

Longitudinal Teaching Module

Scientific Competence

(Wissenschaftskompetenz = **WIKO**)

Research Trimester and Thesis



Scientific competence - how can this be achieved?



- WIKO is a proposal to students.
- Students can choose among a variety of courses and teaching elements.
- Attendance is not mandatory for all units.
- Allocation of ECTS points is achieved via larger courses within the curriculum.
- Quality control is obtained at the stage of thesis submission and defence.



Overall aim of the course

WIKO extends throughout all 5 years of the academic studies and aims at supporting students in reaching the graduate profile.

„ ... Graduates .. are able of reaching scientific decisions through critical discourse with the current state of knowledge. They are skilled in connecting scientific data and medical practice via creative thinking [...]“.



Specific aims of the course

- Communication and training of the **fundamentals of scientific practice**
- Communication and training of the fundamental skills of **scientific writing**
- **Professionalism** in academic and scientific activities



Course contents

- Scientific competence & scientific practice
- Formulating & testing theories
- Scientific writing
- Presentation & communication of scientific data
- The relationship of mentors to students
- Leadership in a scientific environment



WIKO – time lapse



Beginners seminar

hours

- Duties of an MD: *to cure, to research, to teach* 2
- Research trimester & overview of research possibilities 2
- Research at the PMU 2
- Visit of PMU and associated research labs 2



1st academic year		hours
- Definition of scientific competence	1	
- Hypotheses & theories		1
- Präsentation skills		2
- Planning an experiment		1
- Scientific writing (general)		2
- Reading & analyzing scientific literature		6



2nd academic year

hours

- Scientific theory and the philosophy of science 8
- From idea to product - scientific aspects 2
- Pool lecture „*Molecular Medicine*“ (compulsory optional subject) 2 x 18

3rd academic year

- The relationship of supervisors to students 1
- Presentation of available research topics for the research trimester 2
- Epidemiology & Statistics (USMLE Step1 focus) 40
- Reading & analyzing scientific literature 6



4th academic year

hours

- Refresher: working with databases 1
- Using Endnote 1
- How to start a scientific activity? 2
- Scientific paper writing & diploma thesis 2
- Evidence & individuality 2
- Responsibilities of students 1
- Responsibilities of supervisors & leadership
in a scientific environment 1
- Responsibilities of authors 1
- Responsibilities of employers in a scientific environment 1
- From idea to product - economic aspects 4



5th academic year

hours

- Tipps & tricks: Preparing for the defense
- Defense

1
6



Quality management process throughout the research trimester

Checklists:

1. List of available research topics and supervising laboratories
2. Checklist for supervisors
3. Checklist & timeline for students



WIKO - checklists

Research trimester and thesis Checklist for Supervisors / Mentors Part 1

Assignment	To be completed on	Confirmation by Supervisor / Mentor
Announcement of research theme (incl. hypotheses and specific questions to be addressed)	Feedback to PMU is required the latest 4 weeks prior to start of the research work	<input type="checkbox"/>
Work on this topic can be accomplished within 16 weeks to allow compilation of a thesis for submission by mid february (submission deadline). (A checklist containing all dates and deadlines is provided by the student).		<input type="checkbox"/>
The required infrastructure for execution of the proposed work package is available: Laboratory space, consumables, laboratory animals, patient data (patient data are accessible for the students without violation of data protection issues and respecting current ethics guidelines)		<input type="checkbox"/>
Other required permissions and rulings are available prior to the start of student's work, e.g.: approval for animal experimentation, ethic committee rulings, radiation protection permission. PMU or PMU students do not cover incurring costs for permissions		<input type="checkbox"/>
The methodological bases for execution of the work are established in the host laboratory		<input type="checkbox"/>
Compliance with the current regulations for graduation is approved by the supervisor / mentor		<input type="checkbox"/>
I acknowledge that the thesis has to be made available to the general public (Veröffentlichungspflicht § 86 des Universitätsgesetzes 2002).		<input type="checkbox"/>

I herewith confirm to provide all necessary requirements and conditions for the execution of a research thesis (Promotionsarbeit) in accordance with the current guidelines for a research trimester study at the PMU.

.....
Place, Date

.....
Name of Supervisor / Mentor (printed name)

Signature



Research trimester and thesis Checklist for Supervisors / Mentors [Part 2](#)

Assignment	To be completed on	Confirmation by Supervisor / Mentor
Approval of the thesis by the Mentor for official submission to the PMU within 4 weeks of submission to the supervisor (on Approval form). Submission of thesis by the student between January 15 and 31.	Submission deadline	<input type="checkbox"/>
Plagiarism monitoring: electronic monitoring of potential plagiarism of the submitted thesis is initiated by the PMU.	Invitation by PMU Student Services	<input type="checkbox"/>
Assessment: Official assessment of the thesis by the Supervisor / Mentor (on Assessment form).	Invitation by PMU Student Services	<input type="checkbox"/>
Defensio: Participation in and preparation for the thesis defense is mandatory for supervisors / mentors. In well justified cases delegation of a substitute is acceptable.	Invitation by PMU Student Services	<input type="checkbox"/>

.....
Place, Date

.....
Name of Supervisor / Mentor (printed name)

Signature

WIKO - checklists

Research trimester and thesis Checklist & Timeline for students

..... (Name / JG)

In the case of substantial changes to the program or problems during the writing time please contact PMU/Student Services

Assignment	To be completed	Completed
Initiate contact with supervisor / mentor	6 weeks prior to the start of the research trimester	<input type="checkbox"/>
A research theme (incl. hypotheses and specific questions to be addressed) is available.	4 weeks prior to the start of the research trimester	<input type="checkbox"/>
Agreement with supervisor/mentor and checklist completed. - Signed by supervisor/mentor - Transmission of documents to PMU Student Services	The latest 1 week after the start of the research trimester	<input type="checkbox"/>
Short info mail to PMU Student Services regarding the overall situation of the research trimester	4 weeks into the research trimester	<input type="checkbox"/>
Research trimester thesis: Transmission to PMU Student Services of: - Introduction - Materials & Methods	8 weeks into the research trimester	<input type="checkbox"/>
Research trimester thesis: - Data generation and analysis is completed - Statistics calculation and analysis is completed - Results section is completed - Literature list is completed	End of research trimester	<input type="checkbox"/>
Research trimester thesis: - Discussion - Final approval of the thesis (for official submission) by the supervisor	End of writing time 15.01.	<input type="checkbox"/>
Research trimester thesis: Submission by student - Plagiarism monitoring initiated by the PMU. - Review/Assessment process: initiated by the PMU.	Mid February, 5. SJ	<input type="checkbox"/>



Defence

Presentation 7 min + 5 min discussion

3 parallel sessions (3 x 2 Slots) , 8 students/session

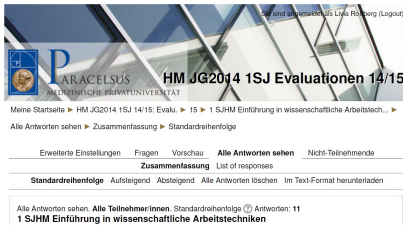
Session 1:	11:00-12:40
Session 2:	13:00-14:40
Session 3:	15:00-16:40

Audience:

- Coordinator WIKO, FBL HM oder SGL HM als Chair
- Supervisors (substitutes accepted in justified cases)
- All students defending that day
- One Member of the Deans offices
- 1or 2 newly appointed Associate Prof.



WIKO – aiming in the right direction



The screenshot shows a web interface for an evaluation. At the top left is the Paracelsus Medizinische Privatuniversität logo. The main title is 'HM JG2014 1SJ Evaluationen 14/15'. Below the title are navigation links: 'Meine Startseite', 'HM JG2014 1SJ 14/15: Evalu.', '15', and '1 SJHM Einführung in wissenschaftliche Arbeitstech.'. A secondary row of links includes 'Alle Antworten sehen', 'Zusammenfassung', and 'Standardreihenfolge'. A third row contains 'Erweiterte Einstellungen', 'Fragen', 'Vorschau', 'Alle Antworten sehen', and 'Nicht-Teilnehmende'. A fourth row has 'Standardreihenfolge', 'Aufsteigend', 'Absteigend', 'Alle Antworten löschen', and 'Im Text-Format herunterladen'. At the bottom, it says 'Alle Antworten sehen', 'Alle Teilnehmer:innen', 'Standardreihenfolge', and 'Antworten: 11'. The main content area shows '1 SJHM Einführung in wissenschaftliche Arbeitstechniken'.

*Da ich noch keine Erfahrung im Bereich der wissenschaftlichen Arbeit hatte, war diese Lehrveranstaltung **ein guter Einstieg** für mich.*

*Ich hoffe, dass dieses Fach auch **in den kommenden Jahren noch etwas vertieft** wird.*

*Es wäre also toll, wenn man **auch noch etwas später im Studium noch ein paar Stunden von diesem Fach** hat.*

*Ich hoffe, dass sich die Vorbereitung auf das Forschungssemester **wie ein roter Faden durch die nächsten Studienjahre** zieht.*



Thank you for your attention

