MG6863 – Engineering Economics and Financial Accounting

(Anna University, Regulation 2013), extracted from official and reputable sources:

UNIT I: Introduction to Economics (8 hours)

Flow in an economy - Laws of supply & demand - Engineering vs Economic efficiency - Scope of engineering economics - Cost concepts: marginal cost/revenue, sunk cost, opportunity cost - Break-even analysis (V-ratio) - Elementary economic analysis in: Material selection, Product design, Process planning

UNIT II: Value Engineering (10 hours)

Make-or-buy decisions - Value engineering: functions, aims, procedure - Time value of money & interest formulas: Compound amount factor, Present worth factor, Sinking fund factor, Capital recovery factor, Uniform gradient (annual equivalent) factor, Effective interest rate

UNIT III: Cash Flow Analysis (9 hours)

Comparison bases: Present worth method (revenue- & cost-dominated), Future worth method (revenue- & cost-dominated), Annual equivalent method, Rate of return method

UNIT IV: Replacement & Maintenance Analysis (9 hours)

Maintenance types & replacement scenarios, Determination of an asset's economic life, Replacement analysis: Capital recovery with return, Challenger vs defender concept - Simple probabilistic failure models

UNIT V: Depreciation & Inflation Adjustment (9 hours)

Depreciation methods: Straight line, Declining balance, Sum-of-years' digits, Sinking fund / annuity method, Service-output method - Evaluation of public alternatives - Inflation-adjusted economic decisions - Examples comparing alternatives & determining economic life