

1 Course Description

This course focuses on graph theory problems arising in Computer Science and Communications and discusses how to use methods and results from graph theory to solve them. The course will cover topics such as:

1. Introduction to basic concepts in graph theory
2. Job scheduling and graph coloring
3. Network routing and graph connectivity
4. Labyrinths and Eulerian paths
5. Archeological data and trees
6. VLSI design and planar graphs
7. Internet routers and bipartite graphs
8. Wireless Networks and geometric graphs

The instructor for this course will be Prof. Rudiger Urbanke.

2 Course Website

<http://ipg.epfl.ch/doku.php?id=en:courses:2012-2013:gta>

All the relevant information, exercises, homeworks and schedules will be posted on this website. So make sure to check it regularly.

3 Textbook

We will follow the book **Graph Theory with Applications** by **J.A. Bondy and U.S.R. Murty**. A link to a free electronic copy is given in the course website.

4 Grading

There will be 2 graded homeworks, a project, a midterm and final examination. Homeworks are due as specified in the schedule. The final grade will be calculated using the formula

Final Grade (100%) = 10% Homeworks + 20% Project + 30% Midterm + 40% Final.

The tutorial exercises are not graded but it is highly recommended that you attend the exercise sessions and work out all the problems yourself.

5 Teaching Assistants

PhD Assistants	
Siddhartha Brahma Room INR 032, siddhartha.brahma@epfl.ch Office Hours: By appointment	Stanko Novakovic Room INN 318, stanko.novakovic@epfl.ch Office Hours: By appointment

Student Assistants
Yannik Messerli yannik.messerli@epfl.ch

6 Class Schedule

The classes will be held on Tuesdays, 11:15 am - 1:00 pm in Room INM 203.

The tutorial sessions will be held on Thursdays, 4:15 pm - 6:00 pm in Room INM 201.