Project information Software Technology program

The Professional Doctorate in Engineering (PDEng) degree program Software Technology (aka OOTI), provided by the Department of Mathematics and Computer Science of Eindhoven University of Technology in the context of the 3TU.School for Technological Design - Stan Ackermans Institute, is a 2 year post master education and training program in advanced software engineering with a strong emphasis on the design and development of software for resource constrained software intensive systems such as real time, embedded or distributed systems.

As part of their education and training program, our trainees have to participate in an industrial design and development project for a period of 9 months. Such a project is a fixed date, fixed price project. In order to support a high quality software engineering process and product, this brief memo defines a number of general rules and guidelines.

When you are interested in contracting an industrial design and development project to the Software Technology program, please read the information in this brief, and contact us for the project proposal form or a personal meeting to discuss your options.

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Proposal Requirements

For a project proposal to be considered it should fulfill the quality criteria of the Software Technology program:

1. The project must fit with the focus of the program, i.e. the design and development of software (for resource constrained software intensive systems).

2. The project must be innovative and challenging.

3. The project must comprise a substantial part of the software development lifecycle (e.g. requirements engineering, specification, architecting, design, implementation, and testing).

4. The project has to be conducted by a team. This can either be a team of at least two trainees or a combination of a trainee with a company team.

5. The company has to provide sufficient coaching for our trainee(s). As a rule of thumb, the company coach should be able and willing to spend at least 2 hours per week with the trainee(s).

6. The company must use state-of-the-art development methods and development tools.

7. The company must be willing to contribute to funding* this project accordingly for the period of nine months.

8. When a company wants to have the project conducted outside The Netherlands, the company must be willing to provide 50% of the expenses for the university project supervisor to visit the actual project site at least one time.

9. The project proposal has to be submitted in time. Proposals for the project period January 5, 2015, until October 1, 2015, have to be submitted to our project office before October 11, 2014.

Project Allocation

The management team reviews the submitted project proposals with respect to the above criteria and selects a number of projects. If there are more suitable projects than trainees, the management team selects the project proposals according to the following priority rules:

1. Projects that are related to application areas that are considered as strategically important by the management team.

2. Projects that continue or build on earlier successful projects. In this way continuity is achieved with respect to the domains and projects the Software Technology program is involved in, to the project-specific knowledge of the university supervisor, and to the relationship with companies.

3. Projects that are acquired and co-initiated by the trainees themselves. This rule is a means to acknowledge the initiative and motivation of our trainees. For these projects the same criteria apply.

4. Projects that are initiated by trainees and research groups of the department of Mathematics and Computer Science, as part of the PDEng-PhD curriculum. For these projects the same criteria apply.

The selected projects will then be offered to the trainees of the Software Technology program who will start their industrial design and development project formally on January 5, 2015. A starting date in December 2014 is negotiable. The companies whose projects have been selected may be requested to present their project proposal(s) in more detail to the group of trainees.

Based upon the trainee's preferences, selection and/or introduction interviews are scheduled. After the various selection interviews, the companies can indicate the (selection of) trainee(s) that are considered the best match for the project. After consultation with the trainees, the program management will determine the final allocations.

* The costs are based on a public private collaboration and in accordance with the university's certified general management and accountancy principles. The costs include the participation of senior staff members of the Department of Mathematics and Computer Science of Eindhoven University of Technology as project supervisor providing basic project consultancy. For information on these costs, please contact us.
Project Roles and Responsibilities

Industrial Partner
During an industrial design and development project, the respective company is expected to provide:

- A project manager to monitor and control the progress and quality of the design and development process and the resulting products. The project manager is also to provide regular feedback to the operational manager of the Software Technology program on the status of the project and on the quality of the work of the respective trainee(s).
- A project mentor to provide sufficient domain knowledge and skills to support the trainee(s) during their final project. We expect a project mentor to be available for at least 2 hours per week.
- The project manager and the project mentor participate in the various activities and meetings in accordance with the design and development process described in the project management document.
- The project manager and/or the project mentor have to participate in a project evaluation and reflection meeting at the end of the project.
- The integration of the trainees in a project team, if relevant.
- The necessary facilities including an appropriate working environment with all necessary hardware, software, and literature.
- The project manager and/or the project mentor may be requested to address the trainee(s) during the graduation ceremonies.

Eindhoven University of Technology
During an industrial design and development project, the Department of Mathematics and Computer Science of Eindhoven University of Technology provides a project supervisor who has the following responsibilities:

- Monitor and control the quality and progress of the project and the resulting products.
- Provide regular feedback to the operational manager of the Software Technology program on the status of the project and on the quality of the work of the respective trainee(s).
- Support the trainees with (references to) relevant domain knowledge and relevant colleagues.
- Participate in the various project-related activities and meetings in accordance with the design and development process described in the project management document.
- Review the project report with respect to the technical and academic contents.
- Assess the results of the project as described below.
- The project supervisors have to participate in the evaluation and reflection meeting at the end of the project.
- The project supervisors have to address their trainees during the graduation ceremonies.

Trainees
During an industrial design and development project, trainees should exhibit a professional and goal directed attitude:

- They are expected to proactively employ project and risk management.
- They have to compose and maintain their Project Management Document including a risk management section.
- They have to initiate and manage the required progress, project and review meetings.
- They have to regularly reflect upon the quality and the progress of their project and to modify the Project Management Document according to the deployed design and development process.
- They have to submit the documents that are necessary for the various project related meetings in time, in order to allow their supervisors to read them carefully.
- They have to compose a project report conform to the rules of the university.
- They have to arrange the various project related presentations in time.
- They have to arrange that the texts for the project booklets are reviewed and approved by the respective project manager or the project mentor(s) and the project supervisor. The approved versions should then be sent to the operational manager for a final review.
- They have to send announcements of their project presentations at least three weeks before their presentation to the management assistant.
- They have to arrange the request for the ISBN in time.
- They have to deliver a project report that was accepted by the project manager, the project mentors and the project supervisor at least one week before the presentation.
- They have to deliver a reflection document at least one week before the project retrospective.
**Project Assessment**

The results of the industrial design and development project are to be assessed by the project supervisors during the project evaluation and reflection meeting. The following aspects should be taken into account:

- **Product:** Can the resulting product be considered to be of high quality? Is it well designed? Is it well documented? Were the trainees sufficiently creative? Were they sufficiently critical? Did they fulfill the original project assignment?
- **Process:** Was the product developed according to a well-defined process? How did the trainees deal with changes? Did the trainees exhibit self-management? Did they take sufficient initiative?
- **Teamwork:** How did the trainee(s) cooperate with their peers, their supervisors, and their environment? Did the trainee(s) follow-up on agreements?
- **Project Report and Project Presentation:** What is the quality of the technical project report? Does it comply with the requirements as described above? What was the quality of the presentation?

All of these aspects should have approximately the same weight.

**Trainee status during in-company project**

During an industrial design and development project, the trainee remains an employee of the Eindhoven University of Technology. During a final project the trainee can use 15 holidays, exclusive the national holidays as applied by the company. For the use of holidays he/she needs the permission of the company manager and/or supervisor, and the program director.

During the final project 4 Come Back Days are organized during which the trainees present their experiences.