EKLAVYA UNIVERSITY
ज्ञान प्राप्तये लक्ष्य संधानम्
Estd. by Madhya Pradesh Niji Vishwavidyalaya (Sthapna Evam Sanchalana) Adhyadesh, 2020

SCHOOL OF ENGINEERING

SYLLABUS

Machine Design

Class		**M.TECH.**	**L**	**T**	**P**	**C**
Semester/Year		**III/II**	**3**	**-**	**-**	**3**
Subject Name		**Fatigue Fracture Analysis**				
Subject Code		**MMEMD20S301**				
Paper	**English**					
	Hindi					
Max. Marks		**100**				

Course Objectives:

By taking this course student will be able to:

1. The design of structures both safe and sound to ensure the desired longevity or service life intended for the structure.
2. Made structures which are made from the material that can safely resist aging, withstand load spanning both static and dynamic (fatigue), environment-included degradation to include both oxidation and corrosion and even wear.
3. Attendees will learn how to specify, select and economically affordable, mechanical property conductive materials that will ensure long life for the intended structures while concurrently assuring a failsafe criterion.
4. This course would provide the option of the selecting alternative materials to the traditionally used choice for structures of need and interest and having far reaching practical application.

Course Outcomes:

CO1: Identify the design philosophy of a given component.

CO2: To understand the concept of fatigue.

CO3: Select and configure theories of failure and their application.

CO4: Will learn how to specify, select and economically affordable material.

CO5: To perform and interpret fatigue tests.

Unit	Syllabus	Periods

UNIT-I	**DESIGN PHILOSOPHY :**(i) Infinite life, (ii) Safe life, (iii) Fail safe and (iv) Damage tolerant design concepts. **FATIGUE :-** (Normal conditions) Concepts of fatigue failure, statistical methods. Endurance limit, SNdiagram, stress cycling, strain cycling, Goodman and Gerber relations, and their application to design problems. Review of stress concentration.(Controlling factors)- Effect of frequency of the cyclic stress, effect of temperature, size, form, surface condition, surface protection, residual stresses environment(corrosion fatigue), frosting of surfaces in contact and effect of under stresses and overstress.	**10**
UNIT-II	Improvement of fatigue strength: by chemical/metallurgical processes such as retiring, flame hardens, case carburizing. Fatigue strength enhancement by mechanical work: cold rolling, peening, shot peening. Effect of environment: Corrosion Fatigue, Concept of cumulative fatigue damage Fracture Mechanics: Ductile and brittle fracture Theoretical cohesive strength of metals, Griffith Theory of brittle Fracture, Oruron's modification to Griffith Theory.	**12**
UNIT-III	Modes of fracture : Mode I, II and III, fatigue creek growth Behaviour of metals, Linear Elastic Fracture Mechanics (LEFM), Stress Intensity Factor(SIF), Stress field near the crack tip, Critical SIF and Fracture Toughness,. Strain Energy Release Rates (SERR), Elasto-Plastic Fracture Mechanics (EPFM), Plastic zone size and its evaluation, J-Integral Method.	**11**
UNIT-IV	Definition, Constant stress and constant, strain creep tests. Uniaxial creep tests: Baily's Power Law, Creep relaxation: strain hardening and time hardening creep relaxation. Introduction to Creep bending and deflection of simple problems.	**10**
UNIT-V	Application to design of steam turbine rotor discs. Thin walled pressure vessels and thin walled pressure piping Experimental determination of fracture toughness K, COD gauges IC and standard ASTM Tests.	**12**

Text Books:

1. George E. Dieter, Mechanical Metallurgy, - Mc Graw Hill, NY, 1988.
2. Joseph Marin, Mechanical Behaviour of Engg. Materials, - Prentice Hall of India, 1966.
3. Stephens, R.I. and Fuchs, H.O., Metal Fatigue in Engg. ,- Wiley, NY, 2001.
4. Finnie, I. and Heller, W.R., Creep of Engg. Materials, - Mc Graw Hill Book Co., 1959.
5. Prasant Kumar, Fracture MechanicsFernandes, Springer-Verlag 2008.

Reference Books:

1. L.S. Srinath, Advanced Mechanics of Materials, - Tata Mc Graw Hill Ltd., ND, 2009.
2. Norman E, Dowling, Mechanical Behaviour of Materials, - Prentice Hall, NJ, 1999.
3. Lessells, J.M.,strength and resistance of materials, - John wiley & sons, 1954.
4. Peterson, R.E., Stress Concentration Design Factors,-John Wiley & Sons, 1953.
5. Meguid, S.A., Fracture Mechanics,- John Wiley & Sons, 1996.
6. Kare Hellan, Introduction to Fracture Mechanics, - Mc Graw Hill Book Co., 1985.

SYLLABUS

Machine Design

Class		M.TECH.	L	T	P	C
Semester/Year		III/II	3	-	-	3
Subject Name		Experimental Stress Analysis				
Subject Code		MMEMD20S302				
Paper	English					
	Hindi					
Max. Marks		100				

Course Objectives:

By taking this course student will be able to

1. To use the method of electrical strain gauges to study and characterize the elastic behaviour of solid bodies.
2. To measure displacement and perform stress strain analysis of mechanical systems using electrical resistance strain gauges.
3. To describe the photo elastic method to study and characterize the elastic behaviour of solid bodies.
4. To determine stress strain behaviour of solid bodies using methods of coating.
5. To conduct stress strain analysis of solid bodies using the methods Holography.

Course Outcomes:

CO1: Explain characterize the elastic behaviour of solid bodies.

CO2: Describe stress strain analysis of mechanical systems using electrical resistance strain gauges.

CO3: Discuss skills for experimental investigations an accompanying laboratory course is desirable.

CO4: Discuss experimental investigations by predictions by other methods.

CO5: Describe various coating techniques.

Unit	Syllabus	Periods
UNIT-I	**Introduction:** Definition of terms, Calibration, Standards, Dimension and units generalized measurement system. Basic concepts in dynamic measurements, system response, distortion, impedance matching, Analysis of experimental data, cause and types of experimental errors. General consideration in data analysis.**Electrical Resistance Strain Gages:** Strain sensitivity in metallic alloys,	10

	Gauge construction, Adhesives and mounting techniques, Gauge sensitivity and gage factor, Performance' Characteristics, Environmental effects, Strain Gage circuits. Potentiometer, Wheatstone's bridges, Constant current circuits.	
UNIT-II	**Strain Analysis Methods:** Two element, three element rectangular and delta rosettes, Correction for transverse strain effects, Stress gage, Plane shear gage, Stress intensity factor gauge. Force, Torque and strain measurements: Mass balance measurement, Elastic element for force measurements, torque measurement.	**12**
UNIT-III	**Photo elasticity:** Nature of light, Wave theory of light - optical interference, Stress optic law, effect of stressed model in plane and circular polarisation scopes, Isoclinics & Isochromatics, Fringe order determination Fringe multiplication techniques , Calibration photo elastic model materials. **Two Dimensional Photo elasticity:** Separation methods: Shear difference method, Analytical separation methods, Model to prototype scaling, Properties of 2D photo elastic model materials, Materials for 2D photo elasticity.	**11**
UNIT-IV	Three Dimensional Photo elasticity: Stress freezing method, Scattered light photo elasticity, Scattered light as an interior analyzer and polarizer, Scattered light polariscope and stress data Analyses.Photoelastic (Birefringent) Coatings: Birefringence coating stresses, Effects of coating thickness: Reinforcing effects, Poission's, Stress separation techniques: Oblique incidence, Strip coatings.	**10**
UNIT-V	Brittle Coatings: Coatings stresses, Crack patterns, Refrigeration techniques, Load relaxation techniques, Crack detection methods, Types of brittle coatings, Calibration of coating. Advantages and brittle coating applications.Moire Methods: Moire fringes produced by mechanical interference .Geometrical approach, Displacement field approach to Moire fringe analysis, Out of plane displacement measurements, Out of plane slope measurements.	**12**

Text Books:

1. "Experimental Stress Analysis", Dally and Riley, McGraw Hill.
2. "Experimental Stress Analysis". Sadhu Singh, Khanna publisher.
3. Experimental stress Analysis, Srinath L.S tata Mc Graw Hill.

Reference Books:

1. " Photoelasticity Vol I and Vol II, M.M.Frocht, John Wiley & sons.
2. "Strain Gauge Primer", Perry and Lissner,
3. "Photo Elastic Stress Analysis", Kuske, Albrecht & Robertson John Wiley & Sons.
4. "Motion Measurement and Stress Analysis", Dave and Adams,
5. Holman, Experimental Methods for Engineers, Tata McGraw-Hill Companies, 7th Edition, New York, 2007.

EKLAVYA UNIVERSITY
ज्ञान प्राप्तये लक्ष्य संधानम्
Estd. by Madhya Pradesh Niji Vishvavidyalaya (Sthapna Evam Sanchalana) Adhyadesh, 2020

SCHOOL OF ENGINEERING

SYLLABUS

Machine Design

Class		M.TECH.	L	T	P	C
Semester/Year		III/II	3	-	-	3
Subject Name		Fluid Film Lubrication				
Subject Code		MMEMD20S303				
Paper	English					
	Hindi					
Max. Marks		100				

Course Objectives:

By taking this course student will be able to:

1. The basic objective of the subject is to deal fundamentals of friction, wear and lubrication.
2. The subject is useful in understanding the nature of surfaces of engineering materials.
3. The basic objective of the subject is to learn about types of lubricants.
4. The subject is useful in understanding the various tribological applications.

Course Outcomes:

CO1: Understand the fundamentals of tribology and associated parameters.

CO2: Apply concepts of tribology for the performance analysis and design of components experiencing relative motion.

CO3: Analyse the requirements and design hydrodynamic journal and plane slider bearings for a given application.

CO4: Select proper bearing materials and lubricants for a given tribological application.

CO5: Apply the principles of surface engineering for different applications of tribology.

Unit	Syllabus	Periods
UNIT-I	**Introduction to tribology:** Historical background, practical importance, and subsequent use in the field. Lubricants: Types and specific field of applications. Properties of lubricants, viscosity, its measurement, effect of temperature and	10

	pressure on viscosity, lubrication types, standard grades of lubricants, and selection of lubricants.	
UNIT-II	Friction: Origin, friction theories, measurement methods, friction of metals and non-metals. wear: Classification and mechanisms of wear, delimitation theory, debris analysis, testing methods and standards. Related case studies.	**12**
UNIT-III	**Hydrodynamic journal bearings:** Solution or bearing Reynolds equation for (i) infinite slider bearing, (ii) Rayliegh step journal bearing,(iii) infinitely long full journal bearing boundary conditions-Full Somerfield conditions, Half Somerfield conditions, Reynolds condition, static performance characteristics or journal bearings-Friction forces; Load carrying capacity, Attitude angle, Eccentricity, Somerfield number, Oil flow, Thermal Equilibrium Extent of fluid film all, pressure distribution Kingsbury analogy.	**11**
UNIT-IV	Hydrostatic Journal Bearings: Introduction, Theoretical Analysis, Boundary conditions, Static performance characteristics Load. friction coefficient parameter, oil-flow, temperature rise parameter.	**10**
UNIT-V	Non-Circular Journal Bearings: Introduction, geometry of different types of non-circular bearings, boundary conditions, behaviour of non-circular bearings. Gas Bearings: Introduction, Difference between gas and oil bearings, Static characteristics of gas bearings, Equations governing the behaviour of gas bearings.	**12**

Text Books:

1.”Introduction to Tribology”, B. Bhushan, John Wiley & Sons, Inc., New York, 2002.

2. “Engineering Tribology”, Prasanta Sahoo, PHI Learning Private Ltd, New Delhi, 2011.

3. “Engineering Tribology”, J. A. Williams, Oxford Univ. Press, 2005.

Reference Books:

1. “Introduction to Tribology in bearings”, B. C. Majumdar, Wheeler Publishing.

2. “Tribology, Friction and Wear of Engineering Material”, I. M. Hutchings, Edward Arnold, London, 1992.

3. “Engineering Tribology”, G. W. Stachowiak and A. W. Batchelor, Butterworth-Heinemann, 1992.

4. “Friction and Wear of Materials”, Ernest Rabinowicz, John Wiley & sons, 1995.

5. “Basic Lubrication Theory”, A. Cameron, Ellis Hardwoods Ltd., UK.

SYLLABUS

MACHINE DESIGN

Class		M.TECH.	L	T	P	C
Semester/Year		III/II	3	0	0	3
Subject Name		BUSINESS ANALYTICS				
Subject Code		MMEMD20S304				
Paper	English	English				
	Hindi					
Max. Marks		100				

Course Objectives:

1. Understand the role of business analytics within an organization.
2. Analyze data using statistical and data mining techniques.
3. Understand relationships between the underlying business processes of an organization.

Course Outcomes:

At the end of the course, students will be able to:

CO1. Students will demonstrate knowledge of data analytics.
CO2. Students will demonstrate the ability of think critically in making decisions based on data and deep analytics.
CO3. Students will demonstrate the ability to use technical skills in predicative.
CO4. Prescriptive modeling to support business decision-making.
CO5. Students will demonstrate the ability to translate data into clear, actionable insights.

Unit	Syllabus	Periods
UNIT-I	Business analytics: Overview of Business analytics, Scope of Business analytics, Business Analytics Process, Relationship of Business Analytics Process and organisation, competitive advantages of Business Analytics. Statistical Tools: Statistical Notation, Descriptive Statistical methods, Review of probability distribution and data modelling, sampling and estimation methods overview.	8

UNIT-II	Trendiness and Regression Analysis: Modelling Relationships and Trends in Data, simple Linear Regression. Important Resources, Business Analytics Personnel, Data and models for Business analytics, problem solving, Visualizing and Exploring Data, Business Analytics Technology.	**9**
UNIT-III	Organization Structures of Business analytics, Team management, Management Issues, Designing Information Policy, Outsourcing, Ensuring Data Quality, Measuring contribution of Business analytics, Managing Changes. Descriptive Analytics, predictive analytics, predicative Modelling, Predictive analytics analysis, Data Mining, Data Mining Methodologies, Prescriptive analytics and its step in the business analytics Process, Prescriptive Modelling, nonlinear Optimization.	**11**
UNIT-IV	Forecasting Techniques: Qualitative and Judgmental Forecasting, Statistical Forecasting Models, Forecasting Models for Stationary Time Series, Forecasting Models for Time Series with a Linear Trend, Forecasting Time Series with Seasonality, Regression Forecasting with Casual Variables, Selecting Appropriate Forecasting Models. Monte Carlo Simulation and Risk Analysis: Monte Carle Simulation Using Analytic Solver Platform, New-Product Development Model, Newsvendor Model, Overbooking Model, Cash Budget Model.	**13**
UNIT-V	Decision Analysis: Formulating Decision Problems, Decision Strategies with the without Outcome Probabilities, Decision Trees, The Value of Information, Utility and Decision Making. Recent Trends in: Embedded and collaborative business intelligence, Visual data recovery, Data Storytelling and Data journalism.	**14**

Text Books:

1. Business analytics Principles, Concepts, and Applications by Marc J. Schniederjans, Dara G., Christopher M. Starkey, Pearson FT Press.
2. Business Analytics by James Evans, Pearson Education.

Reference Books:

1. H. G. Stoll, "Least cost Electricity Utility Planning", Wiley Inter science Publication, USA, 1989.
2. I. J. Nagarath and D. P. Kothari, Modern Power System Engineering, Tata McGraw Hill publishers, NewDelhi,1995.
3. IEEE Bronze Book- "Recommended Practice for Energy Conservation and cost effective planning in Industrial facilities", IEEE Inc, USA.

SYLLABUS

MACHINE DESIGN

Class		M.TECH.	L	T	P	C
Semester/Year		III/II	3	0	0	3
Subject Name		Industrial Safety				
Subject Code		MMEMD20S305				
Paper	English	English				
	Hindi					
Max. Marks		100				

Course Objectives:

1. Industrial safety is needed to check all the possible chances of accidents for preventing loss of life and permanent disability of any industrial employee, any damage to machine and material.
2. It is needed to eliminate accidents causing work stoppage and production loss.
3. It is needed to reduce workman's compensation, insurance rate, and all the cost of accidents.

Course Outcomes:

At the end of the course, students will be able to

CO1: The safety and productivity of people, machines, and processes is a key element of any sustainable business.

CO2: Industrial safety systems have been used for many years to perform safety functions in the manufacturing industries.

CO3: Safety is best achieved by inherently safe process design, Protection layer systems such as sensors, alarms, and personal protection equipment.

CO4: Apply standard safety procedures in an industrial environment.

CO5: These may be combined with protective systems to address any residual identified and counter risk.

Unit	Syllabus	Periods
UNIT-I	**Industrial safety:** Accident, causes, types, results and control, mechanical and electrical hazards, types, causes and preventive steps/procedure, describe salient	8

	points of factories act 1948 for health and safety, wash rooms, drinking water layouts, light, cleanliness, fire, guarding, pressure vessels, etc, Safety color codes. Fire prevention and firefighting, equipment and methods.	
UNIT-II	**Fundamentals of maintenance engineering:** Definition and aim of maintenance engineering, Primary and secondary functions and responsibility of maintenance department, Types of maintenance, Types and applications of tools used for maintenance, Maintenance cost & its relation with replacement economy, Service life of equipment.	**9**
UNIT-III	**Wear and Corrosion and their prevention:** Wear- types, causes, effects, wear reduction methods, lubricants-types and applications, Lubrication methods, general sketch, working and applications, i. Screw down grease cup, ii. Pressure grease gun, iii. Splash lubrication, iv. Gravity lubrication, v. Wick feed lubrication vi. Side feed lubrication, vii. Ring lubrication, Definition, principle and factors affecting the corrosion. Types of corrosion, corrosion prevention methods.	**11**
UNIT-IV	**Fault tracing:** Fault tracing-concept and importance, decision tree concept, need and applications, sequence of fault-finding activities, show as decision tree, draw decision tree for problems in machine tools, hydraulic, pneumatic, automotive, thermal and electrical equipment's like, I. Any one machine tool, ii. Pump iii. Air compressor, iv. Internal combustion engine, v. Boiler, Electrical motors, Types of faults in machine tools and their general causes.	**13**
UNIT-V	**Periodic and preventive maintenance:** Periodic inspection-concept and need, degreasing, cleaning and repairing schemes, overhauling of mechanical components, overhauling of electrical motor, common troubles and remedies of electric motor, repair complexities and its use, definition, need, steps and advantages of preventive maintenance. Steps/procedure for periodic and preventive maintenance of: I. Machine tools, ii. Pumps, iii. Air compressors, iv. Diesel generating (DG) sets Program and schedule of preventive maintenance of mechanical and electrical equipment, advantages of preventive maintenance. Repair cycle concept and importance.	**14**

Text Books:

1. Maintenance Engineering, H. P. Garg, S. Chand and Company.
2. Pump-hydraulic Compressors, Audels, McGraw Hill Publication.

Reference Books:

1. Foundation Engineering Handbook, Winterkorn, Hans, Chapman & Hall London.

SYLLABUS

MACHINE DESIGN

Class		M.TECH.	L	T	P	C
Semester/Year		III/II	3	0	0	3
Subject Name		Operations Research				
Subject Code		MMEMD20S306				
Paper	English	English				
	Hindi					
Max. Marks		100				

Course objective:

1. Understand the role and application of PERT/CPM for project scheduling.
2. Know how to compute the critical path and the project completion time. Know how to convert optimistic.
3. Most probable and pessimistic time estimates into expected activity time estimates.

Course outcomes:

At the end of this course, students will be able to

CO1: Apply the dynamic programming to solve problems of discreet and continuous variables.

CO2: Apply the concept of non-linear programming.

CO3: Carry out sensitivity analysis andto model the real-world problem and simulate it.

CO4: Understand the importance of ground improvement techniques in civil engineering construction activities.

CO5: Reinforced wall design using steel strip or geo-reinforcement.

Unit	Syllabus	Periods
UNIT-I	Optimization Techniques, Model Formulation, models, General L.R Formulation, Simplex Techniques, Sensitivity Analysis, Inventory Control Models.	8
UNIT-II	Formulation of a LPP - Graphical solution revised simplex method - duality theory - dual simplex method - sensitivity analysis - parametric programming.	9
UNIT-III	Nonlinear programming problem - Kuhn-Tucker conditions min cost flow problem - max flow problem - CPM/PERT.	11

UNIT-IV	Scheduling and sequencing - single server and multiple server models - deterministic inventory models - Probabilistic inventory control models - Geometric Programming.	**13**
UNIT-V	Competitive Models, Single and Multi-channel Problems, Sequencing Models, Dynamic Programming, Flow in Networks, Elementary Graph Theory, Game Theory Simulation.	**14**

Text books:

1. H.A. Taha, Operations Research, An Introduction, PHI Learning, 2008

2. H.M. Wagner, Principles of Operations Research, PHI Learning, Delhi, 1982.

Referencesbooks:

1. J.C. Pant, Introduction to Optimization, Operations Research, Jain Brothers, Delhi, 2008.

2. Hitler Libermann Operations Research, McGraw Hill Publication, 2009.

3. Pannerselvam, Operations Research, Prentice Hall of India, 2010.

4. Harvey M Wagner, Principles of Operations Research, Prentice Hall of India, 2010.

SYLLABUS

Machine Design

Class		M.TECH	L	T	P	C
Semester/Year		III/II	-	-	20	10
Subject Name		Dissertation Phase – I				
Subject Code		MMEMD20S307				
Paper	English					
	Hindi					
Max. Marks		250				

Course Objectives:

1. In this course unit, students will learn the process of research proposal writing, conducting research, and political science writing.
2. The focus is on preparing the Special Degree students for their research and dissertation writing.
3. To enable students to learn practical aspects of research.

Course Outcomes:

Students will be able to:-

CO1: Ability to synthesize knowledge and skills previously gained and applied to an in-depth

CO2: Capable to select from different methodologies, methods and forms of analysis to produce a suitable research design, and justify their design.

CO3: Ability to present the findings of their technical solution in a written report.

CO4: Presenting the work in International/ National conference or reputed journals.

CO5: Using linear programming approach using software.

Dissertation Phase – I

Guidelines for Dissertation Phase – I

1. As per the AICTE directives, the dissertation is a yearlong activity, to be carried out and evaluated in two phases i.e. Phase – I: July to December and Phase – II: January to June.
2. The dissertation may be carried out preferably in-house i.e. department's laboratories and centers OR in industry allotted through department's T & P coordinator.
3. After multiple interactions with guide and based on comprehensive literature survey, the student shall identify the domain and define dissertation objectives. The referred Model Curriculum of Engineering & Technology PG Courses [Volume -II]
4. literature should preferably include IEEE/IET/IETE/Springer/Science Direct/ACM journals in the areas of Computing and Processing (Hardware and Software), Circuits- Devices and Systems, Communication-Networking and Security, Robotics and Control Systems, Signal Processing and Analysis and any other related domain. In case of Industry sponsored projects, the relevant application notes, while papers, product catalogues should be referred and reported.
5. Student is expected to detail out specifications, methodology, resources required, critical issues involved in design and implementation and phase wise work distribution, and submit the proposal within a month from the date of registration.
6. **Phase – I deliverables:** A document report comprising of summary of literature survey, detailed objectives, project specifications, paper and/or computer aided design, proof of concept/functionality, part results, A record of continuous progress.
7. **Phase – I evaluation:** A committee comprising of guides of respective specialization shall assess the progress/performance of the student based on report, presentation and Q & A.
8. In case of unsatisfactory performance, committee may recommend repeating the Phase-I work.

SYLLABUS

CONTROL SYSTEM

Class		**M.TECH**	**L**	**T**	**P**	**C**
Semester/Year		**IV/II**	**-**	**-**	**32**	**16**
Subject Name		**Dissertation Phase – II**				
Subject Code		**MEMD20S401**				
Paper	**English**					
	Hindi					
Max. Marks		**500**				

Course Objectives:

1. In this course unit, students will learn the process of research proposal writing, conducting research, and political science writing.
2. The focus is on preparing the Special Degree students for their research and dissertation writing.
3. To enable students to learn practical aspects of research.

Course Outcomes:

Students will be able to:

CO1: Ability to synthesize knowledge and skills previously gained and applied to an in-depth.

CO2: Capable to select from different methodologies, methods and forms of analysis to produce a suitable research design, and justify their design.

CO3: Ability to present the findings of their technical solution in a written report.

CO4: Presenting the work in International/ National conference or reputed journals.

CO5: Using linear programming approach using software.

Dissertation Phase – II

Guidelines for Dissertation Phase – II

1. As per the AICTE directives, the dissertation is a yearlong activity, to be carried out and evaluated in two phases i.e. Phase – I: July to December and Phase – II: January to June.
2. The dissertation may be carried out preferably in-house i.e. department's laboratories and centers OR in industry allotted through department's T & P coordinator.
3. After multiple interactions with guide and based on comprehensive literature survey, the student shall identify the domain and define dissertation objectives. The referred Model Curriculum of Engineering & Technology PG Courses [Volume -II].
4. literature should preferably include IEEE/IET/IETE/Springer/Science Direct/ACM journals in the areas of Computing and Processing (Hardware and Software), Circuits- Devices and Systems, Communication-Networking and Security, Robotics and Control Systems, Signal Processing and Analysis and any other related domain. In case of Industry sponsored projects, the relevant application notes, while papers, product catalogues should be referred and reported.
5. Student is expected to detail out specifications, methodology, resources required, critical issues involved in design and implementation and phase wise work distribution, and submit the proposal within a month from the date of registration.
6. **During phase – II,** student is expected to exert on design, development and testing of the proposed work as per the schedule. Accomplished results/contributions/innovations should be published in terms of research papers in reputed journals and reviewed focused conferences OR IP/Patents.
7. **Phase – II deliverables:** A dissertation report as per the specified format, developed system in the form of hardware and/or software, A record of continuous progress.
8. **Phase – II evaluation:** Guide along with appointed external examiner shall assess the progress/performance of the student based on report, presentation and Q & A. In case of unsatisfactory performance, committee may recommend for extension or repeating the work.