

METODOLOGI PENELITIAN

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Program Studi Teknik Sipil

Program Pascasarjana

Universitas Bina Darma

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Topik yang akan dibahas

1. Introduction, Definition of Research, Research at Master Level
2. Topic Selection & Problem Formulation
3. Literature Review
4. Research Design
5. Methodology (Field data; Laboratory work; Numerical analysis; Simulation)
6. Data Collection
7. Results and Analysis, Statistical Analysis of Data
8. Writing and Presentation
9. Seminar & Conference Presentation
10. Guidelines

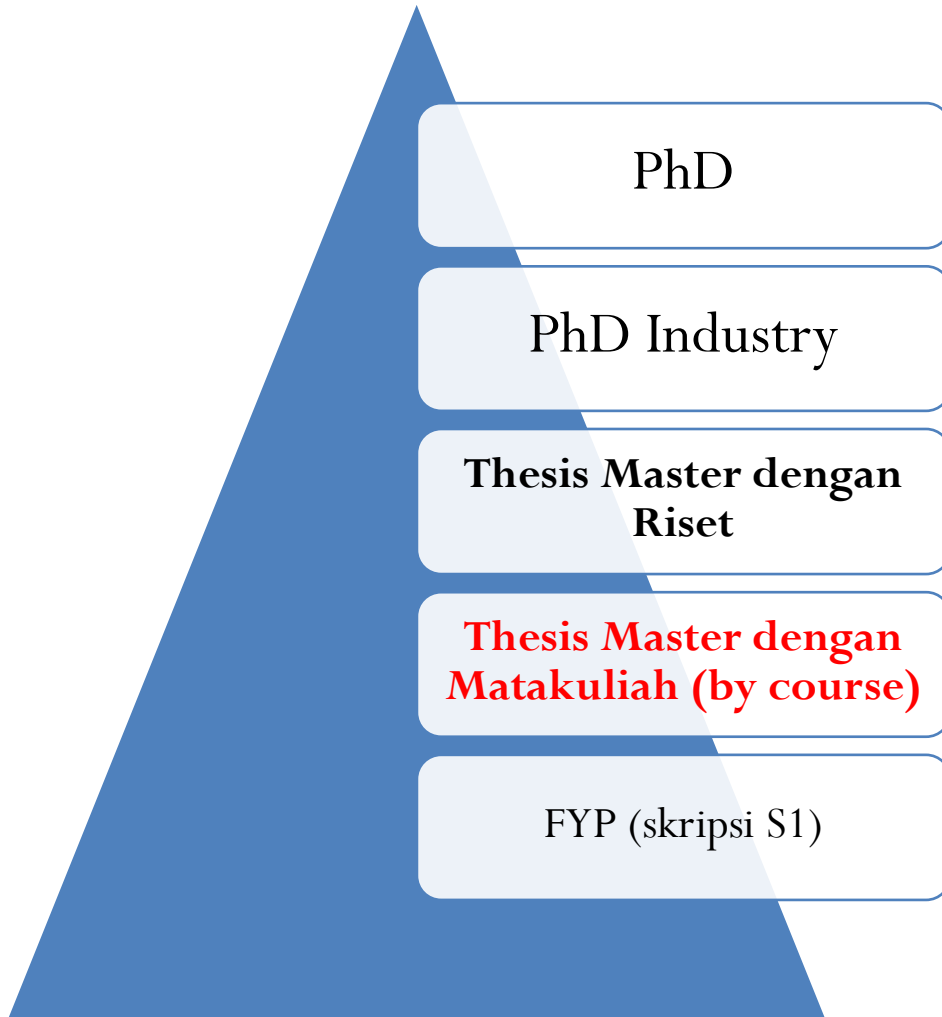
Sesi 1:

Pengenalan/Motivasi; Tingkatan
Penelitian, Penelitian di S2 Teknik Sipil
UBD, Sifat Penelitian / Riset

Motivasi untuk Penelitian dan Publikasi

- Bagi yang muslim, kita semua mengetahui bahwa ayat pertama yang diturunkan oleh Allah swt kepada Nabi Muhammad s.a.w. – (Al-Alaaq: 1-5) – adalah perintah untuk untuk MEMBACA untuk menambah khazanah ilmu pengetahuan, kemudian perintah untuk MENULIS kan pengetahuan tersebut dan MEMBAGIKAN (MEMPUBLIKASIKAN) kepada UMAT.
- **Maka:** Adalah wajib bagi kita untuk mencari pengetahuan, menyusunnya dalam bentuk yang bisa dimengerti, dan mempublikasikan nya.
- INI adalah proses **penelitian, penulisan,** and **publikasi!!!**

Tingkatan Penelitian



Beda Tesis S2 dengan Skripsi S1

- Berbeda dengan jenjang Strata 1, penelitian pada jenjang Strata 2 (Magister) sudah mengarah pada **penggunaan pengetahuan yang sudah ada pada pembuktian masalah yang diteliti.**
- Penulisan tesis telah mengarah pada suatu hal yang bersifat **argumentatif.**
- Kajian pustaka diarahkan pada pembahasan mengenai artikel ilmiah yang telah dipublikasikan.
- Mahasiswa diharapkan mampu memberikan komentar terhadap artikel ilmiah yang dikaji dan membandingkan hasil yang didapatkan dalam penelitiannya dengan hasil penelitian terdahulu.

Tesis Magister

- An ordered critical and reasoned exposition of knowledge gained through the student efforts.
- Contain evidence of **awareness of literature**.
- Some line of enquiry is expected with a brief descriptive account but **the validation and generalization are not required**.

This degree requires **three months of research work for a thesis**

Penelitian di S2 Teknik Sipil UBD

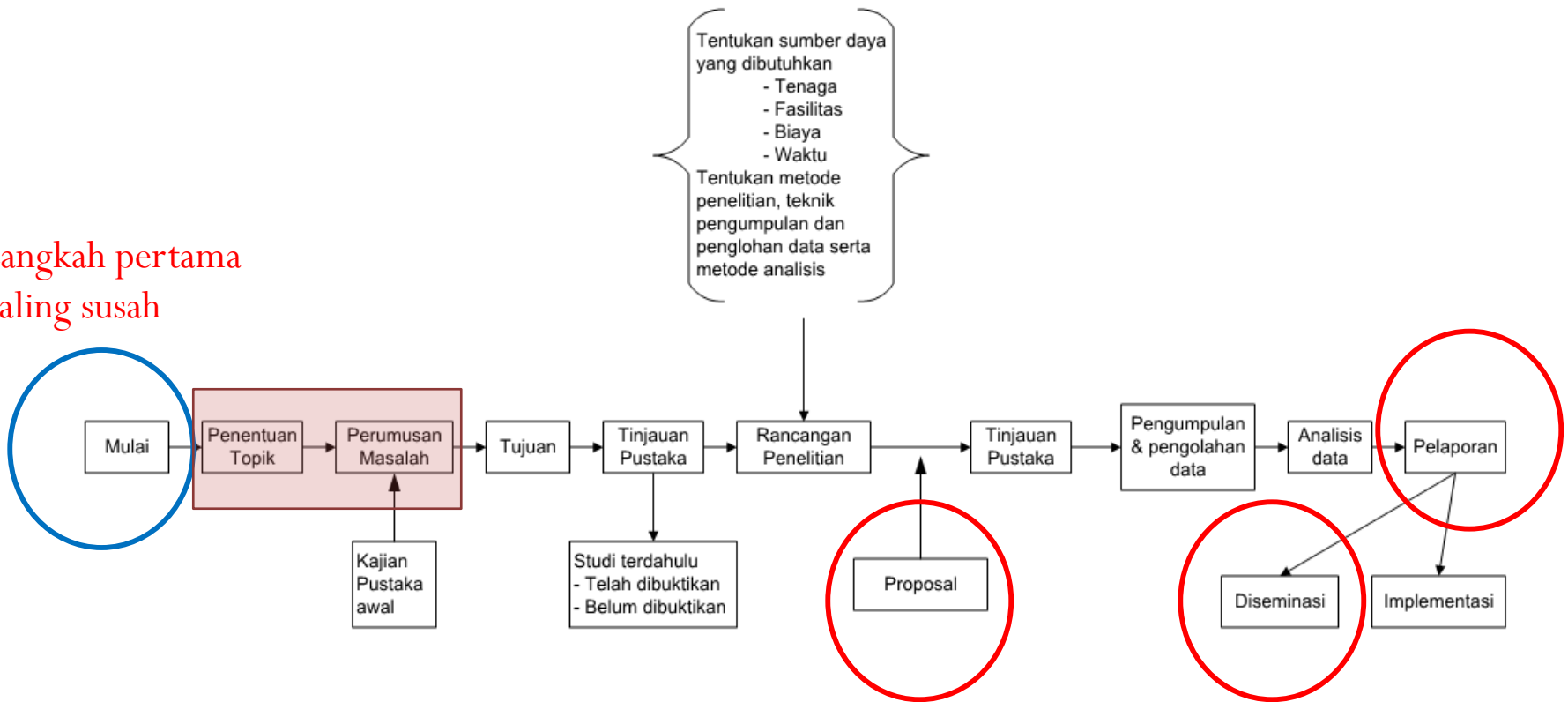
- Semester 1: MK Metode Penelitian
- Semester 2: Menentukan Topik dan Penentuan Pembimbing
- Semester 3: Proposal (Format), Presentasi Proposal
- Semester 4: Mengerjakan Penelitian dan Menulis Laporan (Format), Presentasi
- Publikasi Ilmiah

Proses Penyelesaian Tesis

- Proses penyelesaian tesis sangat tergantung pada inisiatif mahasiswa.
- Mahasiswa berdiskusi dengan calon pembimbing tesis untuk kesesuaian topik yang dipilih dengan konsentrasi dan bidang kajian bersangkutan serta calon pembimbing tesis, dan mengusulkannya kepada ketua program studi.
- Selanjutnya ketua program studi menentukan nama pembimbing tesis
- Pengukuhan atas ditunjuknya dosen pembimbing tesis

Langkah2 Penelitian

Langkah pertama
paling susah



Sifat Riset / Penelitian Ilmiah

- Sebelum menentukan Topik, Mahasiswa harus mengerti apa itu Penelitian Ilmiah.

Research is **systematic**, because it follows certain steps that are logical in order i.e.:

- **Understanding the nature of problem to be studied and identifying the related area of knowledge.**
- Reviewing literature to understand how others have approached or dealt with the problem.
- **Collecting data in an organized and controlled manner so as to arrive at valid decisions.**
- Analyzing data appropriate to the problem.
- Drawing conclusions and making generalizations.

Characteristics of a research

Research should follow scientific methods

This means that it makes an integrated use of **Inductive** and **Deductive** reasoning. This makes it very useful for explaining and predicting phenomena. The basic assumption of the scientific method is that **every effect has a cause**.

Inductive reasoning

- Construction of hypotheses from casual observations and background knowledge.
- From the examination of these, the researcher establishes certain expectations.

Deductive reasoning

- Reasoning out consequences or implications of hypotheses followed by testing of the implications and confirmation or rejection of the hypotheses.

Example of a research

Case

A general manager (GM) of a car producing company was concerned with the complaints received from the car users that the car they produce have some problems with rattling sound at the dashboard and the rear passenger seat after a few thousand kilometers of driving.



Example of a research (cont'd)

What he did?

He obtained information from the company workers to **identify** the various factors influencing the **problem**. He then **formulated the problem** and generated guesses (**hypotheses**). He **constructed checklist** and obtained requisite information from a representative sample of cars. He **analyzed the data** thus collected, **interpreted** the results in the light of his hypotheses and reached **conclusions**.

This is an example of research **because:**

- The researcher (GM) went through a **sequence of steps** which were **in order** and thus **systematic**.
- The researcher did not just jump at the conclusions, but used a **scientific method** of inquiry in finding answers or solution and then reaching at conclusions.

Langkah yang dilalui oleh GM

