

Name of Module: Mobile Services		Credit Points (according to ECTS): 6	code designation MINF-KS-MS.S11
Person Responsible for Module: Küpper	Secretariat: TEL 19	e-mail address: axel.kuepper@telekom.de	
Module Description			

1. Qualification Aims

Students who have successfully finished this module have an overview of current and future services and service infrastructures in the Mobile Internet. They have developed an understanding of the special characteristics of mobile networks when compared to fixed infrastructures, and have learned about the benefits of mobile services and the fascinating prospects of emerging areas like Location-based Services and Ubiquitous Computing. However, they are also aware of the problems and limits of mobile service provisioning and know how to cope with these deficiencies when designing them. Furthermore, they have good knowledge of different alternatives of realizing services (for example, device versus network centric approaches) and an overview of related service platforms, auxiliary functions, and operating systems of mobile devices.

The course is **principally** designed to impart

technical skills: 40%, method skills: 30%, system skills: 20%, social skills: 10%

2. Content

The module starts with a brief introduction into the fundamentals of mobile networks and a short overview of related infrastructures of GSM, UMTS, and other networks. This includes a short discussion about the particular problems these networks imply and a general overview of the special features they offer, for example, regarding the different types of mobility support and associated mechanisms. After that, the module introduces different service platforms and infrastructures and demonstrates their realization and operation. The following services and service platforms are covered:

- SMS and MMS
- Mobile Internet
- Marketplaces (iPhone, Android,...)
- IMS services
- Advanced Services (Mobile Payment, Mobile Instant Messaging and Presence,...)
- Location-based Services

The module concludes with an overview and discussion of latest trends and developments.

3. Module Components

Course Name	Course type	Weekly hours per semester	CPs (according to ECTS)	Compulsory(C) / Compulsory Elective (CE)	Semester (WS / SS)
Mobile Services	IL	4	6	P	SS

4. Description of Teaching and Learning Methods

The topics of this module are taught in a classical lecture, which also envisages a related discussion between students and lecturer. Selected topics are further covered in an exercise course with frequent assignments. Each assignment contains several problems, which are to be solved by the students. During practical lessons, the solutions are then presented and discussed.

5. Prerequisites for Participation

Mandatory: basic knowledge of computer science and Internet/network architectures
Desirable: knowledge of distributed systems, basic programming skills

6. Target Group of Module

Master students of

- Computer Science (Informatik) / Kommunikationsbasierte Systeme
- Computer Engineering (Technische Informatik)/ Katalog1: Technische Anwendung

7. Work Requirements and Credit Points

Course Type	Calculation Factor	Hours
Presence in lectures	15x2	30
Presence in practical lessons	15x2	30
Assignments	15x3	45
Preparation and follow-up work	15x1	15
Exam preparation	60	60
Sum		180

8. Module Examination and Grading Procedures

An oral examination is offered, which lasts between 20 and 30 minutes. The examination is graded according to the rules of the respective examination regulations.

9. Duration of Module

The module can be finished in one semester.

10. Number of Participants

50 students

11. Enrolment Procedures

It is not required to register for the lecture or practical lessons.

It is required to register for the oral examination. Please check the homepage of the professorship (<http://www.snet.tu-berlin.de/>) for free examination appointments. For registering, please send an email to the secretary and include your name, matriculation number, and degree programme. Please note that the registration is obligatory, and a rejection is only possible in urgent cases of exception. The examination is rated as failed in cases of absence without valid excuse. This does not have impact on possibly contradicting rules of the respective examination regulation.

12. Recommended Reading, Lecture Notes

Lecture notes available in paper form? **yes** **no**

If yes, where can they be purchased?

Lecture notes in paper form are sometimes made available during class.

Lecture notes available in electronic form? **yes** **no**

If yes, please specify web address:

Recommended Reading:

- Kamal, R. (2008). Mobile Computing, Oxford University Press
- Küpper, A. (2005). Location-based Services – Fundamentals and Operation, John Wiley & Sons
- Roth, J. (2005). Mobile Computing: Grundlagen, Technik, Konzepte; 2nd edition, dpunkt Verlag

13. Other Information

Lectures and practical lessons are given in English.