PDEng position at ASPARi - Designing Course Materials for Road Construction Education at the MBO level

Specifications

Location:	University of Twente – Enschede
Faculty:	CTW
Chair:	CME
Function type:	PDEng position
Scientific field:	Civil Engineering
Prior education:	MSc in Educational Science and Technology, Civil Engineering or a related discipline
Hours:	40 hours per week
Salary:	€ 1.715 gross per month
Starting date:	ASAP
About employer:	http://www.aspari.nl and www.utwente.nl
Project leader:	Dr. S.R. Miller

Would you like to be part of designing and developing new, exciting, innovative, technology-driven course materials for students in the Road Construction sector? Are you interested in high-end technology? Then, the Professional Doctorate in Engineering (PDEng) programme may be interesting for you.

The PDEng is a 2-year post Master Degree technological designers programme. This programme at the University of Twente contains an educational part that will be followed at the University, and a design project that will be carried out collaboratively at educational institutions, ASPARi network companies and other relevant professional organisations. The educational programme will have an in-depth and broadening character with ample attention for professional development. High level, creative and innovative course materials will be designed in collaboration with MBO educational institutions, Dutch knowledge centres and contractors aligned to the ASPARi network.

The Challenge

ASPARi's collaborative research efforts with several of the leading construction companies in the Netherlands highlights several issues. Firstly, it highlights the complexity of the challenges facing construction companies if they are to improve process control, have better control over the planning and scheduling of resources and work, and thereby reach the required levels of quality required for dealing with performance contracts and longer guarantee periods. Secondly, the research outcomes reflect the current needs of the construction industry. The combination of an appropriate research methodology, explicit data, opportunities for reflection and extensive collaboration between asphalt construction teams, technologists, management and researchers provides external validity and confirmation that the learning is relevant and current. More importantly for education, they highlight several gaps in learning, knowledge, skills and attributes that are needed to deal with changing "rules of the game" for construction companies. Thirdly, the introduction of new technologies such as GPS, infrared, laser and other sensor technologies in road construction, highlights the need to change current curricula.

Two questions then arise: (1) What learning, knowledge, skills and attributes should graduates have to be able to deal with these rather challenging changing circumstances? (2) Which course materials should be developed for instruction at the MBO level to ensure that the current workforce is able to cope with the demands of a rapidly changing and technology-rich construction industry

The mission of this design project is to:

"Develop innovative course materials for Road Construction Education at the MBO level"

The overall purpose is to develop innovative course and instructional materials for a Road Construction course. The main outcomes are:

- Analysing typical construction projects to develop related case studies for educational purposes. Typical examples are – the construction of freeways, provincial roads, ring roads, local streets, roundabouts, cycle paths and road crossings
- Identifying and developing work tasks from the case studies that clearly differentiates levels of responsibility required and the educational needs for the level of responsibility
- Differentiating tasks on the basis of time-frames (the time required for operational, tactical and strategic planning – daily, weekly, etc.)
- Matching tasks and levels of responsibility with work functions
- Designing and developing lecturer and student online tools for the developed course and instructional materials

During the educational part of the programme, you will receive a customised education package consisting of among others, courses in road design and construction, developing online course materials, instructional strategies and the use of visualisation and simulation for education.

Our offer

We offer a full-time contract for 24 months with a salary of € 1715 per month. During these two years you follow a tailor made post-master design programme with a combination of education (50%) and working on a design project (50%). Also, the University of Twente provides excellent facilities for professional and personal development, a holiday allowance and an end-of-year bonus. On successfully completing the programme, you will receive a certified and recognized degree. You will be entitled to use the academic degree Professional Doctorate in Engineering (PDEng) and will be registered as a Technological Designer in the Dutch register kept by the Royal Institution of Engineers in the Netherlands (KIVINIRIA).

Candidate profile

We are searching for the best MSc graduated candidates with a demonstrable affinity with design and multidisciplinary assignments. Besides, you must have the ambition and talent to accelerate in finding innovative educational solutions for a rather traditional, largely work experience based road construction industry. Important professional skills are Dutch and English language skills, communication and interpersonal skills, teamwork, initiative and self-reflection. Prior knowledge in curriculum development, innovation and implementation, and teaching and learning with ICT will be helpful to successfully complete the project, but can also be part of the educational program. An interview will be part of the selection procedure.

Information and application

If you have any further questions about this vacancy of the PDEng programme in Civil Engineering, please contact Dr. Miller at s.r.miller@utwente.nl or telephone: +31 53 489 5886. General information about PDEng programmes you can find at http://www.utwente.nl/pdeng/ or http://www.utwente.nl/pdeng/en/

Please send your application, with a curriculum vitae, a list with grades of courses attended, references and, if applicable, a list of publications through the link http://www.utwente.nl/vacatures/intern/vacatures_intern/