

Graph Theory

Course title - Intitulé du cours	Graph Theory
Level / Semester - Niveau / semestre	M2 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Nathalie VIALANEIX
Other teacher(s) - Autre(s) enseignant(s)	
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Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	10.5
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	0
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	Anglais

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

nathalie.vialaneix@inra.fr Modes d'interactions privilégiés : email et / ou demande de rendez-vous.

Course Objectives - Objectifs du cours :

The purpose of this class is to present statistical methods for graph mining and how to apply them to the analysis of a real social network.

The course is divided into three main parts covering the following topics:

1. introduction to graphs and networks;
2. graph clustering;
3. tests and random graphs.

Prerequisites - Pré requis :

pre-requisites: proficient R programming

Practical information about the sessions - Modalités pratiques de gestion du cours :

Personal laptops are allowed at your own risk. Students are expected to actively participate to the class as most of the course findings are based on students' own work and discoveries. Late arrivals and missing a class can result into a penalty in the final grade.

Grading system - Modalités d'évaluation :

Students' work will be evaluated with a main exam for the graph mining part and with another exam for the other part of this class.

Bibliography/references - Bibliographie/références :

References are listed on this webpage: <http://www.nathalieviplaneix.eu/teaching/m2se/>

Session planning - Planification des séances :

Each class will be organized into a theoretical presentation followed by a practical application on a real dataset based on Games of Thrones.