DTI / ELG / GNG
5902
Industry Internship Projects

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DTI / ELG / GNG 5902 Course Logistics

• Weekly Office Hours / Discussion Group
  • Wed 11:30-12:50 !! (different than u ozone)
  
  https://cutt.ly/GradProject5902

  PDC Contact: Roopleen Kaur rkaur050@uottawa.ca
  Professor Ali Abbas aabbas@uottawa.ca

• Forms, Presentations, Templates
  
  https://www.site.uottawa.ca/~lpeyton/gradproject/

• Withdraw from course if the following are not satisfied:
  • Signed Project Proposal before DROP Deadline!! (May 26)
    • Send to Roopleen Kaur PDC Executive, rkaur050@uottawa.ca FIRST for feedback
    • Then with signatures to ELG / GNG 5902 Projects Coordinator (Prof. Liam Peyton)
  • Absolutely confident the project completed this semester (August 31)
    • otherwise must register next semester (winter) AND pay for 6 units tuition a 2nd time!!
Professor Ali Abbas

• MASC & PhD Electrical and Computer Engineering, uOttawa (2004,2010)
  • Research in Biomedical Engineering: telemedicine, robotic surgery, medical instrumentation, bioinformatics, eHealth, protocols modeling & automation.  
    https://ruor.uottawa.ca/handle/10393/242/browse?type=author&value=Abbas%2C+Ali

• Entrepreneur
  • co-founded and the director of KI Design in early 2017
  • architect and senior manager with eHealth Ontario 2010-2017

• Team leader, architect and manager
  • CAE Electronics from 1998-2000 in Montreal
  • Nortel Networks 2000-2002, Mitel Networks 2002-2004 in Ottawa

• uOttawa Part-time Professor since 2006
  • 10 different undergraduate courses, > 15 different graduate courses.
  • Also training and education to government institutes and private sector
DTI / ELG / GNG 5902 Schedule & Grading Scheme

Deadlines

• Project Proposal Approved— May 19 (20%)
  • Problem Definition & Mentor & Context, Background, Project Plan, Signatures
• Minimum Viable Prototype Presentation— June 21(10%)
• Beta Release Presentation— July 19 (10%)
• Final Report (30%) & Project Mentor / Team Member Evaluation Forms (30%) – Aug 16

Late Penalties

• 10% if late, 20% if 1 week late, 100% if 2 weeks late (grade of 0)
• Extensions can be negotiated ... in advance.
  • Length of extension <= Length of advance notice.
• Professional Skill #1: FOCUS
  • **WHAT** is your **most important** priority/goal for:
    • Your Life or Your Career or Your Degree or This Course or Your Happiness or THIS LECTURE or The Course Project or The Job Interview or This Individual You Are Communicating With ....
    • **The one thing** ... that if achieved means you are successful (no matter what else...) ... and if not achieved means you failed (no matter what else is achieved ...)
    • Each context has its own **FOCUS**.
  • **WHY** is it important?
    • Who/what is needed to succeed (and have you found them yet).

• Professional Skill #2: FOLLOW-THRU
  • **HOW** do you achieve your **FOCUS**? **ARE YOU SUCCEEDING**?! Are you committed? Serious? And **Politely, Patiently but persistently RELENTLESS**?! 
  • Do you have the right **FOCUS**? **WHAT** and **WHO** do you need to find / develop / prepare / master / do / achieve to **FOLLOW-THRU**?
What is a career? (what is a resume?)

• A series of projects in which new skills are learned, experience is gained in roles that develop your authority in your area of expertise

• Projects are done in teams

• Projects have a context and must integrate with or interface to systems (processes, technology, information, organizations, legal) and must interact with people outside the project team (stakeholders, clients, users, partners, third party vendors) to succeed

• Projects have a business purpose and generate value

• Projects have a focus
Team Building Skills and Conflict Resolution

- Great Resource for Team Building Skills and Conflict Resolution
  - [https://www.itpmetrics.com/team.resources](https://www.itpmetrics.com/team.resources)

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The Faculty of Engineering ROADMAP

• Join the **Professional Development Club (PDC)** to build your professional **network** (colleagues, support, mentoring, connections)
  - [http://www.gespdc.com/#/project-list](http://www.gespdc.com/#/project-list)
  - [https://www.linkedin.com/groups/10528074/](https://www.linkedin.com/groups/10528074/)
  - [https://www.facebook.com/Professionaldevclub/](https://www.facebook.com/Professionaldevclub/)

• **ELG / GNG 5301** for education, mentoring and experience in professional **skills**, **teams**, and **projects**.

• Fully engage in courses, **volunteer** opportunities, **projects**, research opportunities, industry **internships**, university services and facilities

• Leverage your professional **network** to define, plan, propose and complete an **DTI / ELG / GNG 5902 Industry Internship Project** as a culmination of your degree ... and gateway to a great job!
DTI / ELG / GNG 5902 Course Logistics

• Forms, Templates and Presentations for DTI / ELG / GNG 5902
  • https://www.site.uottawa.ca/~lpeyton/gradproject/

• Presentations
  • IndustryInternshipProject (this presentation for this course)
  • Career (sets context when I explain projects in ELG / GNG 5301)

• Project Proposal Templates (DTI 5902, ELG 5902, GNG 5902)

• Grading Forms (rubric) for Final Report and MVP & Beta Release presentations

• Example Final Report

• Project Mentor & Team Member Evaluation Forms
What is a project?

• A project can be an organized attempt to engineer a solution to a problem
  • Engineering design process:

• A project can be a creative approach to improving user experience
  • Design thinking:
    https://www.interaction-design.org/literature/topics/design-thinking

• A project can be a systematic approach to researching the literature, collecting data, comparing cases to identify & evaluate possible solutions
  • Similar to Engineering design process ... BUT missing develop & prototype solution ... focus on data collection of existing solutions and testing suitability to address requirements
  • Systematic literature review:
Engineering Design Process

Project Proposal
- Problem Definition & Project Overview
- Background
- Context (Mentor, Team, Users)
- Learning Outcomes (Tools, Skills, Society)
- Deliverables
- Project Plan

Project Report
- Problem Definition
- Background
- Requirements (Deliverables)
- Design or Method (Project Plan)
- Implementation or Results
- Evaluation and Analysis
- Conclusions

Stage 1: **Empathize**— *Research Your Users' Needs*  (Background Research)

Stage 2: Define—*State Your Users' Needs and Problems*  (Define Problem & Requirements)
  - Create **personas** to help keep your efforts human-centered before proceeding to ideation.

Stage 3: Ideate—*Challenge Assumptions and Create Ideas*  (Brainstorm & Evaluate)
  - Knowledge from first two phases enables you to start to “think outside the box”, look for alternative ways to view the problem and identify solutions. **Brainstorming** is useful here.

Stage 4: Prototype—*Start to Create Solutions*  (Develop Prototype)
  - Produce inexpensive, scaled-down versions of the product (or specific features found within the product) to investigate ideas. This could involve simply **paper prototyping**.

Stage 5: Test—*Try Your Solutions Out*  (Test Solution)
  - Evaluators rigorously test the prototypes. Design thinking is iterative: **Teams often use the results to redefine one or more further problems.**
What is a successful project?

• **Value proposition**
  • What benefits will your project provide to who and how will you achieve it ... and how will you demonstrate / measure that you have achieved it
  • Define, Evaluate, Measure, Build
    
    [https://www.forbes.com/sites/michaelskok/2013/06/14/4-steps-to-building-a-compelling-value-proposition/#57b6c1214695](https://www.forbes.com/sites/michaelskok/2013/06/14/4-steps-to-building-a-compelling-value-proposition/#57b6c1214695)

• **Minimum Viable Product**
  • Minimum set of features, or the essential functionality that a product needs to provide to be useful to customers; to get feedback for the next iteration.
  • The essential feature(s) that guarantee success if present, failure if absent
    
    [https://medium.com/@sprocompany/what-is-a-minimum-viable-product-and-how-to-build-an-mvp-for-your-startup-9a02c0d4a56a](https://medium.com/@sprocompany/what-is-a-minimum-viable-product-and-how-to-build-an-mvp-for-your-startup-9a02c0d4a56a)

• **Evaluation Criteria**
  • What are the criteria for success? How will they be measured?
How Do I plan the project?

• **Duration and Effort**
  • Target Minimum 240 hours ... max 360
  • Usually 1 semester - 12 weeks @20 hours a week (university budgets that students spend 10 hours per week for a 3 unit course) ... but could be different. **Be clear.**

• **Specify Expected Results**
  • Define what you must deliver at the end of the project to satisfy your mentor
  • Define how it will be evaluated and progress tracked.
  • Deliverables are milestones or checkpoints where there is formal feedback

• **Define a Week by Week Project Plan**
  • Work backwards from the end result and list week by week what tasks will be performed so that milestones (intermediate results) will be achieved
  • Track your progress week by week throughout the project. Update schedule to keep it real.
How am I evaluated

• Both your project mentor and I will review your deliverables
  • Project mentor fills in Project Mentor Evaluation Form. Projects Coordinator determines grade.
  • If a team project, each team member will also fill in a Team Member Evaluation form for each of their team mates (360 Degree Review) that will be factored into the grade as well.
    • [https://www.thebalancecareers.com/what-is-a-360-review-1917541](https://www.thebalancecareers.com/what-is-a-360-review-1917541)
    • [https://www.thebalancecareers.com/360-degree-feedback-information-1917537](https://www.thebalancecareers.com/360-degree-feedback-information-1917537)
    • [https://en.wikipedia.org/wiki/360-degree_feedback](https://en.wikipedia.org/wiki/360-degree_feedback)

• Projects should be done by a team of students (each receiving a grade) but can be done by a single student
  • Single project proposal (but contains a separate signature page and project plan for each student).
  • Each students presents at least one slide of their work for each presentation.
  • Group Mark for Project Proposal, Final Report.
  • Individual Mark for Minimum Viable Prototype Presentation, Beta Presentation, Evaluation.