Address : UNIREG Telephone No. : 2419677/2419361 Fax : 0821-2419363/2419301 e-mail : registrar@uni-mysore.ac.in www.uni-mysore.ac.in

UNIVERSITY

OF MYSORE

Estd. 1916

VISHWAVIDYANILAYA KARYA SOUDHA CRAWFORD HALL, POST BOX NO. 406 MYSORE-570 005

No.AC.2(S)/401/13-14

Dated: 24-05-2014

NOTIFICATION

Sub: Introduction of New Electives to fifth and sixth semester of B.Sc.
Ref: 1.Proceedings of Faculty of Science & Technology Meeting held on14-02-2014.
2. Proceedings of the Meeting of Academic Council held on 29-03-2014.

The Board of Studies in **Mathematics (UG)** at its meeting held on 25-11-2013 has resolved to Introduce New electives to fifth and sixth semester of B.Sc.(Graph theory-I & Graph theory-II) from the academic year 2014-15.

The Faculty of Science and Technology and the Academic Council at their meetings held on 14-02-2014.and 29-03-2014 respectively approved the above proposals and the same is hereby notified.

The copy of New Electives of B.Sc Mathematics is annexed herewith.

REGISTRAR. Oniversity of Ma MYSDRE.

To

1. The Registrar (Evaluation), University of Mysore, Mysore

2. The Chairperson, BOS/DOS in Mathematics, MGM

- 3. The Dean, Faculty of Science & Technology, DOS in Zoology, MGM.
- 4. The Principals of the Affiliated Science Colleges.
- 5. The Deputy/Assistant Registrar (Evaluation), University of Mysore, Mysore.
- 6. Sri Narasimha Murthy, Statistician, E.B. UOM, Mysore.
- 7. The Supdt AC.1 & AC.2, A.B., Academic Section / PMEB, UOM. Mysore.
- 8. The P.A. to the Vice-Chancellor/Registrar/Registrar(Evaluation)UOM, Mysore.
- 9. The Case Worker, AC.7, Academic Section, University of Mysore, Mysore.

10. The Section Guard File(Supdt.AC.2), A.B., A.C., UOM.

11. The Schedule File.

B.Sc. Fifth Semester

GRAPH THEORY – I (Elective Paper)

UNIT I -Basics

Introduction, Graphs, Finite and Null Graphs, Degree of a vertex, Isolated and Pendant vertices, Hand shaking Lemma, and application of Hand shaking lemma ,Isomorphism, Complete graph, Sub graphs, spanning and induced sub graphs Complement of a graph and self -complementary graphs.

UNIT II- Connectedness

Introduction, Walks, Trails, Paths and Cycles, Connected graphs, disconnected graphs and components, bipartite graphs, Operations on graphs

UNIT III - Eulerian and Hamiltonian Graphs

Introduction, The Konigsberg bridge problem, Eulerian graphs, characterization of Eulerian graphs,

Hamiltonian graphs, properties of Hamiltonian graphs, The Travelling salesman problem and applications

UNIT IV-Trees

Introduction, properties of trees, distances, eccentricity of a vertex, radius ,diameter,centres,

centroids, forests, rooted and binary trees, spanning trees, fundamental cycles .

References:

1. F. Harary, Graph theory , Addision Wesley, Reading Mass. (1969).

- Narasingh Deo, Graph theory with applications to engineering and computer science, Prentice Hall of India,(1990).
- 3. V.R. Kulli, College graph theory , Vishwa international publications, India. (2012).

B.Sc. Sixth Semester.

GRAPH THEORY –II (Elective Paper)

UNIT I - Cutsets and Connectivity

Introduction, Cutsets, properties of cutsets, fundamental cutsets, Blocks, properties of blocks,

Examples on connectivity, Whitney's theorem (without Proof).

UNIT II - Planar Graphs

Introduction, planar graphs, Kuratowski's two non-planar graphs

Euler's formula for planar graphs, Detection of planarity, Characterization of planar graphs.

UNIT III - Matrix Representation

Introduction, Adjacency matrix, incidence matrix, cycle matrix, rank of a matrix, Cutsets matrix.

UNIT IV - Directed Graphs

Inroduction, Directed graphs, connectivity in digraphs, types of digraphs, directed paths and connected digraphs, incidence matrix of a digraphs and cycle of a digraph.

References:

- 1. F. Harary, Graph theory , Addision Wesley, Reading Mass. (1969).
- Narasingh Deo, Graph theory with applications to engineering and computer science, Prentice Hall of India, (1990).
- 3. V.R. Kulli, College graph theory , Vishwa international publications, India. (2012).