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Methods in Empirical Musicology 2

How to work & write like a scientist

1. Schedule: Wednesday, 16:00-19:30

W#	S#	Seminar	Übung	Assignment	Note
16	1	Research ethics			
17	2	Statistics (a): descriptive	Individual progress review		
18	-				(May day)
19	-		-		(Sick)
20	3/4	Statistics (b): probability	Statistics (c): inference		
21	-			[assi-01] data	(Berlin)
22	5	Statistics (d): linear models	Individual progress review		
23	6	Statistics (e): multiplicity	Individual progress review		
24	-			{assi-02} code	(Helsinki)
25	7	Writing (a): methods & results	Individual progress review	[assi-02] code	
26	-				(Seoul)
27	-				(Seoul)
28	8	Writing (b): intro, discussion, & abstract	Individual progress review		
29	9	Wrap-up		[assi-03] paper	

Teaching period: 02. Apr. 2024 – 20. July. 2024. | Module exam: July? | W#: Week number

2. Assignments

Topic	Due (23:59)	What to submit	Grading criteria (see below)
Data collection	25 May	Acquired data	Data
Data analysis	15 22 Jun	Analysis code & results (short report)	Code
Everything	20 Jul	Term paper (full report)	Writing

- Submission deadlines
 - On the designated date, until 23:59 Central European (Summer) Time (CET/CEST)
 - In case of a **late submission**, the grade will be discounted by 10% **after** each day (24 hours): $(OriginalScore \times (0.9)^{DelayedDays}$; i.e., 48% after 7 days, 4% after 30 days); within **the first 24 hours of delay**, no deduction will be made.
 - Extensions will be considered in case of unexpected emergencies and health issues, provided they are supported by official documents.
- Grading criteria of mini-assignments
 - **Data**: {Minimal Power ($N \geq 5$) + Clarity in Curation} \times -Fabrication $\in \{-1, 1\}$
 - **Code**: Executability (no syntax error & portability) + Human-readability + Validity (no semantic error & doing the intended tasks)

- **Writing:** {Novelty in Ideas + Logic in Ideas + Clarity in Writing + Completeness in Writing} ×
-Plagiarism ∈ {-1, +1}

$$\text{Total grade} = \sum_{i=1}^2 25\% \times [\text{assignment \#}i] + 50\% \times [\text{assignment \#}3]$$

3. Contacts

- MOODLE (course site): <https://moodle/hfm-karlsruhe.de/moodle/>
- Zoom: <https://eu01web.zoom.us/my/sgkim>
- Email: seung-goo.kim@ae.mpg.de

4. References

- Empirical Music Research:
 - Clarke et al., 2004, *Empirical Musicology: Aims, Methods, Prospects*, Oxford University Press, <https://doi.org/10.1093/acprof:oso/9780195167498.001.0001> (closed access)
- Psychological methods:
 - Jhangiani et al., *Research Methods in Psychology* (Ed. 4), <https://kpu.pressbooks.pub/psychmethods4e/> (open access)
- Statistics:
 - *Introductory*: Oja, 2022, *PSYC 2200: Elementary Statistics for Behavioral and Social Sciences*, LibreTexts, [https://stats.libretexts.org/Courses/Taft_College/PSYC_2200%3A_Elementary_Statistics_for_Behavioral_and_Social_Sciences_\(Oja\)](https://stats.libretexts.org/Courses/Taft_College/PSYC_2200%3A_Elementary_Statistics_for_Behavioral_and_Social_Sciences_(Oja)) (open access)
 - *A bit more rigorous*: Heumann et al., 2016, *Introduction to Statistics and Data Analysis*, Springer, <https://doi.org/10.1007/978-3-319-46162-5> (open access)
 - *Discussion related to p-hacking*: Gruber et al., 2020, *The Theory of Statistics in Psychology*, Springer, <https://doi.org/10.1007/978-3-030-48043-1> (open access)
 - James et al., 2021, *An Introduction to Statistical Learning*, Springer, free PDF: <https://www.statlearning.com/>
 - Hastie et al., 2009, *The Elements of Statistical Learning*, Springer, <https://doi.org/10.1007/978-0-387-84858-7>
- Neuroscience:
 - *Comprehensive reference*: Purves et al., 2018, *Neuroscience* (Ed. 6), Oxford University Press, <https://learninglink.oup.com/access/purves-6e> (closed access)
 - *Auditory-specific*: Poeppel et al., 2012, *The Human Auditory Cortex*, Springer, <https://doi.org/10.1007/978-1-4614-2314-0> (open access)
- AI-aided learning & writing:
 - ChatGPT: <https://chat.openai.com/>
 - ZeroGPT: <https://www.zerogpt.com/>
- Music Information Retrieval (MIR) packages:
 - *Essentia*: <https://github.com/MTG/essentia>
 - *librosa*: <https://github.com/librosa/librosa>
 - *madmom*: <https://github.com/CPJKU/madmom>
 - and more: <https://www.ismir.net/resources/software-tools/>
- Psychological experiment development tools:
 - jsPsych: <https://jpspsych.org/>
 - Lab.js: <https://lab.js.org/>
 - PsyNet: <https://www.psynet.dev>

- Hosting platforms:
 - Cognition: <https://www.cognition.run/>
 - Google Forms: <https://docs.google.com/forms/>
 - Lime Survey: <https://limesurvey.org>
- R
 - Advanced R <https://adv-r.hadley.nz/> (open access)
 - R for Data Science <https://r4ds.hadley.nz/> (open access)