yet unknown intensive way. Soon everybody will have access to practically infinite data, practically infinite processing power, at practically infinite speeds. There can be no doubt that higher education of science and technology is not keeping up with these rapid technological, societal and economic changes. In the 21<sup>st</sup> century, 20<sup>th</sup>-century solutions and thinking are not going to get the job done.

### GOAL

The workshop will discuss the changing needs for learning & teaching for human capital in the 21<sup>st</sup> century, promoting interdisciplinary curricula, and exploring opportunities for S&T universities to provide continuous education and professional development, and up-skilling opportunities, in line with demands of business, industry, public services and society at large.

## PARTICIPANTS

This workshop is open to any representative from our Members. It might be particularly interesting to members of the following task forces:

- S&T Education for the 21<sup>st</sup> Century
- Mobility
- S&T in the 21<sup>st</sup> Century
- Colleagues from TU associations
- Cost of STEAM Education

## PROGRAMME

14:00 - 14:15	Welcome by <a href="#">Ralph Bruder</a> (TU Darmstadt)
14:15 - 14:50	Key note talk on Science & Technology Education for the 21st Century by <a href="#">Bert van der Zwaan</a> (Utrecht University)
14:50 - 15:20	Presentation of Draft White Paper on Science & Technology Education for the 21st Century by <a href="#">Aldert Kamp</a> (TU Delft)
15:20 – 15:45	S&T for the 21st Century by <a href="#">Karel Luyben</a> (TU Delft)
15:45 - 16:15	Coffee-break
16:15-17:15	Parallel discussion groups on recommendations: <ol style="list-style-type: none"><li>1. Skillsets and mindsets for 21<sup>st</sup> century engineers</li><li>2. Pedagogical and technological innovations in education</li><li>3. Continuous/life time education: continuous upskilling and relearning</li><li>4. Educational strategy and leadership</li></ol>
17:15-18:00	Reports from the Group Discussion and Plan of Follow Up Actions

## WORKSHOP CAREERS OF EARLY RESEARCHERS

### BACKGROUND

Our Work Plan 2018-2019 set out a range of complex issues being faced by universities under the strategic themes [Research](#), [Education](#) and [Innovation & Impact](#). The strategic theme [Leadership & Sustainability](#) will support our Members' ability to deliver their ambitions and to demonstrate their successes. Universities' key challenges include, but are not limited to: safeguarding a sustainable funding base, demonstrating contribution and impact to funders and collaborators (accountability and governance), assuring gender equality and diversity, faculty workforce planning, open recruitment, age, social inclusion etc.

In essence, the challenges relate to ensuring that universities are recognised as attractive employers able to recruit the best talent as well as providing faculty with the training necessary to meet the challenges of the 21<sup>st</sup> century. The improvement of career planning and paths of early researchers (PhDs and Postdocs) is addressed during a [workshop](#) on 17<sup>th</sup> October 2018 in Bucharest and a [white paper](#) to be published by early summer 2019.

## GOALS

The goals of the workshop are to:

1. present the first outcomes and claims of the work on careers of early academics;
2. test them with the participants our Members;
3. agree scope, outline and organisation of work towards the white paper.

## PARTICIPANTS

It concerns a workshop open to any representative from our Members. It might be particularly interesting to members of the following task forces:

- Open Science
- S&T in the 21<sup>st</sup> Century
- Competitive Funding
- Benchmark
- Human Resources

## PROGRAMME

14:00 - 14:15	Welcome and introduction of work by <a href="#">Vered Behar</a> (Technion)
14:15 - 14:45	Presentation and discussion on transmission of transversal skills by <a href="#">Cecilia Järbur</a> (Chalmers)
14:45 - 15:15	Presentation and discussion on guidance to PostDocs by <a href="#">Doris Klee</a> (RWTH)
15:15 - 15:45	Presentation and discussion on inter-sectoral mobility and dual (industry-academia) career paths by <a href="#">Alexis Heede</a> (TU Berlin)
16:15 - 16:45	Presentation and brainstorm on application of next generation metrics in recruitment, career development and performance assessment of researchers moderated by <a href="#">Lorraine Bailey</a> (UCD)
16:45 - 17:15	Presentation and brainstorm on tenure track in academic career planning by <a href="#">David Bohmert</a> (CESAER)
17:15 - 17:45	Discussion and agreement on scope, outline and organisation of white paper by <a href="#">Vered Behar</a> (Technion)
17:45 - 18:00	Wrap-up and conclusions by <a href="#">David Bohmert</a> (CESAER)

## WORKSHOP ROLE OF UNIVERSITIES OF S&T IN INNOVATION ECOSYSTEMS

### BACKGROUND

In order to create the conditions in which Universities of science and technology can successfully carry out their Third Mission, our Universities are developing a new role of orchestrating and linking regional innovation ecosystems, as well as finding new ways to develop innovation and entrepreneurial talent. Task Force Innovation has developed two in-depth consultations to our Members, on their role in their specific innovation ecosystem and on how they promote entrepreneurial mind-sets and train the innovators of the future. This will help us maximize opportunities in Horizon Europe and at national level, and also supports the sharing of excellent practice across our network,



A [white paper](#) has been written on the basis of desk research, results of the surveys conducted and inputs of all the Members of the Task Force Innovation. Nine [case studies](#) were developed by Member universities across Europe, drawing together examples of the ways they support innovation. These case studies cover a broad spectrum of examples, from different parts of Europe and reflect the diverse regional and national contexts in which our universities contribute to more and better innovation, the support of new business and industry, the development of new entrepreneurial and innovative talent, attraction of foreign direct investment and the economic competitiveness of our regions.

The authors of the white paper and contributors of case studies, will present the key findings and examples of how science and technology universities are actively contributing to drive forward innovation in their regions. Good practices and success stories will be shared, but also the obstacles and difficulties.

## GOALS

1. Present the conclusions and key messages of the [White Paper](#) on the Role of Universities in Innovation Ecosystems, while also showcasing and sharing best practice [case studies](#) from around Europe;
2. Contribute to thinking on the design of the next generation of funding instruments at European level, and aid understanding of what can and should be done at national and regional level governments. We also engage with the JRC to see how assessment of universities roles in regional innovation systems could be made.
3. Highlight and discuss future priorities in the 2018-2019 work plan of Task Force Innovation. These include: Initiating the discussion on best-practice collaboration models between academia and industry; Presenting and kick-starting a study on intellectual property management at universities of science and technology and, signalling a major CESAER Academia – Industry Conference planned for March 2019.

## PARTICIPANTS

It concerns a workshop open to any representative from our Members. It might be particularly interesting to members of the following task forces:

- Competitive Funding
- Impact and Outreach
- Benchmark
- Open Science
- Research and Innovation Infrastructures

## PROGRAMME

14:00 - 14:10	Welcome by <a href="#">Tim Bedford</a> (Strathclyde)
14:10 - 15:45	<p>Role of universities in innovation ecosystems: presentation of white paper and case studies moderated by <a href="#">Yvonne Kinnaird</a> (Strathclyde)</p> <p>Overview by <a href="#">Emilio Paolucci</a> (PoliTo)</p> <p>Case Studies:</p> <p>Universidad Polit�cnica de Catalunya (UPC) by <a href="#">Esther Real</a> (Researcher and Professor, Department of Civil and Environmental Engineering)</p> <p>RWTH Aachen University (RWTH Aachen) by <a href="#">Elke Muller</a> (Director, Research and Careers, RWTH Aachen)</p> <p>Delft University of Technology (TU Delft) by <a href="#">Servaas Duterloo</a> (Head of EU Research Funding and International Programmes)</p> <p>Norwegian University of Science and Technology (NTNU) by <a href="#">Solvi Silset</a> (Senior Advisor, Innovation)</p>
15:45 - 16:15	Coffee-break
16:15 - 17:40	<p>Round table: towards innovation ecosystems supportive policy moderated by <a href="#">Tim Bedford</a> (Strathclyde)</p> <p>Assessing universities in innovation ecosystems by <a href="#">Milena Slavcheva</a> (Joint Research Centre)</p> <p>National systems of innovation and their impact on universities:</p> <p>Netherlands, a view from Delft University of Technology (TU Delft) by <a href="#">Servaas Duterloo</a> (Head of EU Research Funding and International Programmes)</p> <p>Portugal, a view from Instituto Superior T�cnico (IST) by <a href="#">Luis Caldas de Oliveira</a> (Vice President for Corporate Relations and Entrepreneurship)</p> <p>Russia, a view from Tomsk Polytechnic University (TPU) by <a href="#">Liliya Kiryanova</a> (Vice-Rector for External Affairs)</p> <p>Finland, a view from Aalto University (Aalto) by <a href="#">Antti Saaristo</a> (Senior Advisor, Leadership Support Services)</p> <p>Ireland, a view from University College Dublin (UCD) by <a href="#">Vincent Hargarden</a> (Assistant Professor in Engineering Management)</p>
17:40 - 18:00	Setting the scene for future work by <a href="#">Tim Bedford</a> (Strathclyde) and <a href="#">Christine Ahrend</a> (TU Berlin)

## LOCATION AND LOGISTICS

### HENRI COANDA INTERNATIONAL AIRPORT

Bucharest has reasonable connections with most European capitals and with the largest cities in Romania.

International flights arrive at Henri Coanda international airport (Otopeni), the biggest airport in Romania, located about 19 km (12 miles) north of Bucharest's downtown.

For the list of airlines that serve Henri Coanda international airport, please click [here](#).

### TRANSPORTATION BETWEEN BUCHAREST AIRPORT AND CITY CENTRE

#### BY BUS

[Express Bus 783](#) offers daily service to the city center, with stops at Baneasa airport, Piata Presei Libere, Piata Victoriei, Piata Romana, Piata Universitatii and Piata Unirii. This line runs day and night. The bus leaves every 15 minutes during the day and every 40 minutes during the night. The journey to downtown takes approximately 40 minutes. Fare is 7 Lei (about €1.8) for a round-trip ticket.

#### BY TAXI

Only licensed taxi companies are allowed in the airport. Fare to downtown Bucharest is about €15. The fee per km for trips from the airport is starting from 1.4 Lei to 3.30 Lei (€0.3 to 0.9/km).

#### BY TRAIN

[Henri Coandă Express](#) trains provide connection between Bucharest Henri Coandă International Airport and Bucharest North Railway Station. The passengers transfer between CFR 'Airport Stop' and the airport passengers' terminals are provided by buses whose schedule is synchronised with the trains schedule. The tickets are valid both for the train and for the transfer bus, the price being of 6.8 Lei (€1.5) per ticket.

For more information regarding the transport in Bucharest please visit the websites below:



<http://www.bucharestairports.ro/en/transport/taxi>



<http://romaniatourism.com/transportation.html>

## VENUE

Meetings and workshops of the CAM 2018 will be held in the [Central Library](#) and [Conference Center](#).

The address for both buildings is University POLITEHNICA of Bucharest, 313, Splaiul Independentei, sector 6. Clear signage will direct you and student helpers will guide participants to the rooms.

The [Conference Center - the UPB AULA](#) is a construction that consists of a single volume which comprises the basement, ground floor and two upper floors. The main conference hall represents the core of the centre, all other spaces being designed around it. The basement has direct access from the outside.



[UPB Conference Center](#)

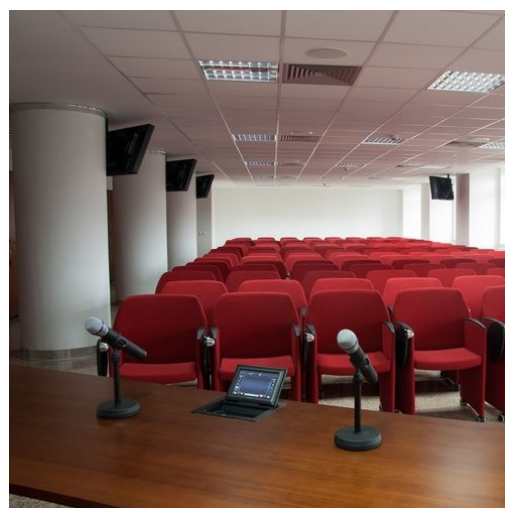
Complementary, University POLITEHNICA of Bucharest has a [Central Library](#) located near the centre of the university.



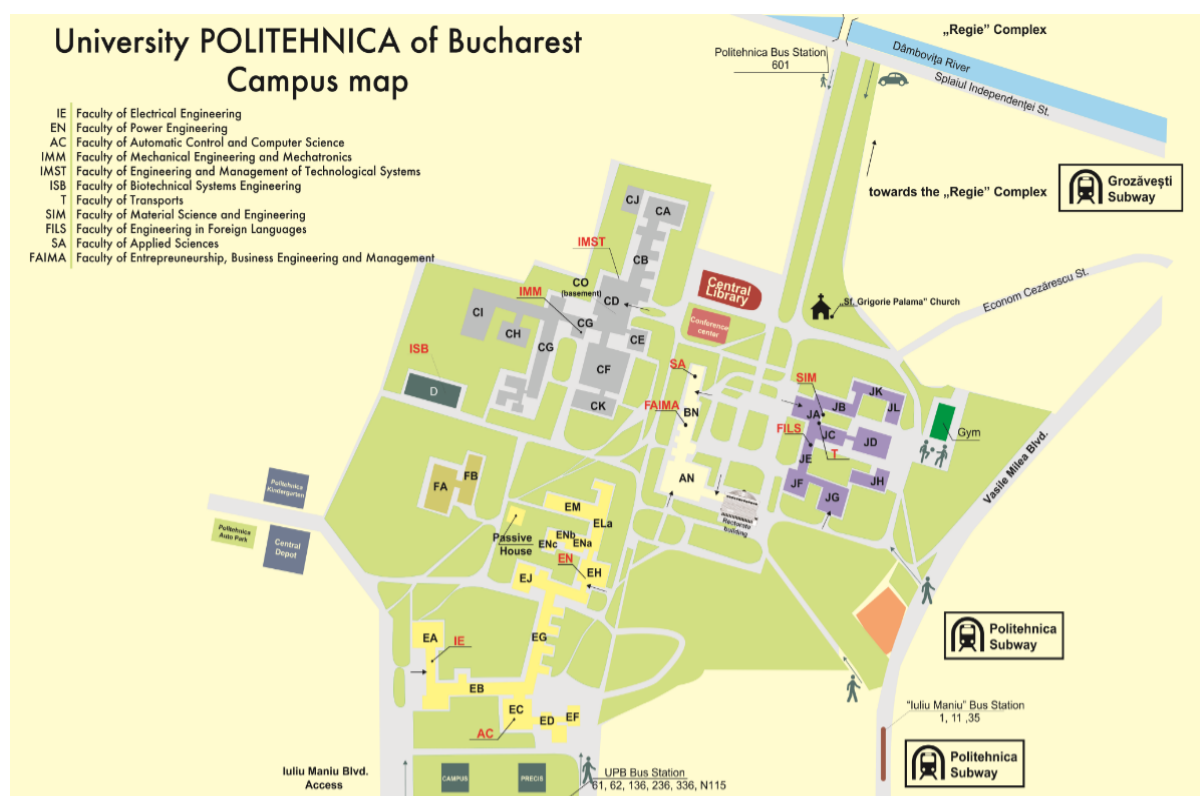
[Main entrance to Central Library](#)



Central Library of UPB



Conference room in UPB Central Library




University POLITEHNICA of Bucharest Campus Map

## ACCOMMODATION

Block reservations for participants and accompanying guests have been made at special rates in hotels of different categories for the period of the CAM. Hotels are to be booked by the participant directly on a first-come, first-served basis.

Information on accommodation is available on [our website](#). A map indicating the location of the hotels is also available [through this link](#).

## CONTACT INFORMATION

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