**T.3.1. RESEARCH METHODS + APPLIANCE**

1. **INTRODUCTION Content**

This module is designed to enable graduates to prepare and write scientific research, and the preparation of reports and proposals. Graduates will be able to identify stages of scientific research such as problem and objective identification, data collection, data analysis and their evaluations for hypothesis testing.

**Aims of teaching**

The course aims to teach the skill of “scientific writing” as a competence in developing knowledge by finding, using and working self-standingly on existing sources (text, image, practice) and to make the process of developing knowledge transparent as well as plausible for writer and audience.

**Course structure**

The course consists of input (by lectures and texts as well as by literature, appropriate for self-studying) and immediate appliance of the input. The appliance is related to an exercise, working on a self-selected theme: training all the steps of setting up a piece of scientific writing according to a provided list of working steps and comments from a provided excerpt of a handbook about learning the skill. The provided list of steps for working on the exercise can be used as an open framework for finding the right methodical approach to a specific theme.

**Learning outcomes**

A presentation of the process of “developing knowledge” (for attracting the audience) and a pure text (for self-approval to be able to apply the rules of the skill). Both the outcomes need to guide the audience/ the reader from a starting point of realizing and using existing knowledge throughout the process of developing the existing knowledge towards a final outcome of a conclusion which gives an answer to a valid thematic question.

* Preparing, conceptualizing and carrying out a scientific elaboration
* Developing existing knowledge by leading an argument with oneself or others – to be made transparent
* Defining the starting point of knowledge as the basis, ideally with reference to the international discourse about the subject
* Outlining and carrying out an appropriate research method relative to goals and objectives to be selected and reasoned
* Identifying, categorizing, evaluating and interpreting essential sources of knowledge relative to their places of availability (f.i. in archives, regional chronicles, document books, listings of preservation protection and monumental heritage)
* Applying sources from different places of finding for assessing the sources critically and setting up a valid catalogue of sources with scientific relevance per theme/ subject of investigation
* Relating sources of information back to their origins in science and knowledge production and evaluate/ apply them accordingly
* Developing, conceptualizing and carrying out empirical parts of research with reasons in accordance to the selection of method structure and existing theories
* Developing, applying and testing theories relative to case-studies
* Evaluation research outcomes per stage of developing knowledge relative to the starting point and to stages/ investigation
* Binding the selection of themes and methods to qualitative approaches, ideally based on holistic concepts for an environmental sustainability
* Synthesizing rational and intuitive knowledge by arguing according to “true judgement”
* Finding appropriate ways of presenting sources, their evaluation and appliance per theme/ subject of investigation
* Finding appropriate ways of addressing research results to different groups of (un-educated, non-scientifically skilled) people

**Form of examination**

Delivery of final presentation/ final text as the result of the working exercise, guided by two- weekly individual supervision by Email.

1. **EXERCISE: STEPS OF WORK** (individually to be applied relative to theme and methodical approach)
   1. **DEFINITION** - Research Interest: Theme, field, observations assumptions, resulting questions, reason/ motif for selection, relevance for the international discourse
   2. **Starting research activity** = Collecting information about the selected field
   3. **Defining starting point of knowledge**, developing knowledge from stage A to B to C to D …: reading, perceiving, following up existing information, widening range of aspects relative to existing questions, locally, regionally, globally; Consider:

- What do we know for certain? What do we want to know? How to achieve a valid answer?

* 1. **QUESTION/ ANSWERS - Clarify/ specify the research question** throughout the process of collecting and evaluating knowledge.
  2. **Narrowing down the research question** relative to an assumed focus (collecting further on/ evaluating)
  3. **Facing the focus** from different angles of view, enfolding a discussion with yourself.
  4. **Searching for values/ criteria** for answering. Setting a
  5. **HYPOTHESIS**
  6. **DISCUSSION: Values and criteria are showing the way to find an appropriate method** for working on the final conclusion by building up a position
     + philosophy of approach (intuitio + ratio)
     + sciences as a tool to be applied on the philosophy
     + position: way of judging on findings
     + testing the appropriateness of position and correcting it, if necessary
  7. **Definition: Preliminary answer** – to be confronted to the international discourse and discussed within the context of findings
  8. **CONCLUSION about a valid answer to a valid question**

|  |  |  |
| --- | --- | --- |
| **Session No.** | **Date** | **Topics & Sub-Topic with Instructional Objectives** |
| **Dessau**  **1** | 11th/ 12th  04.22 | **Failure of technology in Dessau/ Expression of major tasks by Email** |
| **2** | 25th/ 26th  04.22 | **INPUT: “About producing knowledge”; a critical- creative review of knowledge production/ Defining a theme “Productive Space”**  **EXERCISE:** Selection and evaluation of valid fields of interest in research, collecting sources of information, defining starting point of knowledge, setting up first questions and preliminary answers. Focus of research – Narrowing research question and differentiating preliminary answers, preparing for an appropriate method and defining values/ criteria from reviewing sources and resulting knowledge stages |
| **3** | 2nd  3rd  05.22 | **INPUT: Intro I-IV into content structure, teaching and learning goals, steps of exercise for creating an argument with one-self/ expected outcomes/ “Research – Grounded Theory”/Introduction into a flexible framework for finding appropriate methods/ theme. “Positioning”. Evaluating the stages of knowledge. External Lecture: Basma Massoud (2021),“Patterns” of Threshold spaces in the Historical City of Jeddah.**  **EXERCISE:** Hypothesis – Assuming a valid answer to the research questions, the derived answers and outlining the possible research findings |
| **4** | 16th/ 17th 05.22 | **INPUT: Readings from “A Manual for Writers (Chapters 1-4)”. “Defining and selecting a method” – Qualitative/ Quantitative, Inductive/ Deductive, Mixed Method**  **EXERCISE:** Questions about the stage of individual development of knowledge - From Question and first answers to hypothesis, preparing for the argument |
| **5** | 30th/ 31st  05.22 | **INPUT: Readings from “A Manual for Writers (Chapters 5-7)”. “Ways to evaluate theory and empiry”**  **EXERCISE:** Questions about the stage of individual development of knowledge - Preliminary answers to be evaluated by values/ criteria, searching for a completion of knowledge by case-studies, testing the hypothesis by discussing the answers/ Concluding with reasons |
| **Dessau**  **6** | 13th/ 14th  06.22 | **INPUT: “Variables - Object and Context: Different Assumptions”**  **EXERCISE:** Questions about the stage of individual development of knowledge - Preliminary answers to be evaluated by values/ criteria, testing the hypothesis by discussing the answers/ Concluding with reasons. |
| **Dessau**  **7** | 21st/  22nd  06.22 | **EXERCISE:**  First presentations of Research Theme/ Questions and Answers/ Method/ Hypothesis/ Discussion/ Conclusion (reasoned); |
| **Dessau**  **8** | 27th/  28th  06.22 | **EXERCISE:** Second presentations of Research theme/ Questions and Answers/ Method/ Hypothesis/ Discussion/ Conclusion (reasoned); |
| **Dessau**  **9** | 4th/5th 07.22 | **EXERCISE:** Third presentations of Research theme/ Questions and Answers/ Method/ Hypothesis/ Discussion/ Conclusion (reasoned); |
|  | 30th 07.22 |  |
| **10** | 8th/  08.22 | **Presentation of 10 finally selected best assignments** |

**Recommended Reference Material:**

**Books Recommended**

* + - **Burgess, R.G.(1982):** *Field Research: A Source Book and Field Manual*, London: George Allen &Unwin
    - **Carter, S., Guerin, C., Aitchison, C. (2020):** *Doctoral Writing. Practices, Processes and Pleasures,* Springer. Heidelberg
    - **De Jong, T.M., van der Voordt, D.J.M. (eds)(2002**): *Ways to Study and Research Urban Architectural and Technical Design*. Delft University Press, Delft
    - **Krikorian, G., Kapcynski, A. (2010):** *Access to knowledge in the age of intellectual property.* Zone Books. New York
    - **Nieuwenhuis, A., van Ouwerkerk, A. (eds.)(2000**): *Research by Design*, International Conference. Faculty of Architecture Delft University of Technology in co-operation with the EAAE/ AEEA, DUP Satellite. Delft. November 1-2. 2000
    - **Turabian, K.L. (2007):** *A Manual for Writers of Research Papers, Theses and Dissertations*, Chicago Style for Students and Researchers. Chicago Press. Ninth Edition. Chicago

**Research Papers/Articles recommended for reading:**

**- Ruge, W. (2009):** *Grounded Theory,* Ausarbeitung im Masterstudiengang „Visuelle Kultur und Kommunikation“ für das Forschungsseminar „Alter und Medien“ an der Otto von Guericke Universität, GSE, Fakultät für Geistes-, Sozial- und Erziehungswissenschaften, Magdeburg

**- Peter Alheit (1999): *„Grounded Theory“:*** *Ein alternativer methodologischer*

*Rahmen für qualitative Forschungsprozesse*, Göttingen, S. 1-9

**- Glaser, B. G./Strauss, A. L. (1979):***Die Entdeckung gegenstandsbezogener Theorie: Eine Grundstrategie qualitativer Sozialforschung.* In: Christel Hopf und Elmar Weingarten, Qualitative Sozialforschung, Stuttgart: Klett-Cotta, S. 91ff

**- Glaser, B. G., (1978):** *Theoretical Sensitivity. Advances in the Methodology of Grounded*

*Theory,* Mill Valley: The Sociology Press

**- Glaser, B.G./Strauss, A. L. (1967):** *The Discovery of Grounded Theory. Strategies for Qualitative Research,* Mill Valley: The Sociology Press

**- Strauss, A. /Corbin, J. (1996):** *Grounded Theory: Grundlagen Qualitativer Sozialforschung,* Psychologie Verlags Union, Weinheim

**- Strauss, A. L. (1991):** *Grundlagen qualitativer Sozialforschung. Datenanalyse und Theoriebildung in der empirischen soziologischen Forschung,* Fink, München

**- Strauss, A. /Corbin, J. (1990):** *Grounded Theory Research: Procedures, Canons and Evaluative Criteria.* In: Zeitschrift für Soziologie, 19, 418ff