

VEL TECH MULTI TECH Dr RANGARAJAN Dr.SAKUNTHALA ENGINEERING COLLEGE

(An ISO 9001: 2000 Certified Institution)
(Owned by 'VEL Shree R. Rangarajan
Dr. Sagunthala Rangarajan Educational Academy)

(Approved by AICTE, New Delhi
&
Govt. of Tamil Nadu and affiliated to Anna University)



SYLLABUS WEEKLY SCHEDULE VIII SEMESTER 2013-2014

4 Year Degree Course in Engineering

MECH

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VIII SEMESTER CONTENTS

S.No	SUBJECT CODE	SUBJECT NAME
1	ME2036	PRODUCTION PLANNING AND CONTROL
2	ME2041	ADVANCED I.C ENGINES
3	MG2451	ENGINEERING ECONOMICS AND COST ANALYSIS

WEEK DETAILS

YEAR 2013-2014

S.NO	WEEKS	DATE	
		FROM	TO
1.	Week 1	02.01.14	10.01.14
2.	Week 2	16.01.14	24.01.14
3.	Week 3	27.01.14	04.02.14
4.	Week 4	05.02.14	13.02.14
5.	Week 5	14.02.14	24.02.14
6.	Week 6	25.02.14	05.03.14
7.	Week 7	06.03.14	14.03.14
8.	Week 8	17.03.14	25.03.14
9.	Week 9	26.03.14	03.04.14
10.	Week 10	04.04.14	11.04.14
11.	Week 11	12.04.14	24.04.14

MG2451 ENGINEERING ECONOMICS AND COST ANALYSIS

Week 1:

Unit I: Introduction to Economics- Flow in an economy, Law of supply and demand, Concept of Engineering Economics – Engineering efficiency, Economic efficiency, Scope of engineering economics- Element of costs, Marginal cost, Marginal Revenue, Sunk cost, Opportunity cost, Break-even analysis- V ratio.

Week 2:

Elementary economic Analysis – Material selection for product Design selection for a product, Process planning.

Unit II:

Make or buy decision, Value engineering – Function, aims, Value engineering procedure. Interest formulae and their applications –Time value of money,

Week 3:

Single payment compound amount factor, Single payment present worth factor, Equal payment series sinking fund factor, Equal payment series payment Present worth factor- equal payment series capital recovery factor.

Week 4:

Uniform gradient series annual equivalent factor, Effective interest rate, Examples in all the methods.

Unit III:

Methods of comparison of alternatives – present worth method (Revenue dominated cash flow diagram), Future worth method (Revenue dominated cash flow diagram, cost dominated cash flow diagram).

Week 5:

Annual equivalent method (Revenue dominated cash flow diagram, cost dominated cash flow diagram), rate of return method, Examples in all the methods.

Unit IV:

Replacement and Maintenance analysis – Types of maintenance, types of replacement problem, determination of economic life of an asset.

Week 6: Cycle Test -1

Week 7:

Replacement of an asset with a new asset – capital recovery with return and concept of challenger and defender, Simple probabilistic model for items which fail completely.

Week 8

Unit V:

Depreciation- Introduction, Straight line method of depreciation, declining balance method of depreciation-Sum of the years digits method of depreciation.

Week 9: Cycle Test2

Week 10:

Sinking fund method of depreciation/ Annuity method of depreciation, service output method of depreciation- Evaluation of public alternatives- introduction, Examples, Inflation adjusted decisions. Procedure to adjust inflation, Examples on comparison of alternatives and determination of economic life of asset.

Week 11: Model Exam

ME2036

PRODUCTION PLANNING AND CONTROL

WEEK: 1 - (Unit I) Introduction

Objectives and benefits of planning and control-Functions of production control-Types of production ,Functional aspects-Operational aspect-Durability and dependability aspect-aesthetic aspect.

WEEK: 2 (Unit II) WORK STUDY

Profit consideration-Standardization, Simplification & specialization-Break even analysis-Economics of a new design

WEEK: 3 Method study, basic procedure-Selection-Recording of process -Micro motion and memo motion study - work measurement - Techniques of work measurement - Time study

WEEK: 4 (Unit III) PRODUCT PLANNING AND PROCESS PLANNING

Production study - Work sampling - Synthesis from standard data - Predetermined motion time standards

WEEK: 5

Product planning-Extending the original product information-Value analysis-Problems in lack of product planning-Process planning and routing--Steps in process planning-

WEEK: 6 CYCLE TEST -I**WEEK: 7 – (Unit IV) PRODUCTION SCHEDULING**

Quantity determination in batch production-Machine capacity, balancing-Analysis of process capabilities in a multi product system.

Production Control Systems- -Gantt charts- Line of balance - Material requirement planning kanban –Dispatching

WEEK: 8

Nature and purpose of planning - Planning process - Types of plans – Objectives - Managing by objective (MBO) Strategies

Inventory control-Determination of Economic order quantity and economic lot size

WEEK: 9

(CYCLE TEST – II)

WEEK: 10

ABC analysis-Recorder procedure-Introduction to computer integrated production planning systems

Week 11:
Model Exam

ME2041 ADVANCED I.C ENGINES

WEEK: 1 - (Unit I) Spark Ignition Engines

Air-Fuel ratio requirements, Design of carburetor-Fuel jet size and venture size, stages of combustion, normal and abnormal

WEEK: 2

combustion, factors affecting knock, combustion chambers, Introduction to thermodynamic analysis of SI Engine combustion process

WEEK: 3 (Unit II) Compression Ignition Engines

Stages of combustion-Normal and abnormal combustion-Factors affecting knock, Direct and indirect injection systems, Turbo charging, CI engine combustion process

WEEK: 4 (Unit III) Engine Exhaust Emission Control

(CYCLE TEST – I)

Formation of NO_x, HC/CO Mechanism, smoke and particulate emissions, Green house effect, Three way catalytic converter and particulate trap, smoke and particulate measurement, Emission norms

WEEK: 5 – (Unit IV) Alternate Fuels

(CYCLE TEST – I)

Alcohols, Vegetable oils and bio diesel, Bio gas, Liquefied petroleum gas, Hydrogen properties, Suitability, Engine modifications.

WEEK: 6 CYCLE TEST – I)

WEEK: 7 Engine Performance Combustion and Emission characteristics of SI and CI Engines using these alternate fuels, four valve and overhead cams

WEEK: 8 Homogeneous charge compression ignition engine, Lean burn engine, stratified charge engine, surface ignition engine, Electronic Engine Management.Common rail Direct

Week 9: CYCLE TEST – II)

Week 10:

Injection Diesel Engine, Gasoline direct injection engine, Charge amplifier PC for combustion and Heat release analysis in Engines.

Week 11: MODEL EXAM