Technion, Computer Science Faculty  Updated: January 22, 2014

Industrial Project (234313)
Guidelines

Objectives

To provide students with:

1. Hands-on experience in performing a software project of modest size derived from a real-world industrial need.
2. Experience with the software development cycle.
3. Exposure to modern software development tools and technologies.

To provide industry with:

1. Opportunity to test ideas and build prototypes.
2. Exposure to CS students for fresh ideas and future employment.

Framework

- Team of two students, each investing approximately 120 hours over one semester (14 weeks), supervised by a qualified engineer/scientist.
- Course worth 3 academic credits.
- Work may be performed in any Technion lab, or in company/home, as agreed between students and supervisor.
- Periodic monitoring by academic coordinator.
- Course grade determined by academic coordinator in consultation with industrial supervisor.
- Industrial supervisors expected to meet students every two weeks on the average, and interact regularly by phone/email.

Formal Requirements

Three formal meetings during the project duration, with participation of students, industrial supervisor and academic coordinator, as follows:

Course Schedule

Interviews Day **(beginning of the semester)**

Participants

All the students who wants to do a project with the industry and all the supervisors.

Objective

1. To allow the supervisors to get to know the students that wants to participate in their project.
2. To allow the students to hear more about the projects and to get to know the supervisors.

Agenda

Each team (2 students) will have a 15 minutes meeting with each of the 3 projects they were interested in.
At the end, the students will rank the projects and the supervisors will rank the students.
Then, we will match the teams to project base on those ranks.

Kickoff Meeting **(a week after the interviews day)**

Participants

Both students and supervisors.

Objective

To make sure that the team has a clear understanding and concrete work plan for the project.

Agenda

Student presentation (8 slides max, approved by industrial supervisor) summarizing:

1. Goals (main project objective)
2. Scope (**what** is and is not to be done?)
3. Methodology (**how** is it to be done?)
4. Milestones (**when** is it to be done, especially what we can expect to see already at the Midway meeting?)
5. Development environment (languages, tools, IDE, special h/w and s/w)
6. Significant risks (can the project get stuck on anything?)
7. Deliverables (what will we get at the end?)

Midway Meeting **(the middle of the semester)**

Participants

Both students and supervisors.

Objective

To make sure that the project is progressing on schedule and/or identify possible obstacles or deviations from the work plan.

Agenda

- Student presentation (6 slides max, approved by industrial supervisor) summarizing:
    1. Milestones achieved
    2. Conclusions so far
    3. Revised work plan towards delivery
- Live demonstration of software/results so far

Final Meeting **(the last week of the semester)**

Participants

Both students and supervisors.

Objective

To make sure that the team has completed the project satisfactorily.

Agenda

- Live demonstration of deliverables.
- Student presentation (20 slides max, approved by industrial supervisor) summarizing:
    - Team
    - Goals
    - Methodology
    - Achievements
    - Examples
    - Conclusions

Submission of Deliverables **(two weeks after the final meeting)**

Supervisors Deliverables

1. A user manual - information for usage of software by end-user.
2. A developer manual - information on the software design and structure so that development can be continued if necessary.
3. The software

Course Stuff Deliverables

1. A final report in the form of Mini-website (20 pages max in linked HTML) that presents the project to the public.
2. Representative image for course Web site (logo).

Project grade submitted only after all materials (software + documentation) have been delivered and approved by the academic coordinator and industrial supervisor.

Failure to meet this schedule will result in reduction of the final grade (while assessing the reasons for the delay).

It is important to understand that the supervisors are **not** the ones that determine the grade. The course stuff will determine the final grade based on the supervisor's recommendation. Students who complete all the requirements of the project will receive a grade of 90. Higher grade will be given to students who achieved more than required.

Tips for the students

1. Take the project seriously. Everyone else involved is.
2. Have a concrete and realistic work plan. Make sure you understand the project objectives clearly and are in agreement with your supervisor on this.
3. Communicate. Keep in constant touch with your industrial supervisor by email/phone. Make sure you are working on the important issues, and not wasting time on minor points. Don't hesitate to contact your supervisor if you are stuck on something (you don't understand the algorithm, cannot install some software, cannot find a persistent bug in your code, etc). You can easily waste precious time if you don't. That is what the supervisor is there for. Do not be shy or overly-independent.
4. Have face-to-face meetings. Email/phone interaction is useful up to a point, but there is nothing better than an old-fashioned personal meeting. Make an effort to meet your supervisor at least once every two weeks, even if it means sometimes going to his/her company location.
5. Be creative. Share any ideas you think will improve your project with your supervisor.
6. Keep to schedule. An important performance criterion is meeting deadlines and milestones. Pace your work accordingly. There is no way you can do this project in just the last two weeks of the semester! There will be no extensions except in very special circumstances.
7. Come prepared. There are three formal progress meetings during the semester. Make sure you go over your presentation materials with your supervisor in advance, and come coordinated to the meetings. It does not look good if the progress meeting deteriorates into a regular project meeting.

Tips for the industrial supervisors

1. Be realistic. This project cannot be part of a real software product. At most an internal prototype and usually just a proof of concept. Don't expect industrial-grade code. Remember that the workload is just 2 x 120 hours of relatively inexperienced not-yet software engineers.
2. Be flexible. It is sometimes difficult to estimate the amount of work required for a project in advance, because it depends on too many parameters. Don't hesitate to modify the project definition and goals during the semester if you realize that they are not possible or realistic.
3. Be focused. These projects are intense, and completing them on schedule is a challenge. It cannot be done without being efficient. So keep the students on track and make sure they are not stuck or wasting time on unimportant issues.
4. Be a nudnik. Make sure you have some sort of contact with your students at least once a week, even if it just a simple prompt. Make an effort to meet them in person every two weeks or so. If you do not hear from them for more than two weeks, that is a bad sign, and you should start to worry. The responsibility to keep to schedule is also yours.
5. Be strict. At the end of the semester, you will take delivery of the results. Make 100% sure you are getting something that you can use, both in terms of reasonable software quality and level of documentation.