Teaching Philosophy

I am enthusiastic about information security and privacy and I love teaching. I want to inspire you and appeal to your curiosity. I have written this document to help you **understand the reasons behind the design** of my courses.

I make serious efforts to ensure that you actually learn something – and not only for the exam. I honestly care about you and I make an effort to accommodate everyone to the best of my abilities, for instance by recording all of my lectures. As I really take an interest in your success, on occassion, I will have to make unpopular decisions to make you (more) successful. Like some of my colleagues, I accept that it is "more important to be a good professor than your favorite professor" [URL].

Most of the time, learning is fun and inspiring. Learning complex concepts, however, is often quite challenging. It requires dedication and perseverance. I see my role as someone who supports and guides you in this endeavor.

I do have high expectations and I demand from you that you make a significant effort. As a consequence, **I will challenge you**. I may even have to make you feel uncomfortable, e. g., when you are overwhelmed by a task at first. In hindsight, you will hopefully recognize that these have been **the moments when you grew the most**.

Circumstances demand that I am not merely a mentor for you; I also have to assess your success. When it comes to grading, I am committed to the **principle of fairness**. This means, among other things, that I cannot tolerate cheating. When designing exams, I aim for equal levels of difficulty by finetuning the weights of easy and challenging tasks. As a side-effect, every exam looks quite different. Exams *must* be unpredictable to ensure that everybody has the same chances and there are no shortcuts such as concentrating one's studying solely on exams from the past.

Grades are only meaningful if they are a genuine and truthful measure of your knowledge and skills. As we all know, written exams are not the best assessment technique. Written exams, however, do have the desirable property of pairing fairness with efficiency. We have to live with this compromise for now.

1. Why are we here?

You are here because you want to **improve your skills and extend your knowledge**. You are probably also here because a bachelor's or master's degree benefits your chances on the job market.

Studying at a university, however, is not so much about preparing you for concrete jobs on the market. It is about **shaping your personality**. It is about teaching you to **think thoroughly**. It is about perseverance and building up the **ability to teach yourself**. This is why we spend time with foundations that may not be immediately relevant in your future job. It is

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not so much about the content but about the thought processes and the general understanding how everything fits together.

Consider this English proverb: "Give someone a fish and you feed them for a day; teach them to fish and you feed them for a lifetime." In other words, I am not here to teach you facts. You can read up on them on your own. **I am here to teach you how to think.** This, however, requires work on your part.

2. Expectations

Take Interest

First and foremost, I expect that you take an interest in the subject matter, that you are willing to learn, and that you are willing to work on your own to improve your knowledge and abilities. Most of you will have to leave their comfort zone to succeed in my courses.

If you notice a knowledge deficit, it is **your responsibility to read up** on the respective fundamentals. Most of the time, I can point you towards material with which you can get up to speed quickly. Feel free to ask me for that.

Make an Effort

Learn continuously throughout the semester. Merely attending the lecture and the tutorials is not sufficient. Lectures are fast-paced and mean to draw your attention to particular issues which are interesting and relevant. It is your responsibility to take it up from there. Do not let yourself be fooled in believing that you understood everything while listening to it. You have not internalized the material until you have worked with it on your own.

My modules demand a significant amount of self-studying work. Read the workload breakdown in the module handbook to get a feeling for the expected workload.

Self-studying is an essential aspect of studying at a university (cf. the Mission Statement of University of Bamberg [URL] which states "students […] are encouraged to work as independently as possible"). This makes a lot of sense. After all, most insights (*a-ha* moments) and discoveries happen during sessions of self-studying and not during a lecture or a tutorial.

Make sure to allocate a sufficient amount of time to your studies. If you are enrolled as a full-time student, you should **devote more than 40 hours per week to studying** (according to the Bologna regime, where a module with 6 ECTS is equivalent to a total workload of 180 hours; on average you are expected to complete 30 ECTS credits per semester). If you *have to work* in industry on two days per week to make a living, University of Bamberg offers you the **possibility of enroll as a part-time student** (cf. the mission statement referenced above: "Comprehensive education, as we understand it, takes time. Our flexible course offering allows for individual freedom and is our answer to changing living conditions and increasingly flexible life and career paths. Nearly every degree offered in Bamberg can be pursued part-time.").

Be Prepared

Invest sufficient time for the tutorials and assignments and do not give up too early. There is a high correlation between time spent on problem solving and the final grade.

Be prepared when you come to the tutorials. We expect that you have made a considerable attempt at homework tasks or readings in advance.

No Cheating and Plagiarism

As explained above, I am committed to fairness. This means **I cannot tolerate cheating** on assignments and during the exam. The benefits of cheating on homework are usually outweighed by a generally poorer performance in the exam. After all, taking shortcuts during assignments limits your level of mastery of the material. Therefore, do not copy text or solutions from others or from the internet, do not ask for solutions in online forums, and do not collude with others to obtain a solution when I asked you to solve a task individually. Cite your sources properly when you work with literature or material obtained from the internet.

In case I detect a case of (potential) plagiarism, I will have to forward it to the examination council, which will decide about disciplinary measures.

It is acceptable and even beneficial to form learning groups. In some of my modules, however, team work for bonus point assignments may be declared *not permissible*. In this case, it is fine to discuss *general concepts* in your learning group. You can also discuss your solutions after the submission deadline. However, it is dangerous to discuss and share *concrete solutions* before you submit them. If multiple team members submit identical submissions, these may be flagged as cases of plagiarism.

Ask Questions

Ask questions during the lecture or in VC, if you have not understood a concept. Otherwise, I will have to assume that you have understood it.

Respect that I may choose to not answer your question on the spot in the interest of time. Feel free to approach me after the lecture or in the contact hour (published on https://uni-bamberg.de/psi/).

Answer questions in VC if you know the answer (explaining something to others helps you to understand it better).

Learn to ask effective questions. Examples of poor questions are "I cannot log in on the Linux server! How does that work?" and "I don't know how to approach this task". State what you tried, what you observed, and what you expected to observe. You may also state what you assume to be true.

When you ask a question on an assignment problem, we will not give you solutions before the deadline. We can, however, give you generic hints.

Read http://xyproblem.info/ as well as Eric Raymond's guidelines for good questions [URL].

3. Recommendations

Attendance and Note-taking

Attend the lectures in person as often as possible. **Solely watching the recordings is not an adequate substitute.**

Invest sufficient time in **preparing lectures**: look at the slides, preferably already *in advance* and mark the parts which you do not understand; read the readings and follow the links that I show during the lecture

Take notes in hand-writing. Studies suggest that hand-writing is one of the most effective learning techniques. Ideally, you write on dedicated sheets of paper using a suitable note-taking technique.

Often, there is not sufficient time for full-fledged note-taking. Writing right into the slides is only a compromise: slide annotations are less effective than note-taking because there is much less *active engagement* (and virtually no *active recall*) with the material and you are inclined to stick close to the wording of the slides.

Note-taking during the lecture is not sufficient. **Post-process your notes** after the lecture. Later on, review your notes before the next lecture to help your brain creating long-lasting connections.

Learning Groups

Form a learning group and discuss the material regularly. One of the **most effective learning techniques is to verbalize** what you have understood in order to explain it to others.

If you work in a team, **resist the temptation to distribute the tasks** among your team mates. All team members should make a substantial attempt at solving all tasks on their own before discussing them and applying their knowledge in a group setting. Firstly, you learn a lot by explaining. Secondly, you benefit from considering your team mates' solutions to a problem.

Prepare for the Exam

Binge-learning in the days before the exam is widespread yet ineffective for PSI exams. Binge-learning is effective if you have to reproduce facts. Most of the questions in my exams, however, do not ask you to reproduce facts.

Instead, most of the exam questions require you to *apply* your knowledge (cf. Bloom's Revised Taxonomy [URL]). Almost every exam comes with one *transfer question*, which requires even higher order thinking skills.

When preparing for the exam, **pay special attention to the examples and problems** presented in the lecture, the tutorials, and the assignments (especially if they have appeared on multiple occassions). Work with them until you master them. Many of our exams contain multiple questions that are based on such problems and examples.

We try to integrate a variety of learning activities in our modules. It is, however, your responsibility to develop your learning skills. **The following guides may serve as good starting points:**

- Megan Imundo: Using Evidence-Based Study Strategies to Optimize Your Learning [URL]
- The Learning Center, University of North Carolina at Chapel Hill: Studying 101: Study Smarter Not Harder [URL]

4. Final Remarks

Some of you are under a lot of pressure. You may outright reject (some or all of) my recommendations. You may be convinced that you will never be able to live up to my expectations. Sure, you can! **Don't get stuck** by thinking that your perceived misery is the result of circumstances beyond your control. You *can* shape the world around you to better suit your needs, at least to a certain degree. And you can also work on yourself to change. After all, it is *your* life.

Regarding security and privacy: be curious! Start a habit of reading security-related news and papers. Play around with tools. Run into problems and figure out how to solve them on your own. Use your skills to make a change and make the world a better place.