



FAKULTÄT FÜR  
INFORMATIK

# Simulation Project 2026

Introduction

# Content

Overview of „Simulation Project 2026“

The Tasks

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# Goals of the Course

Put your knowledge of simulation into practice

Practice skills in ...

- Communication
- Teamwork
- Presentation
- Goal Setting
- Organization and Planning

Experience a real-life project

- Three real projects: Stadtplanungsamt Magdeburg

# Format

## "Lectures" will be milestone presentations

- Each team presents its milestone results
- Each presentation lasts 10 minutes
- Every team member must give a presentation
- *Presentations will be held: Mon 15-17 in G29-K059*

## "Exercise classes" will be individual team meetings

- To plan the project
- To assign tasks
- To prepare the presentations
- *You have to choose the time slot to suit the team and the coach*

# The Milestones

The project is organized in 8 milestones

- Milestone 1 – Forming your team 20.04.
- Milestone 2 – Plan 27.04.
- Milestone 3 – Conceptual Model 04.05.
- Milestone 4 – Data Analysis 18.05.
- Milestone 5 – Simulation Program 01.06.
- Milestone 6 – Validation 08.06.
- Milestone 7 – Experiments 22.06.
- Milestone 8 – Final Report 29.06.

Requirements are specified on the website

# Costs

You have to plan and account for costs.

Cost of one working hour: 100 €

Everything must be accounted for

- Team meetings
- Individual work, coordination, preparation ...

You do not have to pay for Milestone presentations (Lectures)!

# Roles and Responsibilities

## The roles are:

- Team Leader
- Conceptual Model
- Chief Software Architect
- Input Data
- Validation & Quality Control
- Experiments

## N.B.

- These are areas of **responsibility**, not work assignments!

# Team Meetings

The weekly team meeting is the key to success

Meetings should be used for:

- Decision-making
- Assigning tasks
- Reporting

NOT for:

- Figuring out what to do
- Discussing irrelevant details
- Arguing

# Team Meetings

Efficient meetings will allow the project to be

- On time and within budget
- Easy and fun

Inefficient meetings will make the project

- A lot of work
- Unpleasant and stressful

If you are responsible for a topic at a meeting

- You **must** be prepared!

The team leader **must** be a good discussion leader!

# Coaches

## Each team has a coach:

- Phil Moser, Claudia Krull

## Your coach will ...

- answer your questions
- help you to run your meetings
- prevent you from making serious mistakes

## He/she will *not* ...

- do your work for you
- tell you what to do (or even suggest it)

# Performance Criteria

## Each team chooses performance criteria

- For the project
- For each individual

## The team leader is responsible for

- Motivation
- Organization
- Milestones
- Holding the team to its performance standards

After the project, you will peer-review your performance based on feedback forms

# What is a Team?

## A team is ...

- a small number of people
- with complementary skills
- who are committed to
  - a common purpose,
  - performance goals, and
  - common approach
- for which they hold themselves mutually accountable.

See SchlüKo 2 lecture on Teamwork ...

# Project Management

A project is an endeavor which is

- unique
- complex
- goal-oriented

It has...

- a beginning
- an end
- limited resources

Not every activity qualifies as a project!

See SchlüKo 2 lecture on Project Management ...

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# The Projects 2026

## Projects from Stadtplanungsamt Magdeburg:

- Design and simulate variants to increase performance
- Optimize traffic flow at a node
- Evaluate planned redesign of a node
- Reorganize node to increase safety

Teams must decide on a topic today

# Simulation of crossroads and other nodes

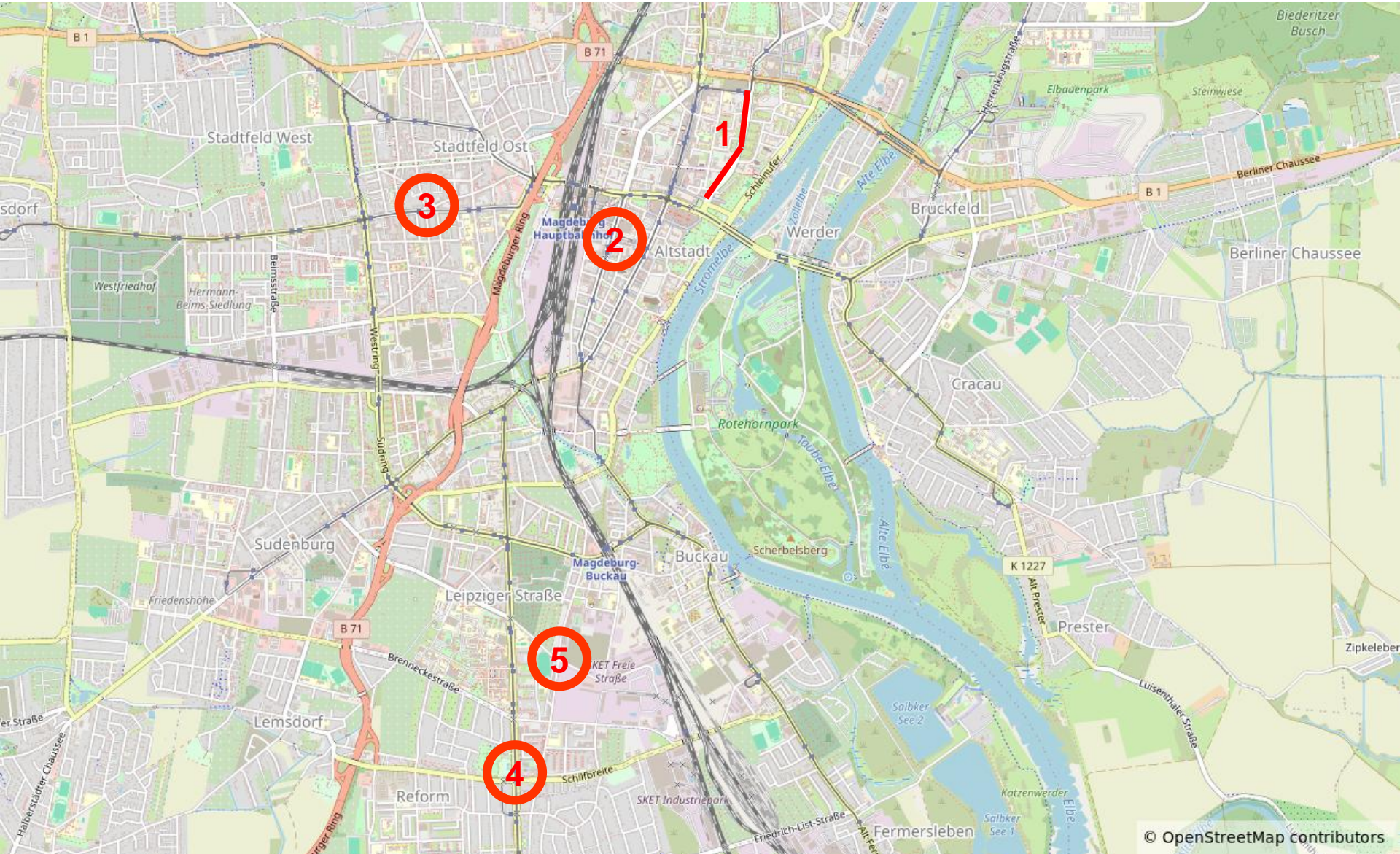
## Initial situation:

- Nodes are at maximum capacity and accident prone
- Situation could get worse

## Possible questions:

- Would rule changes influence the traffic flow? (Lights, Bypass, ...)
- Should single directions be allowed or blocked?
- How can traffic lights or precedence rules be improved?
- Which certain measures avoid accidents?
- What is their effect on the throughput of the node?
- What happens if the traffic load increases significantly?

# Location of the Projects



# Task 1: Jakobstraße / Gustav-Adolf-Straße

Main task: Determine feasibility of adding bicycle lane and reducing motorized traffic to one lane in both directions



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Main task: Determine feasibility of adding bicycle lane and reducing motorized traffic to one lane in both directions

## Task details:

- Evaluation of the traffic effects of the measures with, regarding change in traffic quality and quantity
- Determine advantages and disadvantages

## Available Data

- Vehicle counts

## Task 2: Hasselbachstraße

Main question: What is the effect of merging the two turning lanes on the south side of the street into one?



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Main question: What is the effect of merging the two turning lanes on the south side of the street into one?

### Task details:

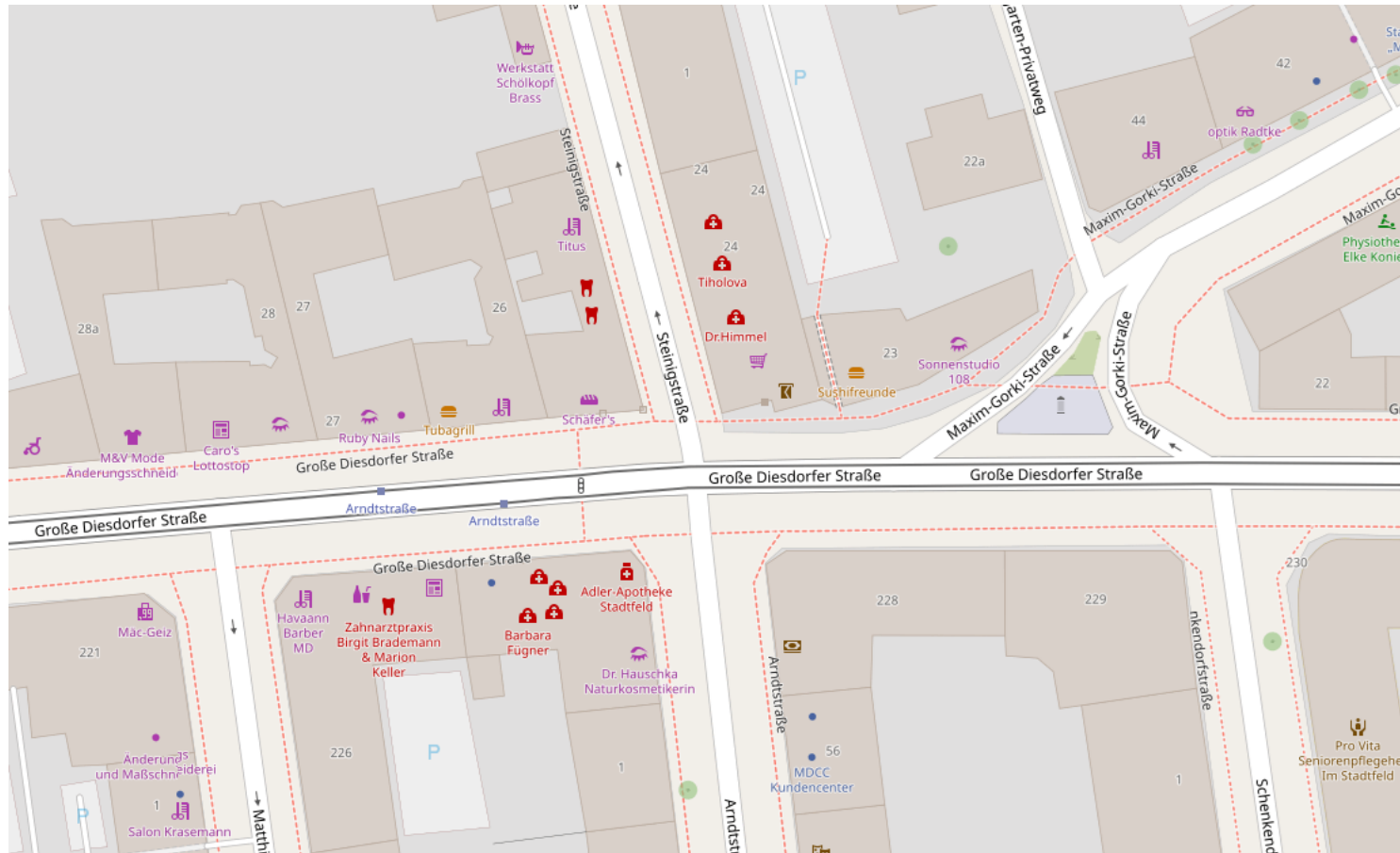
- Evaluation of the traffic effects of the measures with, regarding change in traffic quality and quantity
- Investigate effect of that on overall throughput and safety
- Make other suggestions on how to improve the node

### Available Data

- Accident statistics, (traffic light specification)

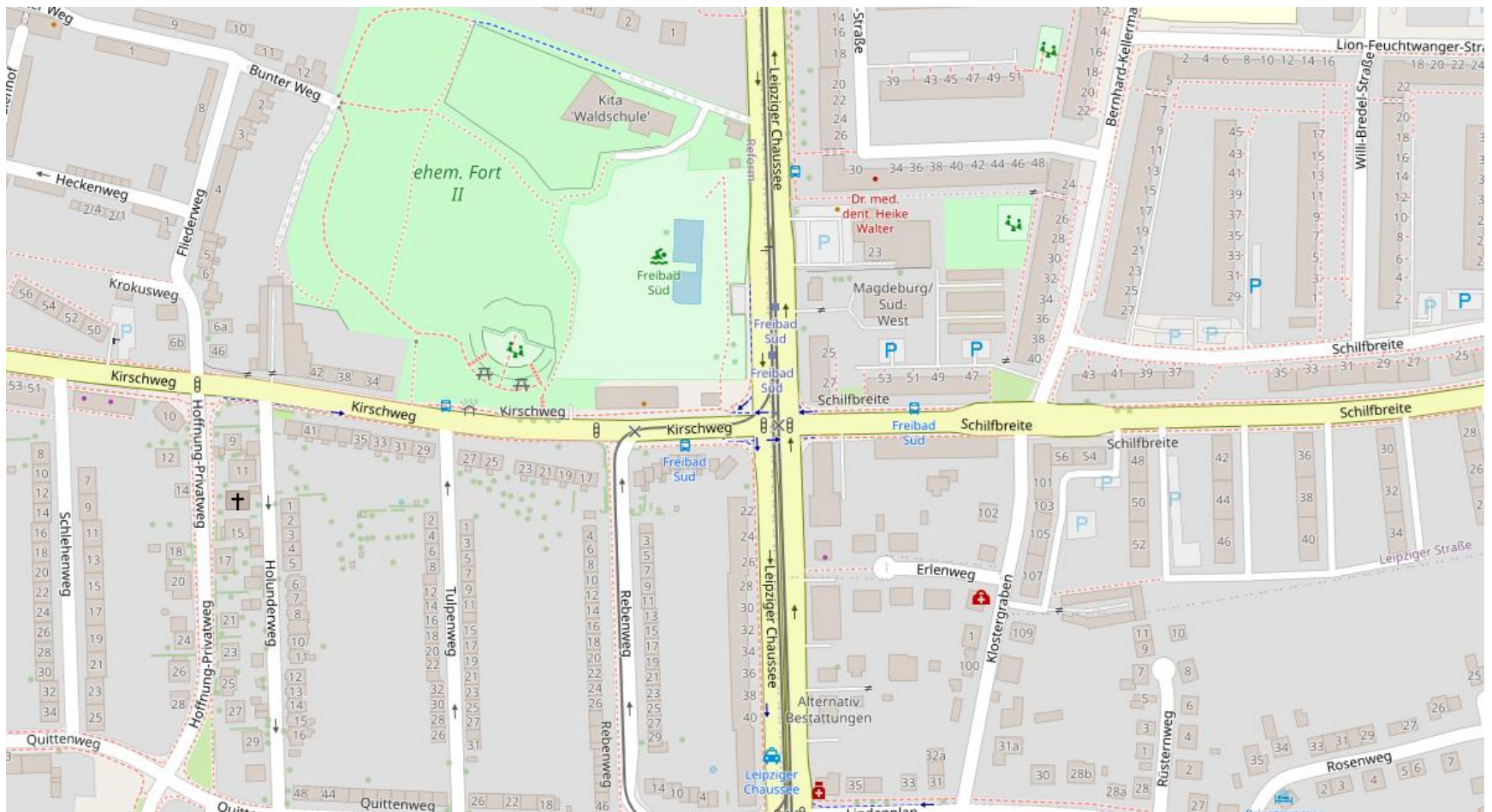
# Task 3: Große Diesdorfer Str. / Arndstr. / Steinigstr.

Main question: How can we improve traffic safety?



# Task 4: Leipziger Chaussee / Kirschweg / Schilfbreite

Main question: How can we improve traffic safety?



# Task 5: Roundabout Dodendorfer Str. / Bierer Weg

Main question: How can we improve traffic safety?



## Task 3 – Task 4 – Task 5

Main question: How can we improve traffic safety?

### Task details:

- Investigate measures to improve traffic safety based on accident statistics
- Investigate effect of that on overall throughput and safety
- Make other suggestions on how to improve the node

### Available Data

- Vehicle counts, accident statistics, (traffic light specification)

## Project Information

The results of this project are of interest for future traffic planning in the city of Magdeburg.

If you have any further questions, don't hesitate to ask

- we will either be able to give you the answer
- or ask our contact person in the city office

We might be visited by a city representative during the project.

- We will give you an advanced warning and expect professional presentations in front of our customer.

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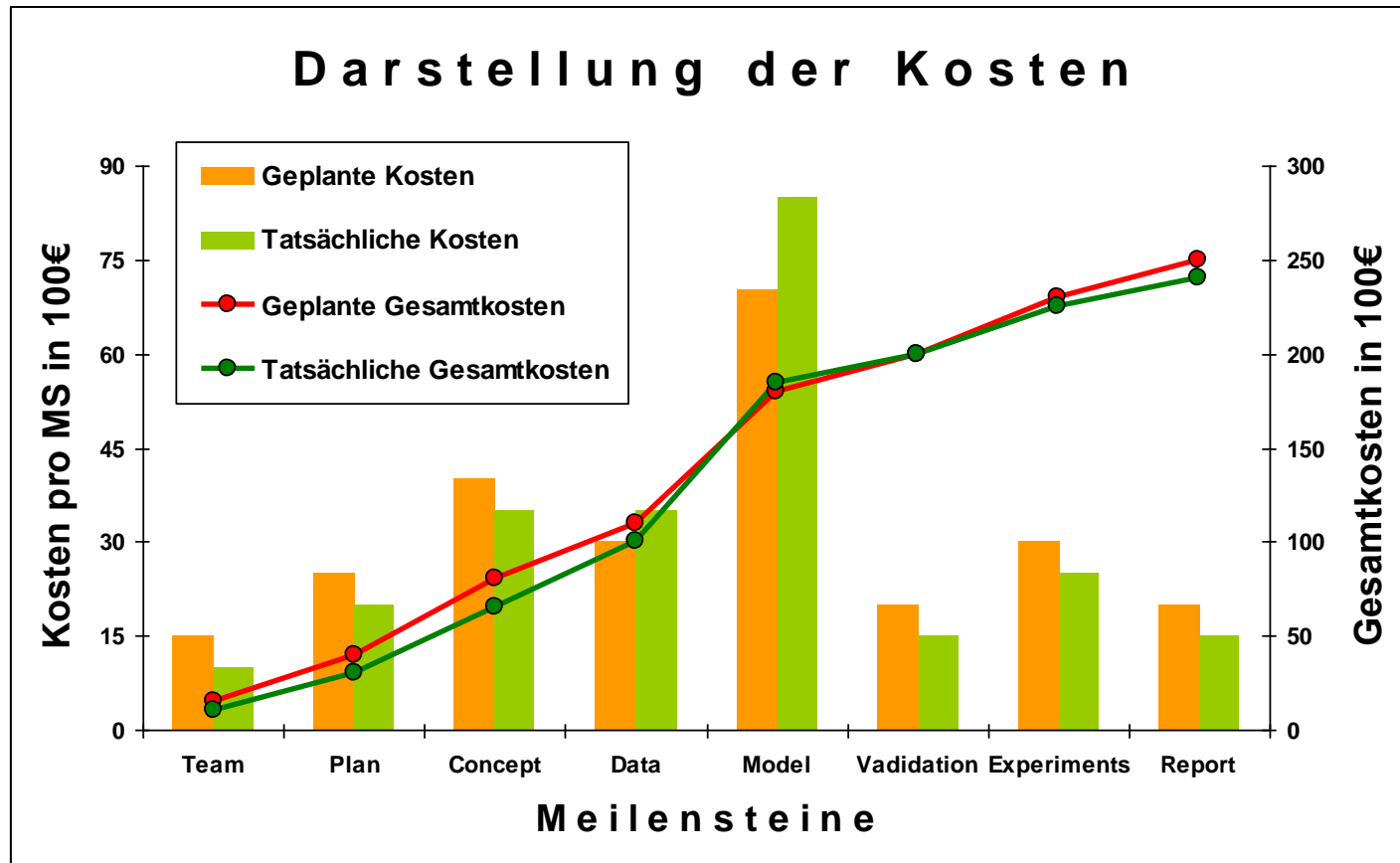
# „Rules“

## We will pay particular attention to:

- Consistent and honest billing of all costs
  - rework, team meetings, chatting, phone calls, thinking, programming, „staring at the code“, collecting data ...
- Realistic assessments of the individual milestones‘ progress
- Transparent presentation of deviations from the project plan; don‘t hide but explain these deviations in order for all to learn
- Cost planning must not be changed later on
- Homework for future Milestones 😊
- Slides we want to see in **every** presentation:
  - Current cost planning
  - Project progress monitoring
  - Lessons learned

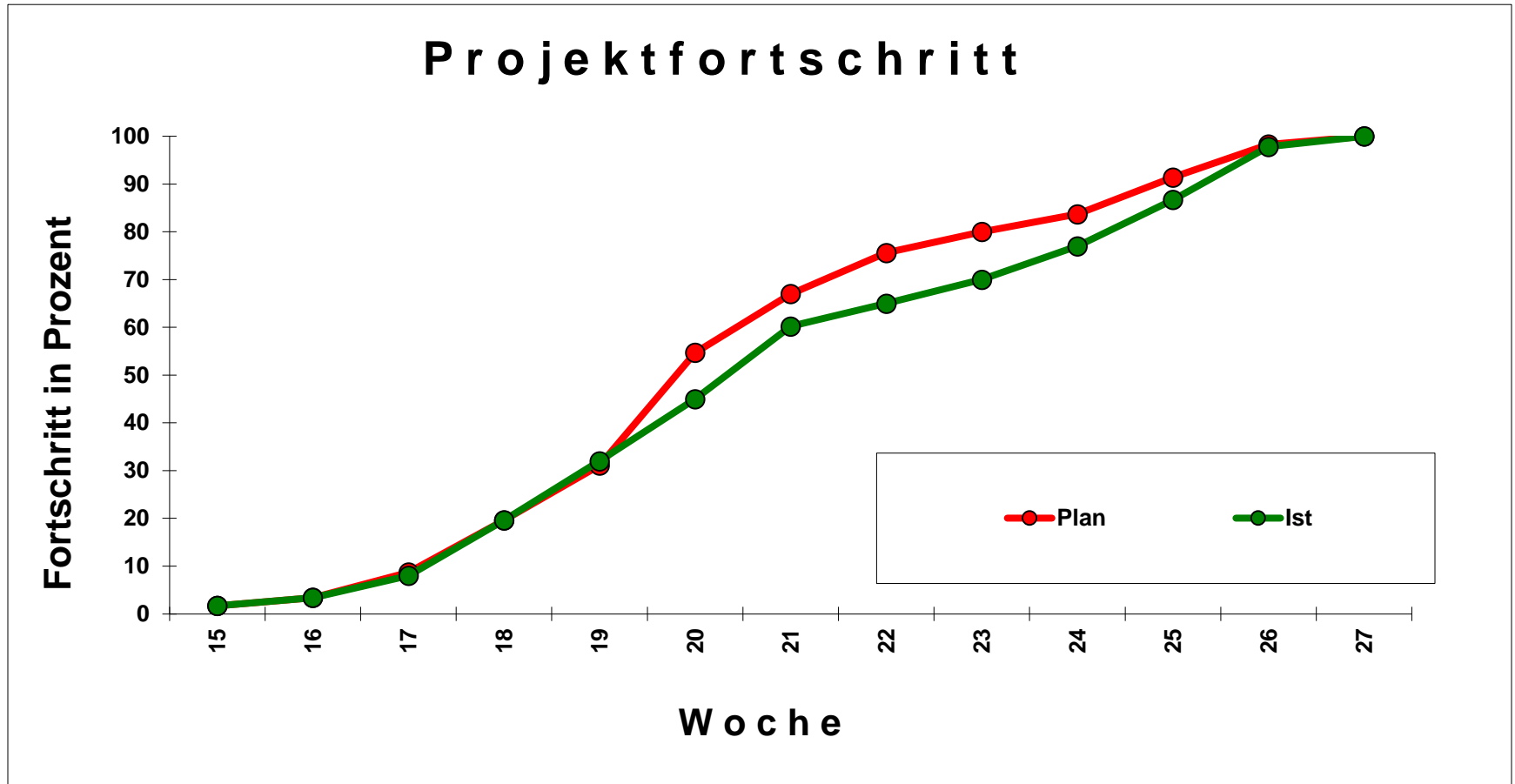
# „Rules“: Cost

## Template for cost planning



# „Rules“: Project Monitoring

## Template for project progress report



# Observations

## Observations from past project:

- Goals were not set high enough
- Not enough parallelization of work packets, high workload for some members
- Milestone result not clearly defined „What will I have as deliverable after Milestone Presentation X?“
- Dwindling concentration in meetings
- Avoidance of accountability, Lack of Commitment
- Bad preparation of milestones in terms of simulation knowledge „Introduction to Simulation“ lectures
- Missing willingness to make compromises in controversial decisions
- Lacking acceptance of feedback
- Unnecessarily aggressive competition among teams

# Organizational

## Topics

- Team A – Task 2
- Team B – Task 3 (maybe 4)
- Team D – Task 1

**Time and rooms:** Wed 17–19 G29–336 / Thu 15–17 G29–336

- Team A – Wed – Phil
- Team B – Thu – Claudia
- Team D – Thu – Claudia

# Organizational

## Infos:

- Budget: 10.000 € per member
- Deadline for milestone presentation:  
Upload via elearning Monday by 10.00 AM as PDF or PowerPoint

## Slide access:

- User: simproj
- Password: Tolkien

## Sign NDA's with Magdeburg for data access

- In your next meeting

# Organizational

## Project topic selection

- Each team will work on a different traffic node
- Discuss your topic preferences now, choose your priority
- We will assign the topics to the teams in a fair process, throwing a coin of necessary ;-)

# Homework

## Project

- Expressive photographs of current traffic situation
- What is special there?
- What data will you need for the simulation model?
- Which four (!) experiments would you like to conduct?

## Milestone #1 20.04.

- Email-list for the team, Dropbox or other team & project collaboration tool
- Agreed upon team goal
- Detailed list of personal and general performance and quality criteria
- How can they be measured? Who will hold the team to them?