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SUnORE Generic Skills

How to prepare for and conduct yourself in an oral examination

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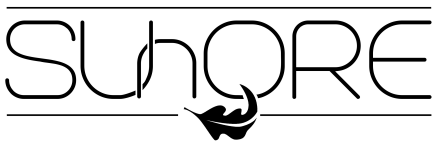

October 22th, 2021

Our Agenda for Today

- The examination process & criteria
  - A final-year skripsie
  - A masters thesis
  - A PhD dissertation
- How to prepare
  - What to do before the examination
  - How to behave during the examination
  - What to expect during question time
- Next week's programme.

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The Examination Process & Criteria

The Process of Handing In

1. Bring along an electronic copy of the final draft of your document
2. Also bring the last bescribbled versions of the chapters
3. Student & supervisor go through each page of the final draft
    - checking the last few corrections
    - checking for page break & alignment problems
    - checking the placement of floats
4. Certain changes may have to be made
5. Thereafter the student submits skripsie/thesis/dissertation electronically together with additional required documents
6. Try to submit well in advance of the actual deadline
7. After the examination process, final corrections may be required (only then bind the document nicely)
8. Please deliver a hardback bound copy of your document to your supervisor and another one for the lab (not skripsies).

The Examination Process — A Skripsie

1. An independent internal examiner and an independent external examiner are appointed before submission
2. Hand-in deadline: **5 November 2021**
3. No research or conference papers are required
4. The student presents a closed 10min overview (on 29 Nov to 1 Dec) of the skripsie to the examination panel and supervisor (there is no public defense of the work)
5. A closed ($\pm$10 min) question session follows during which the examiners question the student (the supervisor can also ask questions, but this is usually kept to a minimum)
6. Mark out of 100 awarded based on 14 assessment criteria ($\geq$ 50: Pass; $\geq$ 75: Distinction).

The Examination Criteria — A Skripsie

The fourteen assessment criteria are based on:

1. Your problem statement
2. Your literature study and theoretical skripsie contents
3. Your ability to demonstrate problem solving skills
4. The quality of your application of tools, skills, methodologies
5. The quality of your numerical and other results
6. Critical challenging of assumptions & embracing new thinking
7. Your maturity when reflecting on the project
8. The quality of your written report
9. Your verbal communication skills (binary)
10. Your use of presentation media (binary)
11. Your non-verbal communication skills (binary)
12. Content of the oral presentation (binary)
13. Your ability to handle questions & critique
14. Your project management skills (supervisor only).

The Examination Process — An MEng Thesis

1. An independent internal examiner and an independent external examiner are appointed 6 months before submission
2. There are two hand-in deadlines:
   - **31 Aug 2021:** For those aiming to graduate in December
   - **18 Nov 2021:** For those aiming to graduate in March/April
3. One research paper must have been prepared (not submitted)
4. Upon receipt of 2 positive reports (based on 8 assessment criteria), permission is granted to defend
5. The student then presents a 20min overview (in Oct/Nov or in Jan) of the thesis to the public, who are allowed to attack his/her assumptions and/or results (currently a closed session)
6. A closed examination session follows during which the examiners question the student under the watchful eye of a non-examining chair (the supervisor observes silently)
7. Mark out of 100 awarded (≥ 50: Pass; ≥ 75: Distinction).

The Examination Criteria — An MEng Thesis

1. Have the study objectives and the problems that were investigated been formulated satisfactorily?
2. Does the thesis show conversance with and a critical attitude towards the pertinent literature?
3. Is the material presented clearly, systematically & logically?
4. Does the thesis show that the candidate is sufficiently familiar with the relevant research techniques and methods and have the research results been interpreted correctly?
5. Is the linguistic, stylistic and technical editing acceptable?
6. Does the candidate show signs of independent, critical thinking or other signs of originality?
7. Does this investigation contribute to the knowledge of or insight in the relevant field of study? Are new aspects in the field of study, if any, clearly identified?
8. Is the work acceptable for publication?

Outcomes of the Examination Process (MEng & PhD)

A Provided certain factual or editorial changes are made *to the satisfaction of the supervisor*, the degree should be awarded

B Provided factual or editorial corrections are made *to the satisfaction of the examiner*, the degree should be awarded

C The candidate should be given an opportunity to revise and resubmit the thesis/dissertation

D The degree should not be awarded

The official outcome is the lowest of the symbols awarded by any of the the examiners

Upgrade requests to PhD are handled separately from the above symbol scheme.

The Examination Process — A PhD Dissertation

1. An independent internal examiner and 2 independent external examiners are appointed 6 months before submission
2. There are two hand-in deadlines:
   - **31 Jul 2021:** For those aiming to graduate in December
   - **21 Oct 2021:** For those aiming to graduate in March/April
3. At least 2 research paper must have been submitted (preferably accepted)
4. Upon receipt of 3 positive reports (based on 11 assessment criteria), permission is granted to defend
5. The student then presents a 30min overview (in Oct or in Jan) of the dissertation to the public, who are allowed to attack his/her assumptions and/or results (now closed)
6. A closed examination session follows during which the examiners question the student under the watchful eye of a non-examining chair (the supervisor observes silently)
7. Mark: $Z = \bigcap_{i=1}^{11} x_i$ ($Z = 1$ means pass; $Z = 0$ means fail).

The Examination Criteria — A PhD Dissertation

1. Have the objectives of the study been formulated satisfactorily?
2. Are the research results a meaningful contribution to knowledge?
3. Is there a clear distinction between own and new contributions?
4. Can the candidate evaluate the scientific meaning of results and place this in context within existing knowledge?
5. Is independent, original, critical thinking demonstrated?
6. Is the candidate sufficiently capable of doing independent research?
7. Is the candidate familiar with the relevant research techniques?
8. Is the candidate critical in respect of the pertinent literature?
9. Is the material presented in a clear, systematic and logical manner?
10. Is the linguistic, stylistic and technical editing acceptable?
11. Are the research results acceptable for multiple publications?

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What to do Before the Presentation

Plan together with your supervisor(s)

- It is your responsibility to book a planning session with your supervisor(s) — do it well in advance of the presentation
- Things to discuss:
  - Which parts of your work should be presented
  - Of these, which parts should form the focus
  - What level of technical detail should be included
  - How many slides should you have
  - What should be on each slide
- Make notes of the discussion
- Implement the suggestions of your supervisor(s) — they are based on experience.

Preparing your slides

- Preferably use Beamer (your work is already in LaTeX)
- Each slide should have a single, clear purpose
- Aim for:
  - Consistency across your slides
  - A minimalist look & feel (avoid clutter)
  - Use figures & tables rather than mathematics (if possible)
  - Fewer slides than minutes in your presentation
- Avoid:
  - Unnecessarily many logos
  - Full sentences
  - Extremely contrasting or very light colours
  - Excessive animation
  - Punctuation as far as possible
- Make sure your slides are carefully proofread
- Number your slides!

Compulsory slides

- A title slide (first slide), containing:
  - The full title of your skripsie/thesis/dissertation
  - Your name and that of your supervisor(s) — separately!
  - The degree for which you are defending
  - The date and presentation occasion (perhaps even a logo)
- An agenda or plan of presentation
  - This need not be the second slide of the presentation
  - Much like a table of contents in written work
  - It should be meaningful and orientate the audience
- A conclusion or summary slide
  - Recap what you have said very briefly
  - Help the audience form a clear picture of your work
- A slide containing key references (last slide)
  - Should be legible and in standard bibliography format
  - Don't include too many references (include your own work)
  - Avoid clapping hands, "Fine" or "Questions?"

The remaining slides

Perhaps include additional slides on:

- Your problem statement & study objective(s)
- Essential works in the literature (not skripsie)
- Your modelling / analytic approach (flowchart)
- Key assumptions in your work (list of key words)
- The results obtained (graphs & figures)
- A clear set of findings / recommendations
- An appraisal of / critique on your own work
- Ideas for possible future follow-up work (not skripsie)
- What the student has learnt, benefits of the work to society and ethical considerations (skripsie only).

Prepare what you will be *saying*

- Don't think your preparation is done when your slides are done
- Make careful notes of what you want to say about each slide
- Do not deviate from your planned verbal discussion
- The level of the audience should guide your presentation level
- Spend more time on the hard stuff and less on the easy stuff
- Explain your work to someone beforehand — amend your planned discussion to address what they didn't understand
- Allow enough time for your problem statement & conclusion
- Avoid technical detail in your explanations — big picture
- Plan the first two minutes word-for-word if you're nervous
- Litmus test: Can you replicate your presentation closely?

Practice it beforehand

- Practice your presentation a few times on your own (out loud)
- Practice in front of your girl/boyfriend or parents — they will be sympathetic and focus on how you come across
- Practice in front of your fellow students — they will tell you if you don't explain the technical detail well
- Practice in front of your supervisor — (s)he will give you improvement tips based on experience
- Once you know your presentation well, time yourself.

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During the Presentation

What to bring, wear & do before starting

- Aim to:
  - Arrive on time and load your presentation on the laptop
  - Put up your title slide before being introduced
  - Look clean, shaven & alert; come across as a professional
  - Make sure there is a glass of water available
- Avoid:
  - Shorts, hats, jeans & T-shirts with slogans
  - Plakkies, jogging shoes, open shoes & high-heel shoes
  - Too much makeup / looking too sexy
  - Wearing a suit (or even a tie)
- Bring along:
  - A flash disc containing your presentation slides
  - Your notes & a paper copy of your slides
  - A pen & copy of your written work.

Don't mess with the chairperson

- Allow the chairperson to introduce you — don't just start
- Don't repeat your name and presentation title if this is mentioned by the chairperson; otherwise start with your name & presentation title
- Stop when the chairperson says your time is up
- Don't end your presentation by inviting questions — it's the chairperson's prerogative to invite questions
- End your presentation by bringing up the references slide, merely saying "Thank you for your attention"
- Don't indicate to audience members to start asking questions when their hands are up.

Interacting with the audience

- Act professionally, avoid jokes and excuses
- Speak slowly and loudly (project your voice)
- Don't read your presentation from written notes
- Avoid irritating habits — saying uhm, moving to & fro, *etc.* (perhaps make a video of yourself talking beforehand to discover any irritating habits)
- Avoid moving backwards and forwards in your slides.

Getting the timing right

- Don't start out too relaxed — maintain good pace at the start
- Do not accelerate your presentation pace towards the end . . .
- Stick to what you planned to say; avoid going off on a tangent
- Practice out loud beforehand, timing yourself (preferably in the same venue you will be using for the real presentation)
- Make a video of any demonstrations that you want to give (and make sure the laptop supports the video file format)
- Prepare for the possibility of omitting a slide or two if time is tight — never stop abruptly before your conclusion.

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Afterwards . . . Question Time

Question time — General

- The purpose of question time is to gauge your level of insight and how well you have mastered techniques
- It is not an opportunity for the audience to attack you; therefore don't be on the defence — answer calmly & politely
- Generally examiners will already have formed an idea of the outcome of your assessment when question time starts
- How well you answer questions may, however, prompt them to adjust their assessment upwards or downwards
- There are generally nine types of questions.

Question types — i. Clarification questions

- Examples:
  - "Did I understand you correctly that . . . ?"
  - "Can you please explain again why . . . ?"
- These questions arise from an honest lack of understanding; they are typically not meant to test or stub you
- These questions are normally easy to answer merely by elucidating definitions, assumptions or methodology
- Take your time, perhaps go back to a relevant slide in your explanation.

Question types — ii. Informative questions

- Examples:
  - "Did you know that . . . ?"
  - "Are you aware of work by XYZ that is similar to yours?"
- This type of question is normally meant to make you aware of similar or related work not in your bibliography
- It is the easiest type of question to answer — either you are aware of the work, or you are not
- If the answer is "yes," you may elaborate on the work cited in order to demonstrate your knowledge and understanding of it
- If the answer is "no," then please make a note of the citation and mention that you will consult it.

Question types — iii. Scope questions

- Examples:
  - "Does your model account for the fact that . . . ?"
  - "Is it realistic to assume that . . . ?"
- The purpose of this type of question is to try and gauge the scope of your work and the reasons for its delimitation
- At most give a short reason for your scope delimitation rather than vigorously defending your scope
- Your supervisor must take the blame if examiners are not happy with your scope; (s)he may want to defend your scope (this may happen after you have left the room).

Question types — iv. Sensitivity probing

- Examples:
  - "For what range of the parameter x is your solution valid?"
  - "What will happen to your solution if . . . ?"
- This type of question is important (expect it) — it is meant to test the thoroughness & robustness of your work
- Of course you will have had to do extensive numerical experimentation in order to answer such a question.

Question types — v. Testing insight

- Examples:
  - "How do you explain the fact that . . . ?"
  - "Don't you find it strange that . . . ?"
- This is the most important type of question (it is likely to influence your mark / perceptions of the quality of your work)
- Make sure you understand the question before answering and take time to answer it carefully.

Question types — vi. Error indication

- Examples:
  - "You assume that . . . , yet . . . "
  - "Do you find your result that . . . believable?"
  - "Is it reasonable to assume that . . . ?"
- The purpose of this type of question may be to lead you to the discovery that you have committed an error in your work or it may be to gauge how critically you have though about your work
- Be sure to notice your supervisor's (body language) response to this type of question before answering
- Be gracious enough to admit it if you are convinced that you have made an error; try to gauge the effects of the error on your numerical work and final conclusions / recommendation
- Never try to fudge over the error or attempt to explain it away
- Your supervisor shares the blame for missing a serious error.

Question types — vii. Questions of trust

- Examples:
  - "Has this idea ever been applied successfully?"
  - "Have any applications of your idea/method ever failed?"
  - "XYZ tried this idea in the context of PQR and it didn't work there. Why should it work here?"
  - "Isn't it obvious that this will never work?"
  - "This is nothing but @#$%&!"
- This kind of question indicates serious doubts / mistrust about the realism, correctness or reasonableness of your work
- Although poor style, these questions do sometimes surface
- The aggressiveness of this type of question makes it very difficult to handle in a civil manner — keep your calm
- Try to answer by calmly posing a counter question aimed at gauging the reason(s) for the mistrust
- These questions are likely to rouse your supervisor from his/her slumbers . . . (perhaps after you've left the room).

Question types — viii. Opportunity induction

- Examples:
  - "Can you perhaps elaborate on . . . ?"
  - "You didn't have time to cover Chapter X, but can you explain what you did there?"
- Normally your supervisor will not ask questions, but if (s)he does venture a question, it will be this type of question
- The purpose is to provide you with an opportunity to explain something better or cover some work not presented
- The reason for the omission or poor explanation may be accidental or as a result of limited time
- This avenue will be opened up for you if your supervisor gauges that it may result in a better assessment
- In the case of excellent work, this may also be to drive home the standard of the work to examiners.

Question types — ix. Planted questions

- A planted question is a question you arrange beforehand to be asked by a friend or colleague
- The purpose may mistakenly be to show how well you know your work and how lucidly you can answer questions
- Examiners are skilled in detecting the fact that a question was planted
- Never engage in this sort of behaviour; it can make examiners negative about your work and/or ridicule you.

Question time — Tips & hints

- Make sure you understand a question before you answer
- Once understood, reflect a few moments before you answer
- Always be 100% truthful in your answer to a questions
- Be aware of your supervisor's body language after a question
- After questions you will be asked to leave and then a discussion of the standard of your work will follow
- Masters/PhD: At this point leave the meeting; you will be called back and informed of the outcome immediately
- Fourth years: At this point leave the meeting; you will *not* be called back — your supervisor will provide feedback informally afterwards.

When your supervisor enters the fray

Supervisors are normally silent, but may become involved:

- by asking a leading question in response to your answers
  - This normally happens when your answers were wrong / vague or only true in some cases
  - Your supervisor will hint at the nature of the problem
  - Pay attention to the lead and take it from there
- by asking an *opportunity induction* question
  - Use this opportunity as best possible, but don't be long-winded
- in an altercation with examiners
  - This only happens in rare cases (*e.g.* when the supervisor feels the student is being treated unfairly or is disrespected)
  - If this happens while you're in the meeting, stay well clear of becoming involved (always remain polite)

It is a good sign if your supervisor remains completely silent.

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When We Next Meet

When we next meet . . .

. . . Stephan will lead us in a localised

Capitec Hackathon