



FH WIENER NEUSTADT
BIOTECH CAMPUS TULLN
– Biotechnology & Digital Future –

Masterarbeitsseminar I

FH Wiener Neustadt, Biotech Campus Tulln

04.12.2021

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Masterarbeitsseminar I – Purpose:

- Start working on your master thesis prepared
- **Organize** your time/thoughts/ideas
- Supervisor introduced to the schedule/requirements
- Apply knowledge/learn about planning experiments/projects
- Finish on time (reuse parts for writing your Master Thesis)





Structure

Abstract + List of Abbreviations

1. **Topic of the project** (approx. 1 page)
Describe the project and its goals
Why is this research of interest? (for the society, research community, hosting institution, yourself)
2. **State of research** (2-3 pages)
Overview of the relevant publications and studies published to date on the topic
3. **Research question of the Master Thesis** (1-3 pages)
Indicate explicitly what research question you will be focusing on in your master thesis.
Divide your main research question into several sub-questions
4. **Illustration of the chosen research methods** (1-3 pages)
5. **Project time plan and milestones** (approx. 1 page)
General plan of how you go about answering your research question
6. **References** (approx. 1 page)



Abstract (1/2)

- Why do we write it:
 - To summarize our research (key information)
 - To make a reader interested in reading the full article (“selling”, but not “overselling” point)
- How it should look like:
 - Short and concise (the most important information with the least words necessary)
 - Written last
 - Usually 100-300 words, 1 paragraph, written in past tense



Abstract (2/2)

- Composition:

- Introduce research problem
- Touch very briefly previous research
- Describe what you did
- Data, research and analytical methods you used
- Major findings and implications (aka Conclusions)

Descriptive
abstract
100 words
(rare)

Informative
abstract
300 words

- Choose whichever you consider appropriate.



1. Topic of the project (approx. 1 page)

- Describe/**justify** the project and its goals ("**grant proposal**", broader sense of a project)
- Why is this research of interest?
 - for the society (e.g. will it improve sth, speed it up, lower the costs, is it of general usage, or in a specific area) – social/economical benefits
 - research community (scientific benefits)
 - **hosting institution (consult your supervisor)**
 - yourself (optional)



2. State of research (2-3 pages)

- Overview of the relevant publications and studies published to date on the topic
- **Introduction** of a paper/article
- Start with general terms (“analyze”/explain the title)
- Layer/narrow it down to the topic
 - “Web-Based Automatic Variant Identification, Filtering and Annotation of Amplicon Sequencing Data in Cancer Patients”
- **State the problematic, support and justify your research with relevant publications** (e.g. what is so far not known, which method does not exist)
- **Cite properly** (rephrase, don’t quote)

3. Research questions/hypotheses/goals of the Master Thesis (1-3 pages)



- Indicate explicitly what research question you will be focusing on in your master thesis
- Divide your main research question into several sub-questions
- The last part of the Introduction (in a paper) – but: “we are going to...”

4. Illustration of the chosen research methods

(1-3 pages)

- List the methods you will be using
- Under each method describe:
 - Reason to be chosen (e.g. "this method/tool/approach will help me to...")
 - What does this method do (describe in general)
 - How do you plan to apply/implement it
 - What will be your input for it
 - What is expected to be an output (data types/information...)
 - Alternative approaches (potential problems, what if this does not work)
 - Cite tools

5. Project **time plan** and milestones (approx. 1 page)



- General plan on how to answer your research question
 - **For each milestone approximate time duration**
- **Consult your** supervisor
- Alternative timeplans (plan B) - optional



6. References (approx. 1 page)

- All in one format:
 - Numbered in the text
 - Journal names abbreviated
- Use any tool for citations
- Examples:

We followed suggestions from recent publications [\[5,6\]](#) and used a combination of aligners and mutation (variant) callers to gain higher accuracy. VARIFI requires minimal computational experience and no in-house computing power since the analyses are conducted on our server. Running VARIFI ensures that the sequenced data are all processed in a coherent and standardized way, which in turn facilitates reproducibility and comparability between different samples.

References

1. Meldrum, C.; Doyle, M.A.; Tothill, R.W. Next-generation sequencing for cancer diagnostics: A practical perspective. *Clin. Biochem. Rev. Aust. Assoc. Clin. Biochem.* **2011**, *32*, 177–195. [[Google Scholar](#)]
2. Rehm, H.L. Disease-targeted sequencing: A cornerstone in the clinic. *Nat. Rev. Genet.* **2013**, *14*, 295–300. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)]
3. Mendez, P.; Dang, J.; Kim, J.W.; Lee, S.; Yoon, J.H.; Kim, T.; Sailey, C.J.; Jablons, D.M.; Kim, I.J. Comprehensive evaluation and validation of targeted next-generation sequencing performance in two clinical laboratories. *Int. J. Oncol.* **2016**, *49*, 235–242. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)]

No links necessary.



Deadlines, grading...

- Deadlines:
 - **Filing deadline (Abgabefrist):** 16.01.2022, 23:59 for the written proposal
 - 25.01.2022, 14:00 deadline for the presentation submission
 - 25.01.2022 onwards: Presentation (15') + Discussion.
- Grading:
 - Written part: 60 points
 - Presentation+discussion: 40 points
 - Notenschlüssel:
 - 0-50 points: grade 5 (nicht genügend)
 - 51-65 points: grade 4 (genügend)
 - 66-80 points: grade 3 (befriedigend)
 - 81-90 points: grade 2 (gut)
 - 91-100 points: grade 1 (sehr gut)
- Template (Vorlage) - optional



Current status of the Master Thesis

- Discussion
 - Previous experience in writing
 - Start date
 - Supervisor (+ FH supervisor)
 - Institution
 - Task: Draft the proposal (10-12')