① 5mm Squares

12R019 - PROPOSALS FOR RESEARCH   22-MAR-12

Aim - this document gives hints about key areas that research proposals should cover.

1. **Aim** : Carefully explain what you are trying to do in the project. Be clear and concise.

2. **Significance** : Why is your project important? What difference will it make to the world? Can you quantify (measure or estimate) what improvements you are making?

3. **Key Requirements** : What requirements do you need to meet for the project to be successful? Be as detailed as possible using numerical values. For instance:

Rather than saying it must be high efficiency, say it must have an efficiency > 80% at rated output.

Rather than saying it must be road registerable, specify the specific requirements applicable, for instance: centre of mass, emergency disconnects, etc.

4. **Demonstration/Outcome** - what do you expect do you expect to demonstrate/show at the end of the project? Be as specific as you can.

5. **Block Diagram** - show a block diagram of your proposed concept, describing its input/output interfaces. Describe its internal subsystems. Explain the key operating principles.
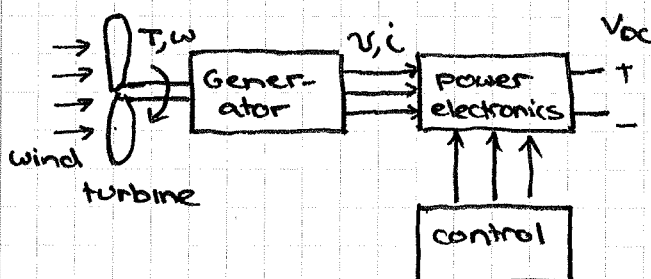
6. **Literature Review** : Is this a new idea? What work has been done in this field before? What are you planning to do which is different? (see 12R014 - Literature Reviews)

7. **Relevant Theory** - What are the key principles/theory which is related to this proposal? This theory may be important to understanding the significance, or the approach which will be used.

8. **Key Challenges** - What are the most difficult technical aspects of the project and what approach(es) do you plan to use to solve these? Understanding the key issues is critical to solving them!

9. **Milestones** - What are the key milestones which you need to achieve in your project? When do you need to accomplish them by, and who in the team is responsible for each one (assuming a group project)?

10. **Resources** - What are the resources which you will need to finish your project? Aspects to consider include: budget, access to equipment and test facilities, and access to technical support/workshop assistance.

11. **Key Risks** - What things are likely to go wrong in your project? What things could cause you significant problems if they occurred? What actions can you take to reduce or avoid these risks?

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