Demola courses

Instructions for teachers

To be addressed during a new teacher's induction and used as support during the course

Sisältö 1/2

Sisältö 2/2

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General description of the Demola course 1/2

- Working in groups, students implement a "demo" for a client.
  - Note: The goals of the demo may differ from those of traditional project assignment courses!
  - See slide set "Various Issues" for more details about the demos.
- The demo topics are often related to new technology applications.
- The course is arranged in co-operation with Demola (www.demola.fi).
- Students work in Demola's premises almost daily.
- Teams consist of various students: representatives of different fields and different universities (TUT, UTA, TAMK), and many international students.
- The course is recommended for third-year students (or later).

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General description of the Demola course 2/2

- The course language is English.

- Teams are supported by an actual client (partner), Demola's facilitator and the course teacher.

- Several teachers from different universities can participate in supporting one team.

Demola in a nutshell

- Companies can order "demos" of new ideas (technical, social, etc.) to be produced by student groups. Based on the demo, the company can consider the feasibility of the idea as a product or service.

- Two rounds every year, in the spring and autumn.

- At the moment, approximately 150 students per round.

- Strong representation of international students.

- On the side of the projects, there are workshops on topics related to product development and business.

- Students usually participate through university courses featuring a supporting teacher and possibly also supplementary teaching.

- Online http://www.demola.fi and http://www.demola.fi/academy .

- Works under New Factory, an innovation and business incubation centre; http://uusitehdas.fi/.

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Comparison of Demola projects and traditional project assignments 1/2

Matti Vuori, supported by ideas of Timo Poranen & Toni Pippola

Attribute	Traditional project work course	Demola project
Uncertainty, risk level	Moderate risk	High risk, high uncertainty
Scope	Defined	Defined
Mental focus	Processes, routines, execution	Substance, business
Main quality factors	Fulfilling customer needs, total quality of action, re-usability of results	Value and re-usability of concept, new possibilities – creative thinking, product potential
Relation to tradition, rules, thinking patterns	Follow rules, use heuristics	Break rules, think differently
Main reusable result	Product, documents	Idea, conclusion, principles
Lifecycle emphasis	All equally	Concept, fuzzy front end feasibility study, proof of concept, marketing

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Attribute	Traditional project work course	Demola project
Working environment	Closed, homogeneous, one culture, team work alone	Open space, networking, heterogeneous, multicultural, international, all teams in one space
Communication	Inside team, rhythmic with teacher / long cycle	Inside team, between teams, short cycle with customer/partner, networking
Language	Finnish	English
Product rights	Customer	Team, client can license outcomes
Skill set	Systematic project work, professional action, development & research methods, teamwork	Problem solving, teamwork, creativity, handling uncertainty
Learning experience	Project work, project management, how methods and theory work in practice, teamwork	Project work, team work, potential of creativity, intercultural working

Learning goals

- After the course, the student is able to participate in a professional role in a team that creates a demo or a prototype of a product, service or other innovation, using agile development practices, design and product research methods.

- Teamwork skills are especially emphasised as the course comprises an assignment carried out by a group of students with different backgrounds and skill sets.

- By writing a project report, the student will learn to summarise, rationalise and explain the findings and ideas developed during the project. Oral presentation skills will also be learned as the students present and explain their findings in a project presentation.

Timing within the degree

- These courses are recommended for the third year of studies or later.

- Possibility of linking to the Bachelor's Thesis:

  - With regard to time consumption, Demola and the Bachelor's thesis don't match.

  - In terms of degree progress, the Bachelor's Thesis takes priority.

  - Completing Demola before the thesis would be too early; the student would not have sufficient skills to participate in Demola.

  - Therefore, Demola should be recommended for the phase of studies after the Bachelor's Thesis; it would be difficult to utilise the Demola project in the thesis anyway.

- The Demola project can offer a starting point for the Master's Thesis, but it will not be a sufficient thesis topic as such.

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How do the teams work

- Teams consist of students and a representative of the client.
- Teams are self-directing.
  - The work is intervened only in reviews.
- The teacher is an "external member" of the team.
- The teacher gets all the reports and can participate in meetings.

Key differences from traditional project assignments

- Heterogeneous teams.

- Focus on the beginning of the product development process; the outcome is a demo instead of an entire industrial product development project.

- Focus on interaction and teamwork skills instead of process phase implementation.

- Focus on ideas – developing, presenting and utilising them – instead of pure planning skills or other such skills.

- The outcome is uncertain: the produced demo may prove that the idea is not feasible – and this information is as valuable as a functioning product.

- **Understanding these differences is a prerequisite for the teacher's work on the course as well.**

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What is "taught"?

- Focus on learning by doing.

- Universities don't usually offer their own lectures.

- Demola organises workshops, e.g. in spring 2012:
  - 15 Feb. Agile Workshop by Leonidas
  - 16 Feb. Agile Workshop by Leonidas
  - 21 Feb. Project management clinic / Gamification
  - 29 Feb. Performing skills
  - 5 Mar. Advanced Agile Workshop by Leonidas
  - 6 Mar. Performing skills
  - 14 Mar. Service design
  - 21 Mar. UX
  - 28 Mar. Productification
  - 4 Apr. Matchmaking
  - 12 Apr. To be confirmed
  - 2 May Commercialisation and further development opportunities

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Teacher's role

- Two tasks:
  - The teacher in charge of the course in the department/unit.
  - Possibly an hourly lecturer.
- Usually no lectures to be given; instead, the teacher:
  - Monitors the students on the course.
  - Oversees the achievement of learning targets.
  - Helps the students to understand how the project works.
  - Helps the students to perform their roles (education-related).
  - Helps with any problems.
- Teacher is team's link to university and researcher.
- The teacher participates in main reviews (project plan and final report etc.) and follows team's NABC presentations.
- In other words, the teacher's role is more like that of an external observer.

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What the teacher does NOT do

- Lead team meetings.
- Influence the project substance without separate request.
- Influence work methods without compelling grounds.
    - However, the teacher can discuss with students and help them reflect on their own work.

How does it benefit the teacher? Why should I teach such a course?

- Interesting change from ordinary courses.

- Opportunity to step outside the campus.

- Helps to see how the things taught on courses actually work in practice.

- Getting new ideas for course contents.

- Establishing contacts with companies, networking for the teacher as well.

- Opportunity to introduce your own ideas, e.g. through familiar companies.

- Benefits for the university:

  - Establishing relationships with companies.

  - Supporting the university strategy of encouraging innovation and entrepreneurship.

  - Co-operation with other universities.

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Sign-up 1/2

- Students sign up for Demola and for the course separately.
  - They are reminded of this in the info briefings and on Demola's sign-up page.
  - At the sign-up phase, it is ensured that the student is eligible to participate on the course and the course is placed in the right phase of the student's degree.
    - Does it replace another project assignment course, or is it included in the degree as a separate element?
  - Two channels:
    - The local coordinator and the universities' planners, particularly for international students.
    - Students are always asked to contact their teacher in charge of the programme and the situation is checked at this point.
  - It must also be ensured that the students have signed up for the right Demola course; there may be several available at the university!

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Sign-up 2/2

- In case of sign-up after the given deadline (if students forget to sign up despite all reminders), the attitude is flexible.

- Note! Students can only take and complete the course if they are chosen for a Demola project.
  - In other words, signing up does not automatically lead to getting credits.
  - The start of projects may be delayed, and therefore the situation is monitored over the first weeks.
  - This is why Demola courses should never be mandatory.

- The essential thing is for teachers to "find" their students.
  - There were some problems in this area in 2011, but improvements have been made for spring 2012. However, stay alert!

Credits and grading

- At TUT (CEE fac.), the course is marked with the credits (5) only, no grade
- A record of the course's placement in the student's degree.

Suitability of the project for your department

- Not all projects are suitable for all departments.
- The teacher has a "veto", i.e. the right to keep the department's students from participating in an unsuitable Demola project.
  - This can affect, e.g., the replacement of other optional studies with the Demola course.

Students' expectations

- Students expect to learn, meet people and conduct interesting co-operation within Demola.

- The project assignment is the key priority.

- The teacher has a supporting role but students turn to him/her for support and help when needed.

Resource allocation & time consumption

- Rough rule of thumb: 20 hours per group.
    - The number of groups can be estimated on the basis of previous course implementations.
- Elements to take into account:
    - Work needed to form groups and meet students, e.g. 10 h.
    - Guidance (e.g. 5 h per group; 5 h*15=75 h) 75 h.
        - Incl. key reviews and a few meetings.
    - Attending the project closing presentations 8 h.
    - Reception at Demola or the university.
    - Following project blogs (2 h/week, 14 weeks * 2 h = 28 h) 28 h.
    - Grading students.

Key points about the project progress

- All of the team's meetings are scheduled and communication with the teacher is agreed at the project plan review - be there!

- Try to "find" all your students and meet with them.

- Demola keeps records of the teachers of students and groups.

  - Co-operate with other teachers in monitoring the groups.

- It is important to participate in key project events; once a month

  - Project plan audit (read project plan carefully!).

  - Concept-visualising demo and the first functional demo (these a agreed in the project plan review).

  - NABC presentations.

  - The team's closing meeting (read final report carefully!).

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Further activities to participate whenever resources allow

- Demola workshops.
  - Learn something new free of charge.
- Completion gala event.

Supplementary teaching

- If a need to provide students with supplementary teaching in some special area emerges during the course, try to arrange such teaching for all Demola students in co-operation with Demola, or at least for all teams including your students.

Support material

- Demola's website www.demola.fi

- The "Various Issues" slide set describing the substance of such activities, including the differences to traditional project assignment courses (not a public document, ask your local coordinator).

- The document "Yritysten tuotekehitystoiminnan suhteesta opiskelijatiimien tekemiin innovointiprojekteihin – Alustavaa analyysiä".

- The material bank in InnoPilotti-project web site (http://wiki.tut.fi/InnoPilotti/) materiaalipankki, which contains the afore mentioned document and much more.

Co-operation network

- Coordinator(s) for your university and the course.

- Teachers and persons in charge of other courses.

- Teachers from other universities.

  - Learn to know them, co-operate with them in group guidance (e.g. attending meetings, discussing team problems).

- Demola's facilitators.

  - The people who arrange practical matters.

  - They also help teachers.

Potential problems 1/2

- Fighting teams = "problems with team dynamics".
  - Remember: problems are part of learning teamwork.
- Students dropping out.
  - Try to open a line of communication.
  - Time consumption is a common problem for Finnish participants. Discuss with them before the course and emphasise how much time the course will take.
- Students performing poorly or insufficiently.
  - You can reduce credits (e.g. 5->3) or create additional assignments (summary writing).
- Problems with meeting students.
  - The teams' meeting schedules are set at the beginning of the course with the teacher present. Ask the students to visit you if any issues emerge.

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Potential problems 2/2

- Problems with your own time consumption.
  - Get help from an hourly lecturer or a researcher with a particular interest in a certain team's project.
  - Be more realistic in your planning next time; utilise the records of previous course implementations.
- Problems with the client.
  - E.g. if a client wants to change the project theme during the course, the teacher is entitled to protect the students.
  - The teacher must also protect students from too heavy workloads and intervene if the client encourages excessive or post-deadline work for the team.

Tips

- Spend your working day at Demola with your laptop. Cheer up!
- Parking: free of charge for four hours (with the parking disc) in front of Nääshalli.