Industry Internship Projects
ELG / GNG 5902

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Course Logistics

https://www.site.uottawa.ca/~lpeyton/gradproject/

• Weekly Office Hours / Discussion Group
  • Wednesday 10h – 11h20, meet.google.com/bdk-wdeh-pta

• Student Volunteer Coordinators (answers about course)
  • ELG / SYS Yilin (Ellen) Yang – yyang308@uottawa.ca
  • DTI / EMP / CSI / BMG Ajay Modagi – amoda040@uottawa.ca
  • MCG / AMM / CVG / EVG / CHG Parth Patel – ppate127@uottawa.ca

• PDC Executive (source of projects)
  • https://professionaldevclub.wordpress.com/professional-development-club/
  • https://www.facebook.com/groups/1939747369464467/

• Requirements to stay registered (decide by May 27!)
  • Finish project August 31 (otherwise register again in Fall and pay tuition)
  • Signed Project Proposal
    • Industry partner (you find)
    • Supervising Professor (you find)
    • Project Coordinator (Prof. Liam Peyton)
What is a career?

• 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)

• Projects have a **business purpose** and generate **value**

• Projects have a **focus**
Why is it hard to do a project …

• Projects are simple to find, but challenging to do right, and even harder to follow through to success on.

• A project is much more fun, if you are part of a team, working for a client you are trying to satisfy.

• A project always has a context (what is your context?)
  • what is in scope, what is out of scope
  • interface with existing infrastructure
  • interact with key contacts (people)
  • leverage whatever available tools and knowledge might be useful.
How Do I Find a Project?

• UNIVERSITY COURSES
  • GNG5120, GNG5140 … any course with projects,

• ONLINE COURSES or INDUSTRY WORKSHOPS

• VOLUNTEER – PROFESSORS
  • CREATE PROJECTS (E.G. www.create-best.com)

• VOLUNTEER – CEED

• NETWORK – Professional Development Club, Sawsan, Mana
  • City of Ottawa (Farzaneh, Patricia, Simardeep, Ajay, Astha)
  • University of Ottawa (Asth)
  • This years projects: Aedo (Yi Liu), Siemens (Ephrem Nisrane), NLP (Prof. Arya)
  • Student Associations, Clubs, Womens Innovation Network, Startup Garage …

• NETWORK – Industry Clusters, Professional Associations
  • www.cengn.ca (Bamdad Mousavi)
  • Contact and invite companies, alumni to do an event or information session
Industry Clusters

• Data Science / AI
  • Aedo.ai (Construction Industry – relevant to Civil Engineering as well)
  • Startups and Consulting firms
  • Kanata Business Association

• Networks and Cloud Computing DevOps
  • CENGN, Cisco, Kanata

• City of Ottawa
  • Mobile, Data Science, Civil, Environmental, Biomedical

• Biomedical
  • www.create-best.com

• Security, Electric / Autonomous Vehicles, Gaming, Oil Industry, HVAC, ...
How do I define / register to GNG5902?

• ELG / GNG 5902 Industry Internship Project needs an approved proposal
  • https://www.site.uottawa.ca/~lpeyton/gradproject/ Can be used for ELG / GNG5902 or Discipline Specific Project Code or to plan any project ....
    • Proposal
    • Industry Partner
    • Supervisor
    • Mentor – Graduate Students Projects and Internships Coordinator
      • http://www.site.uottawa.ca/~lpeyton/syllabus.html#Hours
    • Program Approval (Service Request)
What is a project?

• A project can be an organized attempt to engineer a solution to a problem

• 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 also be a systematic approach to researching the literature, collecting data, comparing cases to identify and evaluate possible solutions
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 24 weeks @ 10 hours a week, could be 6 weeks @ 40 hours a week. Be clear.

• Specify Expected Results
  • Define what you need to deliver at the end of the project to satisfy your client.
  • Define how it will be evaluated and progress tracked. Deliverables (intermediate and final results) and Grading Scheme.

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

• Your Supervising Professor is responsible for informing me or the graduate office of your final grade
  • Depending on the project each Deliverable that was identified in the Project Proposal could be evaluated by either the industry partner or the supervisor.
  • EXCEPT there must be a **project report** worth 30-60% of the final grade that is graded by the Professor
  • And there must be an **internship evaluation form** that is worth 10-30% that is filled in by the Industry partner

• **Projects can be done by a team of students**
  • Each student has a separate project proposal that clearly identifies their role on the project, and what part of the project they do entirely on their own.
  • Each student does their own project report and has their own internship evaluation
  • But their can be common parts of the project infrastructure (and intermediate deliverables) that are a group effort and a group mark.

• **NOTE**: Individual projects also specify their “team” (key contacts they interact with), as well as identify the tools and resources and existing infrastructure that is part of the project context.
How do I find an industry partner … to hire me?

• Do you know what your target industry cluster is?
  • Do you know what websites, conferences, trade journals/magazines the cluster uses to network?
  • Do you know **who in your network** and who at uOttawa is connected with the cluster?
  • Do you know how you can be active in your target industry cluster?

• Do you know what organizations / companies you are targeting?
  • Better yet do you know which organizations are targeting YOU!?
  • How do they communicate with you? (web presence, events, linkedIn, Job postings, head hunters career center)
  • What **roles / jobs / projects** are available at a target organization? How can you research this?

• Do you know what skills and experience they are looking for?
  • How can you acquire them?
  • How do you **communicate to your target organization**? (web presence, your network, your references, your promoters, resume, interview)

• Why should they hire you?
  • What is **your pitch**? Why **are you the right person** for the job/project? What is your **value** (to them)?
How do I find a Supervisor (mentor, promoter, reference?)

• **Do you know how to meet the right professors?**
  - Courses and Research and their students (program seminars where thesis students present!)
  - Program Associations and Program Coordinators
  - Engineering Events (CEED, Orientation, Bulletin); Ottawa Industry Events
  - **Do your research!** (faculty web pages, google, google scholar)

• **Do you know how to communicate with professors?**
  - In person (when, where) or by email (how should such an email be worded)
  - Do you know how to efficiently ask for and get an appointment scheduled?

• **Do you know what professors are interested in?**
  - Do you know what industry clusters, organizations / companies the professor is interested in?
  - Do you know what **skills and experience** they are looking for?
  - Do you have the skills and experience they are looking for?

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