Title of Paper in English Language (this cover page in English is required only for submissions in Spanish or Portuguese)

Rui M. Lima1, Valquíria Villas-Boas2, André Luiz Aquere3, João Mello da Silva4

1 Department of Production and Systems, School of Engineering, University of Minho, Guimarães, Portugal

2 University of Caxias do Sul, Caxias do Sul, Brazil

3 Department of Civil and Environmental Engineering, Faculty of Technology, University of Brasília, Brasília, Brazil

4 Department of Production Engineering, Faculty of Technology, University of Brasília, Brasília, Brazil

Email: rml@dps.uminho.pt, vvillasboas@gmail.com, andre@unb.br, joaomello@unb.br

**Abstract**

This document should be used as a template for the papers submitted to PAEE/ALE’2018. It provides the intended general structure and format, as well as other relevant information. Please read the template contents carefully and follow the instructions. In order to preserve the styles and other formatting elements, copy your text into this template. Papers can be written in English, Spanish or Portuguese. Papers written in Spanish or Portuguese are welcome for PAEE and must have a cover page in English (includes title, authors, affiliation, abstract and keywords), followed by the full paper written in Spanish or Portuguese, respectively (next pages). Papers written in English must exclude the cover page. The abstract should not exceed 300 words, followed by two to four keywords. The full paper is expected to have six to eight pages (excluding the cover page).

**Keywords:** Active Learning; Engineering Education; Symposium Information; Project Approaches.

Title of Paper in English, Spanish or Portuguese Language

Rui M. Lima1, Valquíria Villas-Boas2, André Luiz Aquere3, João Mello da Silva4

1 Department of Production and Systems, School of Engineering, University of Minho, Guimarães, Portugal

2 University of Caxias do Sul, Caxias do Sul, Brazil

3 Department of Civil and Environmental Engineering, Faculty of Technology, University of Brasília, Brasília, Brazil

4 Department of Production Engineering, Faculty of Technology, University of Brasília, Brasília, Brazil

Email: rml@dps.uminho.pt, vvillasboas@gmail.com, andre@unb.br, joaomello@unb.br

**Abstract**

This document should be used as a template for the papers submitted to PAEE/ALE’2018. It provides the intended general structure and format, as well as other relevant information. Please read the template contents carefully and follow the instructions. In order to preserve the styles and other formatting elements, copy your text into this template. Papers can be written in English, Spanish or Portuguese. Papers written in Spanish or Portuguese are welcome for PAEE and must have a cover page in English (includes title, authors, affiliation, abstract and keywords), followed by the full paper written in Spanish or Portuguese, respectively (next pages). Papers written in English must exclude the cover page. The abstract should not exceed 300 words, followed by two to four keywords. The full paper is expected to have six to eight pages (excluding the cover page).

**Keywords:** Active Learning; Engineering Education; Symposium Information; Project Approaches.

# Introduction

This document is to be used as a template for the paper. It gives information on its general structure and format and uses general information on the symposium to explain that. Save this document and copy your own text into this template. The paper can be written in English, Portuguese or Spanish.

The demand for engineering professionals is characterised by requirements of deep and solid interdisciplinary technical competences and communication and management skills. Changing Engineering programmes ([Graaff & Kolmos, 2007](#_ENREF_4)) to meet these requirements can be addressed by different active learning approaches ([Christie & de Graaff, 2017](#_ENREF_1); [Lima, Andersson, & Saalman, 2017](#_ENREF_6)). Several institutions of higher education have been addressing these requirements with project approaches to engineering education. Problem and Project-Based Learning approaches ([Edström & Kolmos, 2014](#_ENREF_2); [Graaff & Kolmos, 2003](#_ENREF_3); [Helle, Tynjälä, & Olkinuora, 2006](#_ENREF_5)) have proven to be effective in making interdisciplinary connections between different subject matters, developing, in parallel, competences of project management, autonomy and communication ([Lima, Dinis-Carvalho, Flores, & Hattum-Janssen, 2007](#_ENREF_7); [Powell & Weenk, 2003](#_ENREF_8)).

This event joins together the 9th International Symposium on Project Approaches in Engineering Education (PAEE'2018) and the 15th Active Learning in Engineering Education Workshop (ALE'2018). The PAEE symposium is organised by the PAEE association and the Department of Production and Systems of the University of Minho, Guimarães, Portugal, since 2009, and aims to join teachers, researchers and professionals concerned with Engineering Education. ALE is an international network of engineering educators, initiated in 2000, dedicated to improving engineering education through active learning.

The PAEE/ALE’2018 is hosted by the University of Brasília (UnB) and will take place at the Faculty of Technology of the University of Brasília (Figure 1), Brasília, Brazil. The main language of the Symposium is English. Paper submissions in Spanish and Portuguese are also welcome. More information can be found at the website: <http://paeeale.unb.br>.

 

Figure 1. An image of the National Museum (left) and of the University of Brasília (right), Brasília, Brazil.

# Scope

This symposium will be based on different types of interaction approaches, namely: (i) paper sessions (regular sessions, debate sessions and students paper award), (ii) hands-on sessions (ALE), (iii) workshops and (iv) interactive poster session. On paper sessions, debate sessions and students award, participants can share their work and proposals. The hands-on sessions and workshops involve small groups working as “project teams” and enable for extensive discussions and exchange of experiences with international experts.

The main language of the Symposium is English, but papers can be submitted in Spanish and Portuguese as well.

## Symposium organisation model

The following themes are proposed, but PAEE/ALE’2018 is open to suggestions for other topics related to project approaches in engineering education:

* Innovative experiences in engineering education
* Curriculum design
* Interdisciplinary
* Implementation of pedagogic changes
* Teacher and tutor roles in PBL
* Teamwork in PBL
* Development and assessment of competences
* Diversity in Engineering students
* Basic sciences in engineering education
* Student engagement in learning
* Student assessment in PBL
* Project management in engineering education
* Active Learning and ICT support
* Serious games
* Education for sustainability
* University-Business Cooperation
* Workspaces for Active Learning
* Evaluating PBL and Active Learning
* Research on PBL and Active Learning

The programme diversity, in terms of interaction approaches and addressed themes, make the PAEE/ALE’2018 a platform for those who wish to share and learn more about active learning and project oriented approaches to teaching/learning of engineering.

## Milestones – important dates

The symposium has the milestones indicated in Table 1. Please note that the tables should be formatted as below, without vertical borders.

Table 1. Milestones – important dates.

|  |  |  |
| --- | --- | --- |
| Start Date | End Date | Milestones |
| 15-07-2017 | 15-08-2017 | Abstract Submissions |
| 16-08-2017 | 14-09-2017 | Abstract Notification |
| 15-09-2017 | 15-10-2017 | Full Submissions |
| 16-10-2017 | 14-11-2017 | Submission Notification (Reviewers Comments) |
| 15-11-2017 | 20-12-2017 | Final Submissions |
| 16-11-2017 | 20-01-2018 | Early Bird Registration |
| 28-02-2018 | 02-03-2018 | Event |

# Target Stakeholders

PAEE/ALE’2018 Symposium aims to engage teachers, researchers on Engineering Education, deans of Engineering Schools and professionals concerned with Engineering Education in the discussion of Active Learning and Project Approaches in Engineering Education through active workshops and presentations of current practice and research in this field.

# Information for Participants

This section has information relevant for participants in terms of: (i) web platform registration, (ii) symposium registration and (iii) instructions for authors.

## Web Platform Registration

Web platform registration is free and does not necessarily require a symposium registration. All participants should register at the Easychair platform (<https://easychair.org/conferences/?conf=paeeale2018>) in order to get a login and password to have access to the reserved areas. Different roles will be assigned to participants, authors, reviewers and organisation members. Abstracts and papers must be submitted using the symposium web platform. Please register on the web platform to submit abstracts/papers.

## Symposium Registration

Symposium registration is compulsory for PAEE/ALE’2018 participants. The deadline for payment of the early bird registration fee is January 20, 2018. Papers will only be published after registration and payment of the registration fee. At least one of the authors is required to register and present the paper.

Please find more information on symposium registration and payment on the joint conference website (<http://paeeale.unb.br>). Participants not presenting a paper are also welcome to PAEE/ALE’2018.

## Instructions for Authors

Papers submitted to the symposium must be in accordance with this document, which should be used as a template by the authors. Papers are required to have a minimum of six pages and a maximum of eight pages (excluding the cover page).

This document is in accordance with the following general rules:

* Document file must be in Microsoft Word format applying the styles used in this template.
* Page layout in A4 size with one column text format.
* Entire document written using “Segoe UI” text font.
* Left and right margins of 2 cm; top and bottom margins of 2.5 cm.
* Word style “Normal”: Body text with “Segoe UI” text font size 10, single line spacing, justified, spacing after paragraph 6 pts.
* Word style “Head Title”: Title using “Segoe UI” text font, bold, size 16, left aligned.
* Word style “Authors”: Author information with “Segoe UI Light” text font, bold, size 10, left aligned.
* Word styles “affiliation” and “email”: Affiliation and email addresses with “Segoe UI” text font, size 8, left aligned.
* Word style “Heading 1”: First level section titles with “Segoe UI” text font, bold, size 14, distance before paragraph of 24 pts and hanging indent of 0.76 pts.
* Word style “Heading 2”: Second level section titles with “Segoe UI” text font, bold, size 12, distance before paragraph of 10 pts and hanging indent of 1.02 pts.
* Word style “Heading 3”: Third level section titles with “Segoe UI” text font, bold, size 10, distance before paragraph of 10 pts and hanging indent of 1.27 pts.
* Do not use section titles of level 4 and more.
* Do not use footnotes.
* Figure and table captions with “Segoe UI” text font, size 9. Figures and Tables are left aligned.
* References use APA style:
	+ Cross reference has “author (year)” or (author, year).
	+ Reference list sorted by last name.

Please follow the standards above to format your document, including word styles. **Copy your text into this template, in order to comply with the standards**.

# Conclusion

This document is a quick reference guide for submission of full papers. It also gives some information about the symposium in general. If you have any further question, do not hesitate to contact the organising committee at paeeale@unb.br or paee@dps.uminho.pt.

# References

Christie, M., & de Graaff, E. (2017). The philosophical and pedagogical underpinnings of Active Learning in Engineering Education. *European Journal of Engineering Education, 42*(1), 5-16. doi:10.1080/03043797.2016.1254160

Edström, K., & Kolmos, A. (2014). PBL and CDIO: complementary models for engineering education development. *European Journal of Engineering Education, 39*(5), 539-555. doi:10.1080/03043797.2014.895703

Graaff, E. d., & Kolmos, A. (2003). Characteristics of Problem–Based Learning. *International Journal of Engineering Education, 19*(5), 657-662.

Graaff, E. d., & Kolmos, A. (Eds.). (2007). *Management of Change: Implementation of Problem-Based and Project-Based Learning in Engineering*. Roterdam: Sense Publishers.

Helle, L., Tynjälä, P., & Olkinuora, E. (2006). Project-Based Learning in Post-Secondary Education - Theory, Practice and Rubber Sling Shots. *Higher Education, 51*(2), 287-314.

Lima, R. M., Andersson, P. H., & Saalman, E. (2017). Active Learning in Engineering Education: a (re)introduction. *European Journal of Engineering Education, 42*(1), 1-4. doi:10.1080/03043797.2016.1254161

Lima, R. M., Dinis-Carvalho, J., Flores, M. A., & Hattum-Janssen, N. v. (2007). A case study on project led education in engineering: students' and teachers' perceptions. *European Journal of Engineering Education, 32*(3), 337 - 347.

Powell, P. C., & Weenk, W. (2003). *Project-Led Engineering Education*. Utrecht: Lemma.