

HM401

Course Objective

This course is intended for the students to understand the economic concepts that are in vogue in industries.

Industrial Economics (3 – 0 - 0) 3

Microeconomics. Demand and supply. Forecasting techniques. Cost and revenues. Competitive nature of firms.

Keynesian economics. Aggregate demand and supply. Employment determination. National income. Trade cycle. Inflation. Index numbers.

Capital budgeting. Cash flow analysis. Balance sheet. Risk analysis and decision making.

Impact of liberalization, privatization and globalization. Locating the firm in a global economy.

Fiscal policy. Taxation-principles. Exchange rate determination. Monetary policy. Functions of banks. Credit creation by commercial banks.

Course Outcome

Know the concepts of Microeconomics and Keynesian economics.

Know the Impact of liberalization, privatization and globalization.

References:

M.Adhikari, Business Economics, Excel Books, 2004

S.K.Misra & V.K.Puri, Economic Environment of Business, HPH, 2003

EC401

Course Objective

To understand the working principles of switching systems from manual and electromechanical systems to stored program control systems.

Communication Switching Systems (3 – 0 -0) 3

Basic elements of communication network. Switching systems. Signaling and signaling functions.

Digital telephone network. TDM hierarchy. Data under voice. Digital switching. Echo cancellers. Tone receivers.

Synchronous versus asynchronous transmission. Line coding . Error performance. TDM. TDM loops and rings.

Space and time divided switches. Multistage switches. Path finding. Switching matrix control. Digital time division switch. Time space switching. Digital Switching in analog environment.

Timing recovery. Jitter. Network synchronization. Digital subscriber access-ISDN network. ADSL. Traffic analysis.

Course Outcome

Better understanding on telecommunication switching systems and traffic theory.

Acquire the ability to design switching systems: single and multi stages.

References:

J.C. Bellamy, Digital Telephony, (3/e), Wiley, 2000.

E.Keiser & E.Strange, Digital Telephony and Network Integration, (2/e), Van Nostrand, 1995.

EC403

Course Objective

To expose the students to the basics of signal propagation through optical fibers, fiber impairments, components and devices and system design.

Fiber Optic Communication (3 – 0 - 0) 3

Step-index and graded index optical fibers. Modal analysis of propagation. Classification of modes.

Pulse dispersion. Material and waveguide dispersion .Absorption, scattering and bending losses.

Optical coupling into multimode and single mode fibers.Lensing schemes for coupling improvement.Fiber-to-fiber joints. Splicing techniques.Optical fiber connectors.

Optical sources and detectors. Laser fundamentals. Semiconductor Laser basics. diodes and LEDs.PIN and avalanche photodiodes.

Design considerations of fiber optic systems:Analog and digital modulation. Noise in detection process. Bit error rate. Optical receiver operation.Performance calculations.WDM.

Course Outcome

Students can understand the theory and behavior of basic constituents, such as optical fibers, light sources, photo detectors, connecting and coupling devices and optical links.

Students will be able to design digital and analog fiber transmission links.

References:

A.Ghatak & K.Thygarajan, Introduction to Fiber Optics, Cambridge, 1999.

G.Keiser, Optical Fiber Communications (3/e),Mc Graw-Hill.

P.K.Cheo, Fiber Optics and Optoelectronics (2/e) Prentice – Hall

EC407

Fiber Optic Communication Laboratory 0 - 0 - 3 - 1

EC409

Microwave Laboratory 0 - 0 - 3 - 1

EC447

Comprehensive Evaluation 0 - 0 - 0 - 3
