



University of Science and Technology of Hanoi
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COURSE SYLLABUS

Subject: Graph Theory

Academic field: Applied Mathematics

Lecturer:

Phone:

E-mail:

Academic year: 2020 - 2021

COURSE DESCRIPTION

Credit points	04	
Level	Undergraduate	
Teaching time Location	University of Science and Technology of Hanoi	
Time Commitment	Lecture	20 hrs
	Exercises	20 hrs
	Practicals	0 hrs
	Total	40 hrs
Prerequisites	<ul style="list-style-type: none"> - Linear algebra - Discrete mathematics 	
Recommended background knowledge	<ul style="list-style-type: none"> - Programming 	
Subject description:	The course provides a fundamental knowledge on graph theory.	
Objectives & Out-come	Objective: Graph theory	
	Out-come: To provide an understanding key concepts of graph theory.	
Assessment/ Evaluation	Attendance/Attitude	%
	Exercise(s)	%
	Practicals	%
	Mid-term test	30 %
	Final exam	70 %
Prescribed Textbook(s)	<p>[1] G. Chartrand and P. Zhang. <i>A first course in Graph theory</i>. Dover books on mathematics, 2012.</p> <p>[2] R. Balakrishnan and K. Ranganathan. <i>A Textbook of Graph Theory</i>. Universitext Springer 2012.</p> <p>[3] S. Saha Ray. <i>Graph Theory with Algorithms and its Applications</i>. Springer 2013.</p>	



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COURSE CONTENTS & SCHEDULE

Class	Contents	Hours			Ref./Resources	Assignment(s)
		Lect.	Exr.	Prc.		
1	Review of introductory graph theory	02	02		[1, Chapter 1]	
2	Degrees	02	02		[1, Chapter 2]	
3	Trees	02	02		[1, Chapter 4]	
4	Connectivity	02	02		[1, Chapter 5]	
5	Traversability	02	02		[1, Chapter 6]	
6	Matching and Factorization	02	02		[1, Chapter 8]	
7	Graph colouring	02	02		[1, Chapter 10]	
8	Ramsey numbers	02	02		[1, Chapter 11]	
9	Use of software/algorithms to solve graph-theoretical problems I	02	02		[3, Chapter 5]	
10	Use of software/algorithms to solve graph-theoretical problems I	02	02		[3, Chapter 5]	

Reference Literature:

[1] G. Chartrand and P. Zhang. <i>A first course in Graph theory</i> . Dover books on mathematics, 2012.
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