PA2518 Global Software Engineering

Part I: Introduction to the course

Lecturer: Dr. Darja Šmite

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- Associate Professor at BTH (since 2008)
- Professor at the University of Latvia (since 2001)
- Industrial experience
  - 6+ years
  - Project management, system analysis, programming
- Academic experience
  - 10+ years
  - Global software development (mainly), agile methods, software process improvement
  - Research projects and studies with industry partners (Ericsson, ABB, HCL, Emerson Process Management, DATI, CALVI)

Objective of the course

- Provide an awareness, understanding and practical experience regarding

  communication, coordination and control

  of software engineering activities in different globally distributed settings

How many of you feel competent about global software engineering?

Example of what you will learn

Imagine a case: Your manager asks you to lead a new project, which is time critical. You are asked to use the follow-the-sun approach in this project to speed up the work. What is your response to the manager? You are free to make your own decisions.

Q1: Select the sites that you will use for the project.

The following sites are available. Consider that there are no restrictions when it comes to selecting particular roles in this case.

Karlskrona, Sweden	Oslo, Norway	Florida, USA	Warsaw, Poland
Stockholm, Sweden	Montreal, Canada	Dublin, Ireland	Kiev, Ukraine
Riga, Latvia	Manila, Philippines	Shanghai, China	Bangalore, India
Chennai, India	Sydney, Australia		

Example of what you will learn

Imagine a case: You represent a Swedish software organization, which is contracted to develop a secure embedded system that will be used in bank cash machines. Your customer is a Norwegian company located in Oslo. The developed product will be implemented in several banks around China. Your task is to plan project resources and explain your decisions.

Necessary resources: Systems analysis will require a co-located team of 10 analysts working for 2 months. The project requires 50 co-located developers working for 1 year. Testing will require 10 co-located testers for 1 month.
Available resources:

Your organization	Stockholm, Sweden	20 analysts, 20 developers, 20 testers
Your subsidiary	Oslo, Norway	15 analysts, 0 developers, 15 testers
Your subsidiary	Manila, Philippines	10 analysts, 150 developers, 0 testers
Your subsidiary	Shanghai, China	5 analysts, 30 developers, 5 testers
Sub -contractor	Shanghai, China	10 analysts, 80 developers, 10 testers
Sub-contractor	Bangalore, India	0 analysts, 150 developers, 50 testers
Sub-contractor	Chennai, India	0 analysts, 50 developers, 10 testers

PA2411 – Global Software Engineering

Teachers

Dr. Darja Šmite

Ronald Jabangwe

Students

Experience with GSE?

Countries?

Backgrounds?

Course material

Carmel's book

Course slides

Research articles

NOT fairy tales!!!

Infrastructure

It's learning:

Lectures slides

To read folder

Assignment

Content

- Lectures
- Practical exercise
- One project-oriented assignment
- Student presentations
- Seminars
- Examination

Lecture schedule and topics

September 1	September 2	September 8
Introduction	**Human factors**	**Project management**
• Terminology • Sourcing setups • Motivation for sourcing • Realization of assumed benefits	• Teamwork • Communication • Trust • Cultural diversity	• Coordination • Project management practices • Task allocation • Roles and responsibilities

Literature

- Erran Carmel, Global Software Teams: Collaborating Across Borders and Time Zones, Prentice-Hall, 1999
- Research articles to be found in *To read* folder

Practical exercise

- Practical exercise: experiencing cultural differences, difficulties with transferring information through “emails”

- Practical exercise will be conducted in groups
- Practical exercise shall drive your learning and add sense to what you learn from the theory
- There are no credits for your engagement

Assignments and exams

Module	Credit	Grade
Project assignment	3.0 hp	F-A
Written examination	4.5 hp	F-A

Note that the project assignment is individual!

Project assignment

- task: development of a project plan (a detailed situation is given)
- form: individual assignment
- submissions: through It's learning
- formatting: IEEE, two columns / PDF
- grading: suitability of the solution, research and argumentation, coverage, language
- deadline: October 21, 12:00 (noon)

Overview of the task

- You will need to establish a global software development setup and develop a detailed project plan using the given templates
- Assignment will contain:
  - A description of the project
  - A tentative work breakdown structure for the project
  - Descriptions of the resources you can use in the project, including cost
  - References to other supporting documents
- Delivery shall contain:
  - Project Management Plan
  - Gantt Chart with task allocation
  - Budget Estimate
- This is a GSE and not a PM course — demonstrate your knowledge and understanding of GSE related concepts and issues: Task Distribution, Communication, Risk management, Project management, Integration, Budget

Support in preparation

- Seminars: Sep 24, Oct 8, Oct 20
- Purpose: discussions regarding the assignment preparation

- Be prepared with concrete questions

Re-submissions

- Students have 3 attempts to pass the assignment & exam
- Grades A-E cannot be improved
- The assignment task will change every time
- One month of time will be provided for re-submissions
- Re-submissions are graded the same way (A-F)

Assignment handling

- All assignments are handled through It's learning
- Assignments submitted through email are NOT reviewed

Deadlines

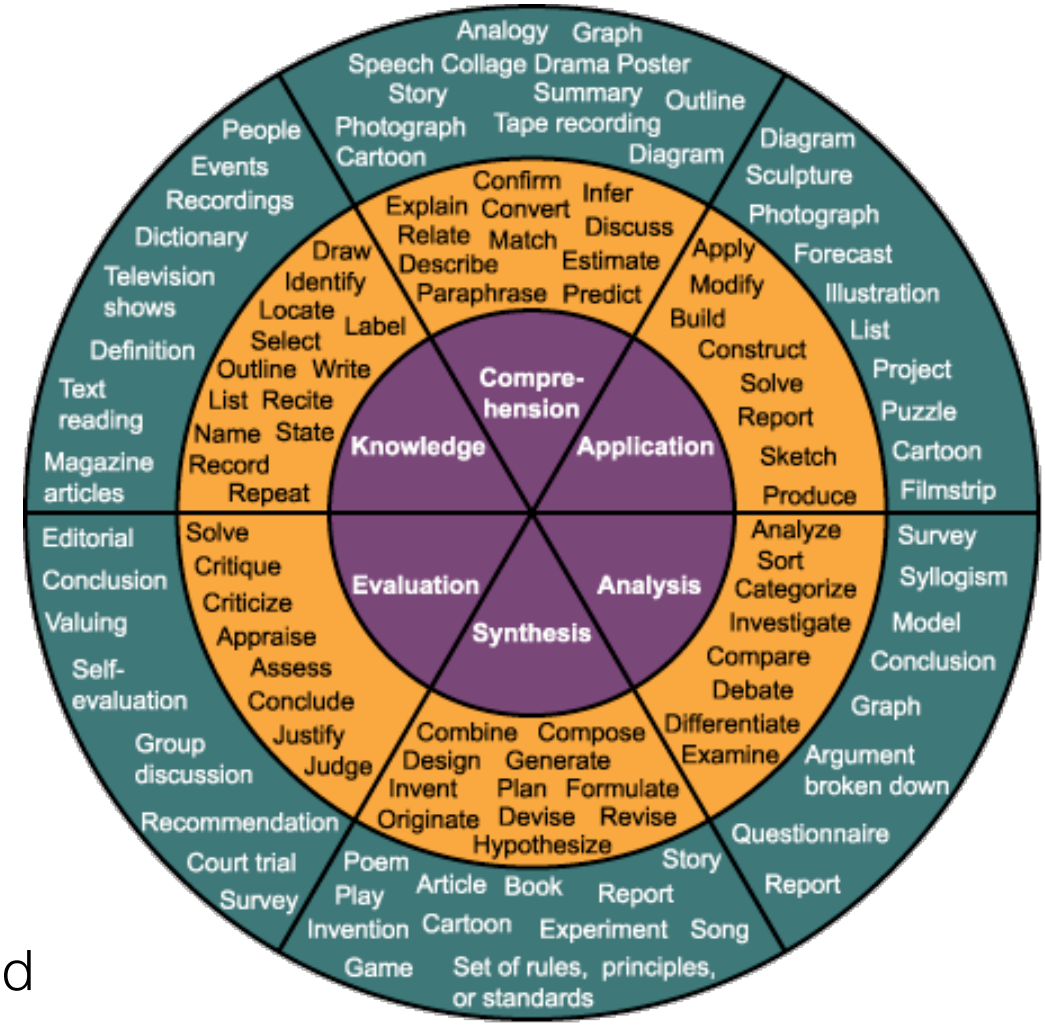
- Respect the deadlines
- It's learning does not allow late submissions
- If you have technical problems – it's your fault
- Plan your work in advance
- If a student misses the deadline, the assignment receives an F (one of the three submission times)
- There are NO excuses for not meeting the deadlines

Examination

- Teachers do not handle the organization of exams at BTH — it is a centralized service
- You need to register for the exams
- Exams will be given in November, January and June
- Exams are scheduled by the *tentamen* service (tentamen@bth.se)

Evaluation criteria

- Do not memorize, understand!
- Master students are expected to demonstrate:
  - Knowledge of the topic
  - Comprehension of the knowledge
  - Ability to apply the knowledge
  - Ability to analyze, compare, discuss alternatives or different opinions and drive your own conclusions
  - Ability to synthesize knowledge from different areas and sources
  - Ability to critically evaluate your and others work



Bloom's Taxonomy of learning

Grades

A: EXCELLENT.	A particularly outstanding achievement that lies significantly above the average standard
B: VERY GOOD.	An achievement that surpasses the average standard
C: GOOD.	An achievement that fulfills the average standard. Generally sound work with a number of notable error
D: SATISFACTORY.	Fair, but with significant shortcomings. Achievement that fulfills the average standard despite deficiencies
E: SUFFICIENT.	Performance meets the minimum criteria. Achievement that fulfills the average standard despite deficiencies
F: FAIL	In other cases.

Negotiations

- Invalid arguments:
  - "I am unsatisfied with my grade, please, re-evaluate"
  - "I have invested a lot of time into this, and received a lower grade that I anticipated"
- If you think the grade is unfair:
  - Evaluate your work critically, considering the Bloom's Taxonomy of learning
  - Write a claim stating your grade, why do you think you received this grade, what grade do you think you deserve and the argumentation why
  - Check whether the improved number of points (in case of the exam) actually changes the final grade

Hints for the exam

- Be short and concise. Answer the exact question – writing additional things that are not required may decrease your grade! If you are required to list e.g. 5 items – list exactly 5. You cannot list 15 and hope that 5 of them are correct
- Handwriting: if I cannot read, I cannot grade
- Names: spell your name exactly as it is used in Ladok. Use your name in the same way in all occasions
- Emails: use your BTH email for communication
- Emails: Include the course code and the year of your registration for the course whenever communicating with teachers. Teachers have multiple courses

Plagiarism

- unauthorized use or close imitation of the language and thoughts of another author and the representation of them as one's own original work

- any plagiarism will result in Failure

Plagiarism detection

- When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism
- Plagiarism is automatically checked in It's learning !!!

Plagiarism

- Carefully acknowledge exactly what, where and how you have employed
- If the words of someone else are used — put quotation marks around the passage in question and add an appropriate indication of its origin
- Making simple changes while leaving the organization, content and phraseology intact is plagiaristic
- This does not apply to ideas which are so generally and freely circulated as to be a part of the public domain

Plagiarism examples

- Direct copying from original sources
- Direct copying from original sources, but with footnotes
- Rewording a sentence (paraphrasing)
- Borrowing organization
- Submitting someone else's work
- Failing to reference/footnote source material

Using the literature

- Using related literature sources properly is good
- You are expected to show ability to search, find and make use of reliable, useful literature sources AND reference them in a proper way

- Referencing guidelines from Warwick Center for Applied Linguistics – http://www2.warwick.ac.uk/fac/soc/al/postgrad/info/referencing_guidelines/
- Inspect examples of plagiarism. One such source is the following: http://www.chem.uky.edu/courses/common/plagiarism.html

More examples

Good practice

- Synthesis of knowledge using multiple data sources
- Consideration of alternative views
- Formation of own opinion based on the evidence from reliable data sources

Poor practice

- Basing argumentation on a single data source
- Failing to consider alternative views (selection bias)
- Lack of conclusion

Questions about the course?