Devi Ahilya University, Indore, India Institute of Engineering & Technology				IV Year BE Branch Electronic & Instrumentation					
Subject Code & Name	**Instructions Hours per Week**			**Marks**					
4EI354	**L**	**T**	**P**		**TH**	**CW**	**SW**	**PR**	**Total**
Analytical Instrumentation	**4**	**-**	**2**	**Max**	**100**	**50**	**50**	**50**	**250**
Duration of paper: 3 hrs				**Min**	**35**	**25**	**25**	**25**	**110**

Course Objective: This course exposes the students to various instruments and techniques used in the analysis and Identification of elements and compounds

Prerequisite: Knowledge of basic Electronics and Fundamentals of Chemistry

COURSE OF CONTENTS

Unit I
Colorimeters, Visible-Ultraviolet Spectrometers, Infrared Spectrometers, Atomic Absorption Spectrometers

Unit II
Flourimeters, Phosphorimeters, Raman Spectrometer, Photo Acostic, Photothermal Spectrometers Mass Spectrometers

Unit III
Nuclear Magnetic Resonance Spectrometers, Electron Spin Resonance Spectrometers, Electron and Ion Spectroscopy, X-ray Spectrometers

Unit IV
Gas Chromatographs, Liquid Chromatograph, Thermo Analytical Methods

Unit V
PH Meters, Blood Gas Analyzer, Industrial Gas Analysers, Environmental Pollution Monitoring Instruments

References:

[1]. H. H. Williard, L. L. Merrit, J. A. Dean, and F. A. Settle, *Instrumental Methods of Analysis*, 7/e, CBS Publishers and Distributors, India, 1988
[2]. D. A. Skoog, F. J. Holler, and T. A. Nieman, *Principles of Instrumental Analysis*, 6/e., Thomson Learning, 1998
[3]. R. S. Khandpur, *Handbook of Analytical Instruments*, Tata McGraw Hill, New Delhi
[4]. R. K. Jain, *Mechanical and Industrial Measurements*, Khanna Publishers, Delhi, 1985
[5]. G. W. Ewing, *Instrumental Methods of Chemical Analysis*, 5/e., McGraw Hill, Singapore, 1992
[6]. R. E. Sherman and L. J. Rhodes (Eds), Analytical Instrumentation, ISA Press, New York, 1996
[7]. B. G. Liptak, *Process Measurement and Analysis*, 3rd ed., Chilton Book Company, Pennsylvania, 1995
[8]. Behrouz A.Forouzan , Data Communications and Networking ,4/E Tata McGraw-Hill, 2000