

ENGR 120

Design & Communication II

ENGR 121

Design II

Happy New Year!

Territory Acknowledgment

I acknowledge with respect the Lekwungen peoples on whose traditional territory the University of Victoria stands, and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.

https://www.youtube.com/watch?time_continue=105&v=Fwa9c8nqHUo&feature=emb_logo



Learning Outcomes

- About the instructor
- About the course
- About the project
- About the upcoming design lab
- About the plenary lectures



About the instructor

Name: இளம்பரிதி (I L A M P A R I T H I)

Teach: Electric power specialization courses & Introductory design courses

Research: Motor fault diagnosis & Engineering pedagogy

Service: IEEE Victoria Section Chair

Contact info

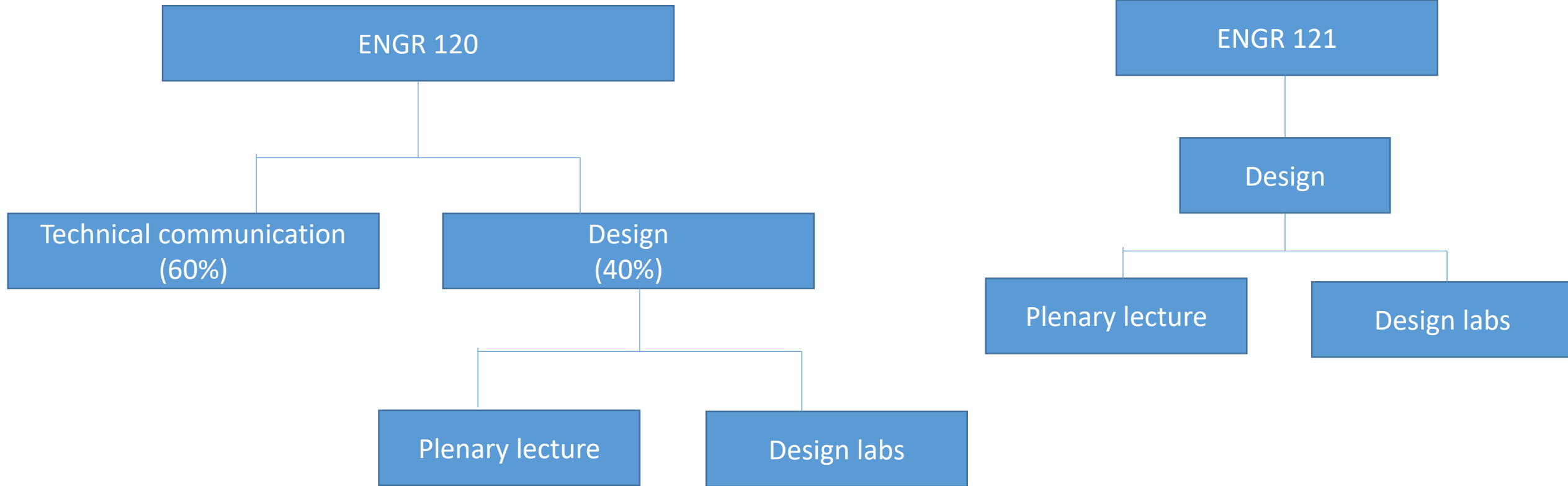
1) Questions regarding the course: Discussion Forum on Brightspace

Course tools → Discussion

2) Other questions: ilampari@uvic.ca



About the course



Design labs commence from the week of January 16 and will happen every week



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Design component Info

Design portion is project based (no exams)

The project is team based: 3 students per team

Teams will be formed in the first lab session (next week)

Future of transportation systems – your thoughts



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Future of transportation systems – your thoughts



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Future of transportation systems – your thoughts

Canada's Zero-Emission Vehicle (ZEV) policy



Common aspects of future transportation systems

- 1) Batteries + electric motors → propel the vehicle
- 2) On-board computers control the vehicle
- 3) On-board computers take care of all communication

What engineering skills do you think would be most required for future transportation systems?



Engineering skills most sought after would be...

- 1) Ability to work with electrical power system
- 2) Ability to design & control electric motors
- 3) Ability to program computing devices to sense, communicate and control

Design project

Build a battery powered, autonomous robot to accomplish a mission

<https://www.youtube.com/watch?v=-LAI1W0E7IA>



Design project - execution

Design labs will introduce you to needed skills and resources

You are expected to spend time outside of the lab sessions to complete the project

Design lab info for the week of January 16

Location: Engineering Lab Wing (ELW) B336

Note your **lab section** and show up 5 minutes before time!

Each of you bring **\$80 cash** (no cards will be accepted)

Teams will be formed & VEX kit will be handed over

You will check if all the components are intact & functional



Plenary lecture - objectives

Share basic information about the labs

Set context for the design activity to be carried out

Provide basic knowledge to carry out the design activity

Introduce you to a few professional practices



Before we delve deeper in to the course,

In your opinion, what are the top 3 things that are needed for a *successful* design engineer?

Discuss with the person next to you



IMO, for a successful design engineer...

(1) HEALTH

<https://www.uvic.ca/services/health/resource/campus/index.php>

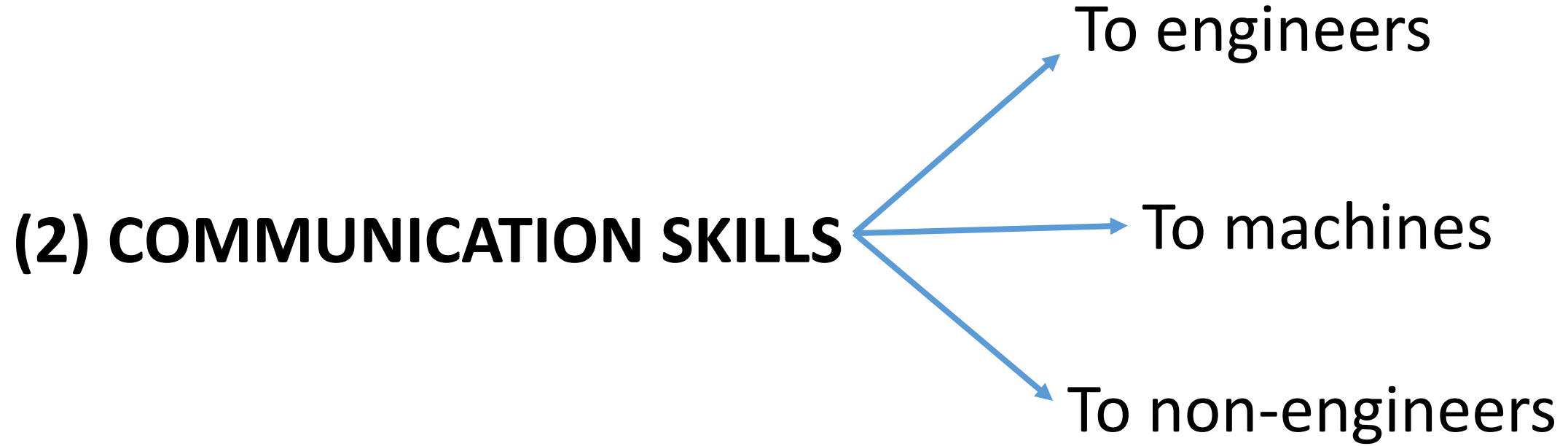
Maintaining good health is easy!

You are old enough to know the dos & don'ts

Just practice them.



IMO, for a successful design engineer...



IMO, top 3 things for a successful design engineer...

(3) PROFESSIONALISM

<https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf>

- Showing up
- Punctuality & Sincerity
- Putting customers & team first
- Focus
- Being Respectful

Equity, Diversity & Inclusion

The Faculty promotes a **safe, respectful and inclusive learning and working environment** for all members of our community and strives to be a place that is free of discrimination and harassment, sexualized violence and all other acts of violence or injustice.



Design component mark distribution

Design Lab Exercises	3 x 5% = 15%
Concept sketch (video submission)	05%
Subsystem demonstrations	35%
Final demonstration	30%
Contribution during open labs	15%
Total	100%

You need to pass the Design component to pass the course!



Write down your expectations from the course

Brightspace → Course Tools → Surveys



Summary

- Instructor name – ilamparithi (ilampari@uvic.ca)
- Design project → a battery powered autonomous robot
- Design labs will help you complete the design project
- Plenary will provide background for design activities
- Brightspace will be used to share all information

