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# RE: PhD Scope V2: Finite Element, Design [CATIA V5], Optimisation, Modelling [SolidWorks], CAD [TurboCAD 2016]

**Att:** Prospective PhD Supervisor

Dear Dr Mladenko Kajtaz

Hi

I am graduate of “Sharif University of Technology” in Mechanical Engineering [B.Sc.]. I graduated with Master Degree in Mechanical Engineering [& Aerospace] from Shiraz University. I immigrated to Perth - Western Australia and continued my PhD course at Murdoch University here. Unfortunately this university has never had a Mechanical Engineering Department, but at that time had a Harvard - PhD supervisor in Physics Department who supervised me in a very interesting field: Flywheel Energy Storage System for the residential 5 KW Wind Turbine [Design & Construction].

4 Years after my PhD study had to be completed and a thesis be written down, my supervisor said we need a second supervisor in Mechanical Engineering to assess my Design work and then the phase of construction starts with research data I had gathered and organised. We looked in Australia since then and no one has been found to know more than myself in this research field.

If it is possible that I study at RMIT University and continue my PhD Scope in Finite Element, Design [CATIA], Optimisation, Modelling [SolidWorks], CAD [TurboCAD] and plan for such project from start to completion and you supervise me in February 2018. Project Scope statement provides the list of deliverables and acceptance criteria for the project and its products, services and results.

**Eligibility for enrolment as a PhD student at RMIT:**

You can find my CV, and portfolio by typing **R1** in my professional website:

<http://ewindfly.shubayr.net>

I am studying “**Certificate IV in Project Management Practice**”, and complete it in July 2017. This year I completed “**Certificate IV in Learning and Assessment**” which qualifies me to teach at Australian Tertiary Colleges. I wish to apply the two certificate courses in my New PhD. To write a proposal for this PhD the following 31 units of competencies, which I studied in my B.Sc., M.Sc., Diploma, Cert IV courses in the past would help me:

1. Optimal Design of Mechanical Elements
2. Use CAD to Create and Display 3D Models [SolidWorks 2016]
3. Use Computer Aided Drafting Systems to Produce Basic Engineering Drawings [AutoCAD 2016]
4. Interact with computing technology [Office 2016: Word, EXCEL, Access, Data Base, PowerPoint]
5. Apply project Scope management techniques
6. Apply project Information management techniques
7. Apply project Risk management techniques
8. Apply project Cost management techniques
9. Apply project Quality management techniques
10. Apply project Time management techniques
11. Programming & Numerical Analysis
12. Gear Box Design by Computer [a project in CAD]
13. Mechanisms Design
14. Engineering Graphics I
15. Engineering Graphics II
16. Fundamentals of Machine Design I
17. Fundamentals of Machine Design II
18. Machine Design I
19. Machine Elements Design II
20. Corel PhotoPaint V10: Image Manipulation Fundamentals
21. Adobe Premiere 6: Video Editing Fundamentals
22. Engineering Design Methods
23. Introduction to Combustion Engine Design
24. Chassis Design
25. Machine Tool Design
26. Workshop I
27. Special Workshop I
28. Special Workshop II
29. Dynamic Systems I
30. Measurement and Control Systems [3D Pipe-FEA]
31. Automatic Control

**The project Scope Management:**

# Finite Element, Design [CATIA V5], Optimisation, Modelling [SolidWorks],

# CAD [TurboCAD 2016]

**Project Time Management:**

**Phase I** of the project which is “writing a proposal by generating a new Idea” within the above project scope would start in July 2017 by Afsaneh Cooper in Perth.

I would graduate from my Cert. IV in Project Management in July 2017, then I would start doing my research to write a PhD proposal for one of the following machines:

* Hybrid Car – Super Flywheel Energy Storage System
* Hybrid Train - Super Flywheel Energy Storage System
* Ocean Wave Turbine
* Wind Turbine - Super Flywheel Energy Storage System

I would do all my CAD work on TurboCAD 2016, but I would export my files to SolidWorks which is available on RMIT e-Campus.

I would take a course in CATIA in semester 2 – 2017.

**Project Communication Management:**

Communication of Dr Kajtaz would be through professional Website:

<http://ewindfly.shubayr.net> tab: **Contact US**

There would be a new web page in above website which **project files** would be stored there and can be accessible by a **password**.

Afsaneh uses her email: afsaneh.cooper@shubayr.net to communicate with Dr Kajtaz, as her prospective supervisor. The files she sends would be saved on ewindfly website, accessible by typing “a letter + a digit” in search box of the home page.

Afsaneh’s Phone numbers: +61 8 6377 8483 or +61 437 635 038 all these are on ewindfly website.

For proper project management, the website: [www.teamwork.com](http://www.teamwork.com) would be used. This website also has a chat box for project team members. Teamwork is the world best project management cloud for students.

**Project Quality Management:**

If **phase I** was approved by Dr Mladenko Kajtaz, **Phase II** starts. **Phase II** is enrolling at RMIT as a PhD student. The PhD proposal should be to the quality standards stated on RMIT Website. This means it should add a new knowledge to the existing knowledge in the field of the project. It should be innovative too.

A proper project proposal that addresses a research problem should be written. As this project is something I am proposing, Dr Kajtaz needs to make an assessment whether they have enough research scope for it and whether it is within his research area / interest. Once we are on the same page when it comes to my project, then we can talk about everything else. Without a preliminary literature review that identifies a need and a research gap, we are not able to go anywhere.

All this is under an assumption that no scholarship is to be provided by Dr Kajtaz, as he does not have a budget for it.

In a project proposal, Dr Kajtaz is expecting to see the following 11 questions addressed:

1. Title:
2. Problem Description:
3. **Why is this problem?**
4. **What are you going to do about it?**
5. **How are you going to do it?**
6. **Deliverables**
7. Timeline
8. All arguments substantiated with references from a literature review.
9. Please note, the project needs to have fundamental scientific/academic research questions.
10. In other words, there needs to be a scientific problem that you'll spend time on solving.
11. Even if it is an innovation/product development, there should be a fundamental scientific problem that the product solves.

Yours faithfully

Afsaneh Cooper