

# Two days workshop on Graphs and Groups

Ahmad Erfanian

Faculty of Mathematical Sciences, Ferdowsi University of Mashhad, Mashhad, IRAN

There are many ways on assigning a graph to a group, semi-group, ring, module, vector space or other algebraic structures. For example, commuting and non-commuting graphs, power graph, prime graph, zero divisor graph, intersection graph, total graph, co-maximal graph and so on. Finding the relationship between the algebraic structure using properties of graphs associated to them has become an interesting topic in the last years. Indeed, it is worthwhile to relate algebraic properties of these algebraic concepts to the combinatorial properties of their assigned graphs. In this workshop, I will focus on graphs associated to groups. First, a brief background on graph theory and group theory will be stated and then some important algebraic graphs associated to groups will be introduced. Moreover, some recent researches on these kinds of algebraic graphs and some open problems and conjectures will be stated.

## Schedule

### Thursday 18-01-2018

08.30-10.00	first lecture
10.00-10.30	break
10.30-12.00	second lecture
12.00-13.30	break
13.30-15.30	exercise and discussion

### Friday 19-01-2018

08.30-09.30	third lecture
09.30-10.00	break
10.00-11.00	fourth lecture
12.00-13.30	break
13.30-15.30	exercise and discussion