# Sardar Patel University, Balaghat (M.P.)

Curriculum

For

Diploma

Mechanical Engineering

From Session: 2024-25

# SARDAR PATEL UNIVERSITY, BALAGHAT (MP)

School of Engineering and Technology

Syllabus

Subject: Refrigeration & Air Conditioning, Subject Code: DME061

Course: Diploma, Branch: Mechanical, Semester: VI

Academic Session: 2024-25

**Course Content**

**Course Objectives:**

1. Understand Basic Principles of Refrigeration and Fundamental Cycle.
2. Analyze The State Diagrams for Different Modification Done on Vapor Compression Systems.
3. Classify The Use of Different Refrigerants and Refrigeration Principles.
4. Understand The Psychometric Charts, Standards of Ventilation for Comfort
5. Compute The Seasonal Load Required for Cooling and Ventilation.

**UNIT-I**

**Introduction:** (A) History of refrigeration, Principles and methods of refrigeration, ice, evaporative, liquid gas, dry ice, vortex tube, and thermoelectric refrigeration, unit of refrigeration concept of refrigerator, heat engine, heat pump, co-efficient of performance.

(B) Air refrigeration system- reversed Carnot cycle, limitations joule cycle, Boot-strap cycle, reduced ambient cycle and regenerative cooling cycles. Simple numerical problem

**UNIT-II**

**Vapour compression system:** Vapor compression cycle, p-h and t-s diagrams, deviations from theoretical cycle, sub-cooling and super heating, effects of condenser and evaporator pressure on cop; multi-pressure system: removal of flash gas, multiple expansion and compression with flash inter cooling; low temperature refrigeration: production of low temperatures, cascade system, dry ice, production of dry ice, air liquefaction system.

**UNIT-III**

**Vapour absorption system:** Theoretical and practical systems such as aqua-ammonia, Electrolux and other systems; Steam jet refrigeration: Principles and working, simple cycle of operation, description and working of simple system,

**Refrigerants:** nomenclature and classification, desirable properties, common refrigeration, comparative study, leak detection methods, environment friendly refrigerants and refrigerant mixtures, brine and its properties

**UNIT-IV**

**Psychrometric:** Calculation of psychrometric properties of air by table and charts;

**Psychrometric processes:** sensible heating and cooling, evaporative cooling, cooling and dehumidification, heating and humidification, mixing of air stream, sensible heat factor; principle of air conditioning, requirements of comfort air conditioning, ventilation standards, infiltrated air load, fresh air load human comfort, effective temperature and chart, heat production and regulation of human body, bypass factor of coil

**UNIT-V**

**Air conditioning loads:** calculation of summer & winter air conditioning load, calculation of supply air rate & its condition, bypass factor, room sensible heat factor, grand sensible heat factor, effective sensible heat factor, dehumidified air quantity. Problems on cooling load calculation.
Air distribution and ventilation systems, air conditioning system, and introduction to air conditioning equipment, introduction to cryogenics.

**List of Experiments:**

1. Determination of psychrometric properties by sling psychrometer.
2. Study and testing of simple vapor compression cycle.
3. Study and testing of water-cooling tower.
4. Study of ice plant.
5. Determine the coefficient of performance of a refrigeration test rig.
6. Study of refrigerant charging unit.
7. Study of window air conditioner.
8. determine the cop of a computer-controlled refrigeration test rig.
9. Study of air conditioning duct.
10. Study of different psychrometric processes on air conditioning test rig.
11. Study and testing of vapor absorption refrigeration system.

**Reference Book:**


- Arora CP; Refrigeration and Air Conditioning; TMH
- Sapali SN; Refrigeration and Air Conditioning; PHI
- Anantha Narayan; Basic Refrigeration and Air conditioning; TMH
- Manohar Prasad; Refrigeration and Air Conditioning; New Age Pub
- Ameen; Refrigeration and Air Conditioning; PHI
- Pita; Air conditioning Principles and systems: an energy approach; PHI
- Stoecker W.F, Jones J; Refrigeration and Air conditioning; McGH, Singapore
- Jordan RC and Priester GB Refrigeration and Air Conditioning, PHI USA
- Arora RC; Refrigeration and Air conditioning; PHI Learning


**Course Outcomes:**

1. Understand the history, principles, and methods of refrigeration and the concept of heat pumps and heat engines.
2. Analyze air refrigeration systems, including reversed Carnot cycle, Joule cycle, and regenerative cooling cycles.
3. Evaluate vapor compression systems and low-temperature refrigeration with multi-pressure systems and cascade methods.
4. Understand vapor absorption systems, steam jet refrigeration, refrigerant properties, and environmental considerations.
5. Calculate psychrometric properties, air conditioning loads, and comprehend air distribution, ventilation, and cryogenic systems.

# SARDAR PATEL UNIVERSITY, BALAGHAT (MP)

School of Engineering and Technology

Syllabus

Subject: Automobile Engineering, Subject Code: DME062

Course: Diploma, Branch: Mechanical, Semester: VI

Academic Session: 2024-25

**Course Content**

**Course Objectives:**

1. Identify chassis type, body types and vehicle design.
2. Review steering system, wheel geometry and stability of vehicles.
3. Demonstrate transmission system, torque converters and fluid coupling.
4. Discuss suspension system, braking system, wheel and tyres.
5. Illustrate electrical system, trouble shooting and control system of automobile.

**UNIT I: - Introduction:** Meaning of automobile, elements of automobile, classification of automobile, layout of chassis, various operating systems used in automobile.
**Auto Engines:** Meaning of I.C. Engines, Classification on the basis of cycle, fuel used, ignition system, number of cylinders, number of strokes etc. Otto/ Diesel cycles. Two stroke and four stroke engines, merits and demerits, scavenging comparison of petrol and diesel engines. Cooling systems, firing order. Valve timing diagrams. Engine rating. Lubrication, factors affecting lubrication, Lubrication systems, Fuel Supply system, fuel pump - SPU electric pump. Carburetor, air fuel ratio, Solex and amal carburetor.

**UNIT II: - Front Axle and Steering:** Function of front axle, axle type, wheel alignment and its elements toe- in, toe -out. King pin inclination. Ackerman steering principle. Camber and castor angle. Elements of steering - types and working, Under and over steering, power steering and advanced steering systems.
**Auto Electric System:** Wiring diagram of a car and functions of various components used in the electric circuits, function and working principle of a starter and generator, function of voltage- current regulator, ignition timing, spark plugs- their classification, gap setting and common ignition troubles, their causes and remedies. Automobile battery - construction and working, electronic ignition system of modern vehicles.

**UNIT III: - Transmission System:** Clutch: necessity, function of its components, Types – single & multi plate and centrifugal clutches, clutch actuating mechanism and fluid flywheel.
**Gear Boxes:** necessity, Types of gear boxes and their working. Importance of gear shifting mechanism, gear box troubles, their causes and remedies.
**Final Drives System:** Drive mechanism in cars, purpose and working of propeller shaft, construction of propeller shaft. Types of universal joints.
**Rear axle assembly:** function of differential - constructional features and working. Arrangement of semi floating and fully floating rear axle, and their troubles.

**UNIT IV: - Braking system:** Introduction, classification of brakes, construction & working of mechanical brake, hydraulic brake, Electric brake, advantages and disadvantages of each type of brakes, Servo brake system.

**UNIT V: - Frame and Suspension: Frames:** necessity, function, Classification, suspension system, types, leaf, coil spring. Telescopic shock absorber. Air suspension, independent suspension system.
**Tyres:** structure of tyre section, rating of tyres, tyre- pressure measurement, material and specification. Tyre wear and remedies.

**List of Experiments:**

1. Study of an automobile chassis
2. Study of differential mechanism of an automobile
3. Study of braking system (hydraulic / air brake)
4. Study of multiple clutches of an automobile
5. Study and demonstration of different circuit of carburetor
6. Study the electrical system of an automobile
7. To study of internal combustion engine four stroke cycle engine (diesel/ petrol engine)

**Reference Books: -**


- Automobiles Engineering Vol. I & II by Dr. Kirpal Singh. (Standard Publisher)
- Automobiles Engineering by R.S. Gupta (Satya Prakashan)
- Automobile mechanism by Joseph Heither
- Automobile Engineering by R. P. Sharma (Dhanpat Rai & Sons)
- Automobile Mechanism by William H. Crouse
- I.C. Engines by Dr. A.C. Rad and S.B. Bechar
- Automobile Engineering- T.R. Banga & Nathu Singh (Khanna Publishers)


**Course Outcomes:**

1. Understand automobile elements, classification, and chassis layout.
2. Analyze I.C. Engines, cycles, fuel systems, and valve timing.
3. Explain front axle, steering systems, and wheel alignment parameters.
4. Interpret auto electrical systems, starters, ignition, and spark plugs.
5. Evaluate transmission systems, clutches, gearboxes, and rear axles.

# SARDAR PATEL UNIVERSITY, BALAGHAT (MP)

School of Engineering and Technology

Syllabus

Subject: Dynamics Of Machines, Subject Code: DME063

Course: Diploma, Branch: Mechanical, Semester: VI

Academic Session: 2024-25

**Course Content**

**Course Objectives:**

1. Systematic design and optimization of mechanisms to perform specified tasks.
2. Analyze and understand the dynamics i. e. position, velocity and acceleration characteristics, of mechanisms such as linkage and cams.
3. Understand basics of gear geometry and design procedures.
4. Develop the required analytical and practical capabilities to understand the dynamic working of mechanical machines that include most basic mechanisms.
5. Use methods of vector kinematics to analyze the translation and rotational rigid bodies and explain with appropriate visualization.

**UNIT I: - Dynamic force analysis, Crank Effort Diagrams and Flywheel:** Dynamics of reciprocating engine mechanism. Inertia force due to reciprocating mass, piston effort crank effort, turning moment on crank shaft, Analytical and graphical methods of construction of turning moment diagrams for steam and I.C. engines. Fluctuation of energy and speed. Coefficient of fluctuation of energy and speed. Flywheel and its function. Calculation of moment of inertia. weight of flywheel for steam and I.C. engines.

**UNIT II: - Brakes and Dynamometers:** Brakes - need, types, braking force, braking torque. band brakes, block brakes, internally expanded brakes, dynamometer- meaning, need and types. Simple numerical calculation on above items

**UNIT III: - Governors:** Functional difference with flywheel. Classification: Watt, porter, Proell and Hartnell- their construction and working. Sensitivity, stability, power and effort, hunting phenomenon and isochronism of governor.

**UNIT IV: - Balancing of Machine Parts:** Concept Static and dynamic balancing of rotating parts. Simple numerical problems on static balancing of several masses in single plane graphical and analytical method.

**UNIT V: - Vibrations:** Introduction elements of vibration. System classification and explanation of the types of vibration according to the actuating force on the body like undamped vibration. Free damped vibration and forced damped vibration. Classification and explanation of the types of vibration according to the number of degrees of critical speed of shaft.

**Reference Books**:


- Ambekar, AG; Mechanism and Machine Theory; PHI
- Rattan SS; Theory of machines; TMH
- Sharma and Purohit; Design of Machine elements; PHI
- Theory of Machines; Deepak Prakashan

# SARDAR PATEL UNIVERSITY, BALAGHAT (MP)

School of Engineering and Technology

Syllabus

Subject: (Elective-II) Modern Practice in Manufacturing & Management

Subject Code: DME064(A)

Course: Diploma, Branch: Mechanical, Semester: VI

Academic Session: 2024-25

**Course Contents**

**Course Objectives:**

1. Laboratory modules of hydraulics, pneumatics and/or electro-pneumatics
2. Study of working of Logic Gates practically
3. Simulation of designed pneumatics / hydraulics systems
4. Linear and angular measurement
5. Measurement of bores, tapers, threads, gears and surface

**UNIT I: - Unconventional Machining Methods: -** Limitations of conventional machining. Working Principle, operating parameters and application of unconventional machining. Electro Chemical Machining, Chemical Machining, Electric Discharge Machining, Electron beam Machining, Ultra Sonic Machining, Abrasive Jet Machining, LASER Beam Machining, Plasma Arc Machining.
**Coating & Deposition processes: -** plating & related processes, physical vapor deposition, chemical vapor deposition, Organic Coating,
**Rapid Prototyping: -**Need, Fundamentals, Technologies and applications.

**UNIT II: - Manufacturing Automation: -** Introduction to Numerical control, Computer Numerical control, Direct Numerical Control, CNC Millings M/c, CNC Turning M/c, Turn mill centers, flexible manufacturing system, Preliminary idea of robotics. Introduction to G and M code as used in part programming. Use of Canned cycles. Simulation of parts, drawing generated through CAD, its modeling and transfer
**Flexible Manufacturing systems: -** Elements, Limitations, Feature & Characteristics, New development.

**UNIT III: - Robotics**: Introduction to robotics, concept, and application, A4 level automation
**Total Quality Management (TQM): -** Evolution, definition, preparation stages in TQM implementation, Integrated TQM model, customer satisfaction, Employee involvement. Continuous Process Improvement, 5s, Kaizen, and KANBAN, Supplier Partnership, Performance Measures. Just in Time systems (JIT) – Introduction, application and advantages

**UNIT IV: - Total Productive Maintenance (TPM): -** Introduction, Plan, New Philosophy Improvement needs, Six Major losses Life cycle costing, work groups.
**Introduction to Quality Standards: -** ISO 9000- Introduction History, Indian Equivalence, System requirements for ISO 9001, 9002,9 003, steps for installation, how to apply. QS 9000 Quality Management systems. ISO 14001- Introduction, Environment Management system, Background, vocabulary and Application OHSAS 18001- Occupational Health and Safety Assessment Series Introduction, scope, related terms, structure and operating features TS 16949 – Quality system certificate consisting following standard

**UNIT V: - Lean manufacturing: -** System design for Lean manufacturing adopting.

**Why-Why analysis (5W 1 H)**: - Use of Why Why analysis to know the actual cause of failures and problems.

**Six Sigma systems: -** Basics of Six Sigma, competitive advantage of implementing six sigma systems. Briefs of what, why and how six sigma works to initiate and sustain greater productivity, profitability and customer satisfaction rates.

**Reference Books:**


- Fundamentals of Manufacturing processes, G. K. Lal & S. K. Choudhary, Narosa Publishing House.
- A Textbook of production Technology (Manufacturing Processes) by P.C. Sharma, S. Chand & Co.
- Manufacturing Technology Vol. II By P.N. Rao, Tata McGraw Hill Publishing Co.
- Fundamentals of Modern Manufacturing by Mikell P. Groover, Wiley Student Edition.
- Quality Management by Donna C.S. Summers Pearson Prentice Hall
  Total Quality Management by L. Sugandhi & Anand A. Samuel Prentice Hall of India Pvt. Ltd


**Course Outcomes:**

1. Understand unconventional machining methods, coating processes, and rapid prototyping.
2. Analyze manufacturing automation, CNC systems, part programming, and flexible manufacturing systems.
3. Explain robotics, total quality management (TQM), and continuous improvement techniques.
4. Understand total productive maintenance (TPM), quality standards (ISO, QS, OHSAS), and their application.
5. Apply lean manufacturing principles, Why-Why analysis, and Six Sigma systems for process improvement.

# SARDAR PATEL UNIVERSITY, BALAGHAT (MP)

School of Engineering and Technology

Syllabus

Subject: (Elective-II) Power Plant Engineering  Subject Code:064(B)

Course: Diploma, Branch: Mechanical, Semester: VI

Academic Session: 2024-25

**Course Contents**

**Course Objectives:**

1. Recognize different sources of energy and types of power plants.
2. Analyze different types of steam cycles and estimate efficiencies in a steam power plant, its components and sub-systems.
3. Recognize the nuclear Power Station fundamental, types, principles of reactor control, safety and reliability features.
4. Describe the concepts and elements of Hydrological computations, various types of hydro stations, components, selection of hydraulic turbines for power stations and selection of site.
5. Estimate and predict the load and their influence on plant design, simple problems on cost analysis, economic performance, tariffs and elements of load dispatch in interconnected

**UNIT I: - Steam Power Plant:** Energy conversion in a thermal power station. Limitations on conversion of heat into work, direct conversion devices, central power station, industrial power station, captive power station, advantages. Classification of power station on the basis of prime movers. Elements of steam power plant, function of each element- generating unit, prime mover, auxiliary equipment and turbo generator. Revision & Improvement of thermal efficiency of Rankine cycle by lowering exhaust pressure, increasing boiler pressure and superheating of steam. Simple problems on Rankine efficiency.
**Reheat cycle:** Representation on T-S and H-S planes, flow diagram and advantages. Simple regenerative cycle: flow diagram, representation on T-S and H-S planes, bleeding and feed water heating and pumping.

**UNIT II: - Steam Generators:** Classification according to working pressure Accessories - Super heater, economizer, pre-heater and draft equipment, superheat control methods, pulverized fuel- necessity, storing system. High pressure boiler in modern steam power plant need, features and functions of Velox, Benson, Lamont, Loeffler high pressure boiler.
**Steam Prime mover:** Steam Nozzle-Types, velocity of steam at outlet, weight of discharge, area of cross- section at throat and outlet, critical pressure ratio, nozzle efficiency, concept of prime mover, steam turbine- Revision of steam turbine in terms of principle of working, methods of compounding and governing, losses in steam turbines, lubrication system of steam turbines.

**UNIT III: - Condensing Unit:** Steam Condenser, functions, type-jet and surface. Limitations and advantages, elements of condensing unit-cooling towers.
**Steam Power Station Control and Safety:** Effect of load variation on shaft speed, steam admission, valve opening, steam flow rate, steam pressure and combustion control system.
Necessity of controlling factors in load variation, control system (area system, centralized

control system) functions of annunciator panel system, basic elements of control system, controls and instruments located in a modern central station. Control room, records and their purpose, log sheets or log book.

**UNIT IV: - Nuclear Power Stations:** Nuclear reactions - fission, fusion, mass defect, binding energy, chain reaction, types of nuclear materials - fissile materials, fertile materials, process of conversion of fertile materials, breeding moderation.
**Nuclear reactor**: Function- elements of a nuclear reactor- Reacted core, moderator, thermal - Shielding reflector, reactor vessel, fuel, coolant flow, control roads, biological shielding coolants (Caesarstone-boiling liquid, boiling liquid)

**UNIT V: - Diesel Power Plants:** Advantages and disadvantages as a prime mover for power generation, essential components of diesel power plant and function. Cooling and lubrication system, fuel injection system.
**Gas Turbine Powers Plants:** Advantages of gas turbines over I.C. Engine as prime movers, Brayton or Joule cycle, schematic diagrams for open and closed cycles, representation of cycle on P.V. and T.S. diagram. Thermal efficiency in terms of terminal temperature and pressure.
**Hydro Electric Plants:** Types, Comparison of low, medium and high heat plants, elements of hydro power plants, governing of turbines, performance of water turbines, site selection.

**Reference Books:**


- Course in Power Plant Engineering by S. Domkundwar.
- A Course in Power Plant Engineering by T. Morse.
- A Course in Power Plant Engineering by Nagpal.
- A Course in Power Plant Engineering by Agrawal.


**Course Outcomes:**

1. Understand steam power plants, Rankine cycle improvements, and reheat/regenerative cycles.
2. Analyze steam generators, high-pressure boilers, steam nozzles, and turbines.
3. Explain steam condenser units, power station control systems, and load variation management.
4. Understand nuclear power station components, reactions, and nuclear reactor functions.
5. Analyze diesel, gas turbine, and hydroelectric power plants, their advantages, and performance.

# SARDAR PATEL UNIVERSITY, BALAGHAT (MP)

School of Engineering and Technology

Syllabus

Subject: Major Project Subject Code:065P

Course: Diploma, Branch: Mechanical, Semester: VI

Academic Session: 2024-25

**Course Contents**

**Course Objectives:**

1. Understand The Importance of Working in Team. Develop Skill of Working as an Individual and Team Leader
2. Implement The Design or Idea in Real Time Situation
3. Conduct Failure Mode Effect and Critical Analysis of Current Scenarios.
4. Use Modern Analysis Tool.
5. Use High End Instrumentation in Experimental Setup.

The focus of the Major Project is on preparing a working system or some design or understanding of a complex system using system analysis tools and submit it the same in the form of a write up i.e. detail project report. The student should select some real-life problems for their project and maintain proper documentation of different stages of project such as need analysis market analysis, concept evaluation, requirement specification, objectives, work plan, analysis, design, implementation and test plan. Each student is required to prepare a project report and present the same at the final examination with a demonstration of the working system (if any)

**Working schedule:** The faculty and student should work according to following schedule:
Each student undertakes substantial and individual project in an approved area of the subject and supervised by a member of staff. The student must submit outline and action plan for the project execution (time schedule) and the same be approved by the concerned faculty.

Action plan for Major Project work and its evaluation scheme #(Suggestive)

| Task/Process | Week | Evaluation | Marks For Term Work# |
|---|---|---|---|
| Orientation of students by HOD/Project Guide | 1st | - | - |
| Literature survey and resource collection | 2nd | - | 30 |
| Selection and finalization of topic before a committee* | 3rd | Seminar-I | 30 |
| Detailing and preparation of Project (Modeling, Analysis and Design of Project work | 4th to 5th | 0 | 30 |
| Development stage | - | - | - |
| Testing, improvements, quality control of project | 6th to 10th 11th | | - |
| Acceptance testing | 12th | - | 30 |
| Report Writing | 13th to 15th | - | 20 |
| Presentation before a committee (including user manual, if any) | 16th | Seminar-II | 60 |

* Committee comprises of HOD, all project supervisions including external guide from industry (if any) # The above marking scheme is suggestive, it can be changed to alternative scheme depending on the type of project, but the alternative scheme should be prepared in advance while finalizing the topic of project before a committee and explained to the concerned student as well.

**NOTE:** At every stage of action plan, students must submit a write up to the concerned guide:

# SARDAR PATEL UNIVERSITY, BALAGHAT (MP)

School of Engineering and Technology

Syllabus

Subject: Seminar & Group Discussion Subject Code:066P

Course: Diploma, Branch: Mechanical, Semester: VI

Academic Session: 2024-25

**Course Contents**

**Course Objectives:**

1. To develop students' skills in researching, analysing, and presenting technical topics.
2. To encourage independent learning and critical thinking on contemporary issues in mechanical engineering.
3. To enhance communication skills, both verbal and written, within a technical context.
4. To foster teamwork and collaboration among students.
5. Use Existing Resource Available in The Institution and Nearby Geographical Area.

**Unit-I**

**Introduction to Seminar Course:** Overview of seminar objectives, expectations, and evaluation criteria. Guidelines for selecting seminar topics. Introduction to research methodologies and sources of information.

**Topic Selection and Approval:** Students select seminar topics based on recent trends in mechanical engineering, industry developments, or research interests. Approval of selected topics by the faculty supervisor.

**Unit-II**

**Research and Literature Review**: Conducting a literature review on the chosen topic. Identifying key papers, articles, patents, and industry reports relevant to the topic. Understanding the state-of-the-art and challenges in the selected area.

**Unit-III**

**Seminar Outline and Draft Preparation:** Preparing an outline of the seminar, including key points, objectives, and structure. Developing a draft of the seminar presentation and report. Faculty feedback and revisions.

**Presentation Skills and Visual Aids:** Workshops on effective presentation techniques, including body language, voice modulation, and audience engagement. Training on creating effective visual aids (PowerPoint, posters, etc.). Practice sessions for peer and faculty feedback.

**Unit-IV**

**Seminar Presentations (Part 1):** Students present their seminars in front of peers and faculty members. Each presentation followed by a Q&A session to test the depth of understanding. Peer and faculty evaluation based on content, delivery, and engagement.

**Seminar Presentations (Part 2):** Continuation of student presentations. Emphasis on improving based on feedback from earlier sessions.

**Unit-V**

**Report Writing and Submission:** Preparing a comprehensive technical report based on the seminar topic. Guidelines for structuring the report: Abstract, introduction, methodology,

findings, conclusion, and references. Submission of the final report for evaluation.
**Feedback and Reflection:** Individual feedback sessions with faculty on seminar performance. Reflection on strengths and areas for improvement in research and presentation skills. Discussion on how to apply these skills in future academic and professional settings.

## References:


- The Craft of Research by Wayne C. Booth, Gregory G. Colomb, and Joseph M. Williams
- Engineering Communication: A Practical Guide to Workplace Communications for Engineers by David Ingre
- Technical Communication: A Practical Approach by William S. Pfeiffer
- Presentation Zen: Simple Ideas on Presentation Design and Delivery by Garr Reynolds
- How to Write and Publish a Scientific Paper by Robert A. Day and Barbara Gastel
- A Student's Guide to Presentations: Making Your Presentation Count by Barbara Chivers and Michael Shoolbred


**Course Outcomes:**

1. Understand seminar objectives, research methodologies, and topic selection processes.
2. Conduct thorough literature reviews and analyze key papers and industry trends.
3. Develop seminar outlines, draft presentations, and receive faculty feedback.
4. Enhance presentation skills, create visual aids, and engage in peer-reviewed practice sessions.
5. Present seminars with depth of understanding and respond to Q&A sessions.
6. Prepare and submit comprehensive technical reports and reflect on performance for future improvement.