RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 1/5

Branch	Automobile Engineering	Semester	Fourth
Course Code	404	Course Name	Basics of Mechanical Engineering-II

Course Outcome 1	Student will be able to calculate values of various parameters related to flow of water in a pipeline	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to calculate the value of water pressure in a given problem, at any cross-sectional area of the pipe using continuity equation**	**08**	**05**
Contents	Important Properties of liquid- Viscosity, density, , specific gravity, various types of pressure – atmospheric pressure, gauge pressure, absolute pressure, vacuum pressure, flow of water in a pipe, continuity equation, simple numerical problems based on liquid pressure /continuity equation		
Method of Assessment	Theory exam		
Learning Outcome 2	**Student will be able to calculate the water pressure in a given problem, at a cross section of the pipe through use of simple U-tube mercury manometer**	**08**	**10**
Contents	Need of pressure measurement for water flowing in a pipeline, pressure at any section of pipe in terms of height of water column, various methods of pressure measurement, manometer and its types, theory construction and working of simple U tube mercury manometer, procedure for calculating the pressure using U tube mercury manometer		
Method of Assessment	Theory exam		
Learning Outcome 3	**Student will be able to calculate various parameters related to flowing water in a given simple problem of pipe equipped with Venturi-meter or Orifice-meter or Pitot tube using Bernoulli's equation**	10	10
Contents	Bernoulli's theorem, its application, various types of energy heads, Bernoulli's equation, construction and working of Venturi-meter, Orifice-meter and Pitot tube, use of Bernoulli's equation for calculating various parameters related to flowing water in a given simple problem of pipe equipped with Venturi-meter, Orifice-meterand Pitot tube.		
Method of Assessment	Theory exam		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 2/5

Branch	Automobile Engineering	Semester	Fourth

Course Code	404	Course Name	Basics of Mechanical Engineering-II

Course Outcome 2	**Student will be able to select, draw and interpret sketches and drawings related to threads, fasteners, weld joints, piping and production drawing related various symbols**	T-L Hrs	Marks
Learning Outcome 1	**Student will be able to select and draw sketches of different types of threads and fasteners in a given problem situation**	**08**	**10**
Contents	Detachable & permanent fasteners, sketches of threads (square, acme, knuckle, Internal – external threads, Left hand – right hand threads, Single & multi start threads), sketches of studs (cap screws, machine screws, set screws), sketches of bolts & nut (hexagonal, square), sketches of rivets (snap, pan, countersunk, conical), sketches of common keys		
Method of Assessment	Theory exam		
Learning Outcome 2	**Student will be able to draw and interpret the weld joints, piping and production drawing related various symbols.**	**08**	**05**
Contents	Weld symbols as per BIS-813 / ASME (primary symbols & supplementary symbols), weld nomenclature, weld dimensions, pipe-types, standards and designation methods, pipe line symbol as per passing fluid, air, gas, water, Piping fitting symbols, pipe line diagram.		
Method of Assessment	Theory exam		
Learning Outcome 3	**Student will be able to interpret and explain the meaning and relevance of various symbols and values used in the given simple production or assembly drawings**	**12**	**10**
Contents	Meaning and relevance of different sections, dimensions, symbols related to limits, fits, tolerances, machining and welding symbols, pipe related symbols, different drawing notes, tool list and gauge list.		
Method of Assessment	Theory exam		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 3/5

Branch	Automobile Engineering	Semester	Fourth

Course Code	404	Course Name	Basics of Mechanical Engineering-II

Course Outcome 3	Student will be able to apply appropriate methods to enhance the productivity and quality in the industrial activities	T-L Hrs.	Marks
Learning Outcome 1	**Student will be able to calculate standard time in the given problem, from given time data gathered through stop watch time study or work sampling**	**07**	**10**
Contents	Time study, its importance for productivity, uses of time study, procedures of stop watch time study and work sampling, observed and standard times, performance rating, calculation of standard time from given time related data gathered from either stop watch method or work sampling, simple numerical problems based on use of formula only		
Method of Assessment	Theory exam		
Learning Outcome 2	**Student will be able to calculate number of pieces in a given lot, which fall within two given specification limits, considering the given confidence level, using the standard tables for area under normal distribution curve**	**09**	**05**
Contents	Normal distribution curve, its important characteristics, six sigma limits, confidence levels, z-value, use of z-value tables, calculation of area under normal curve, other applications in statistical quality control, simple numerical problems on calculation of area under the curve using standard tables		
Method of Assessment	Theory exam		
Learning Outcome 3	**Student will be able to calculate the values of centre line, upper control limit, and lower control limit for X bar & R charts, and construct the charts for the given data, interpret the given chart for assessing quality of the production process**	**09**	**10**
Contents	Quality control in manufacturing and assembling processes, theory of statistical process control, process control charts, their types and use, UCL, LCL, Centre-line values and their formulae for X bar & R charts, calculations of values, procedure for actual chart preparation at the shop floor, analysis of charts for improving productivity		

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 4/5

Branch	Automobile Engineering	Semester	Fourth

Course Code	404	Course Name	Basics of Mechanical Engineering-II

Method of Assessment	Theory exam

RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 5/5

Branch	Automobile Engineering	Semester	Fourth

Course Code	404	Course Name	Basics of Mechanical Engineering-II

Course Outcome 4	Student will be able to explain the theory, construction, working of basic vapor compression refrigeration system	T-L Hrs.	Marks
Learning Outcome 1	**student will be able to explain various basic concepts used in refrigeration and air conditioning**	**07**	**05**
Contents	Cooling, throttling process, coefficient of performance, humidity, Dalton's law of partial pressure, psychometric processes, psychometric chart, humidity, human thermal comfort, humidification, adiabatic saturation P-h and T-s diagrams		
Method of Assessment	Paper pen test		
Learning Outcome 2	**Student will be able to calculate COP, refrigerating effect, and heat rejected in given simple numerical problem based on Reversed Carnot Cycle or Bell Coleman Cycle**	**11**	**10**
Contents	Reversed Carnot cycle, representation on P-h and T-s diagrams, its limitations, Bell- Coleman cycle, representation on P-h and T-s diagram, calculation of refrigerating effect and heat rejected and COP for both the cycles, simple numerical problems based on use of formula		
Method of Assessment	Theory exam		
Learning Outcome 3	**Student will be able to explain the construction, working of basic vapor compression refrigeration system.**	**08**	**10**
Contents	Theory, construction and working of basic vapor compression refrigeration system, construction and working of main components		
Method of Assessment	Theory exam		

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	1	1	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to calculate values of various parameters related to flow of water in a pipeline**
LO Description	**Student will be able to calculate the value of water pressure in a given problem, at any cross -sectional area of the pipe using continuity equation**

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	Important Properties of liquid- Viscosity, density, , specific gravity, various types of pressure – atmospheric pressure, gauge pressure, absolute pressure, vacuum pressure, flow of water in a pipe, continuity equation, simple numerical problems based on liquid pressure /continuity equation	Traditional Lecture method	Teacher will explain different concepts and formulas related to contents, demonstrate methods of solving different problems. Students will practice to solve problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	06	02	Book:- Fluid Mechanics by R. S. Khurmi Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Examiner will frame two questions. First will be theoretical question to assess the ability of student to explain given theoretical concepts in approx. in 08 min. Second will be a numerical question to assess the ability of student to calculate the unknown variable by using the relevant formula, which can be solved by the student in approx. 12 min	05	Framed questions	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	1	2	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to calculate values of various parameters related to flow of water in a pipeline**
LO Description	**Student will be able to calculate the water pressure in a given problem, at a cross section of the pipe through use of simple U-tube mercury manometer**

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Need of pressure measurement for water flowing in a pipeline, pressure at any section of pipe in terms of height of water column, various methods of pressure measurement, manometer and its types, theory construction and working of simple U tube mercury manometer, procedure for calculating the pressure using U tube mercury manometer	Traditional Lecture method	Teacher will explain different concepts and formulas related to contents, demonstrate methods of solving different problems. Students will practice to solve problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	06	02	Book:- Fluid Mechanics by R. S. Khurmi Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Examiner will frame two questions. First will be simple numerical question to assess the ability of student to convert water pressure in to height of water column or vice-versa in approx. 06 min. Second will be a simple numerical question on U tube manometer to assess the ability of student to calculate the unknown variable by using the relevant formula, which can be solved by the student in approx. 12 min	10	Framed questions	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	1	3	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to calculate values of various parameters related to flow of water in a pipeline**
LO Description	**Student will be able to calculate various parameters related to flowing water in a given simple problem of pipe equipped with Venturi-meter or Orifice-meter or Pitot tube using Bernoulli's equation**

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Bernoulli's theorem, its application, various types of energy heads, Bernoulli's equation, construction and working of Venturi-meter, Orifice-meter and Pitot tube, use of Bernoulli's equation for calculating various parameters related to flowing water in a given simple problem of pipe equipped with Venturi-meter, Orifice-meterand Pitot tube.	Traditional Lecture method	Teacher will explain different concepts and formulas related to contents, demonstrate methods of solving different problems. Students will practice to solve problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	07	03	Book:- Fluid Mechanics by R. S. Khurmi Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Examiner will frame one question, which will be a simple numerical question on Venturimeter /orifice meter / Pitot tube to assess the ability of student to calculate the unknown variable by using the relevant formula, which can be solved by the student in approx. 15 min	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	2	1	

COURSE NAME	**Basics of Mechanical Engineering-I**
CO Description	**Student will be able to select, draw and interpret sketches and drawings related to threads, fasteners, weld joints, piping and production drawing related various symbols**
LO Description	**Student will be able to select and draw sketches of different types of threads and fasteners in a given problem situation**

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Detachable & permanent fasteners, sketches of threads (square, acme, knuckle, Internal – external threads, Left hand – right hand threads, Single & multi start threads), sketches of studs (cap screws, machine screws, set screws), sketches of bolts & nut (hexagonal, square), sketches of rivets (snap, pan, countersunk, conical), sketches of common keys	Traditional Lecture method	Teacher will explain different concepts and methods related to contents, demonstrate methods for solving different problems. Students will practice to solve problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	06	02	Book:- Machine Drawing by N. D. Bhatt Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Examiner will frame two questions, first will be to draw the given thread / nut / bolt/ stud in (to be solved in approx. 8 min.), second will be to sketch the given rivet or key (to be solved in approx. 7 min.)	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	2	2	

COURSE NAME	**Basics of Mechanical Engineering-I**
CO Description	**Student will be able to select, draw and interpret sketches and drawings related to threads, fasteners, weld joints, piping and production drawing related various symbols**
LO Description	**Student will be able to draw and interpret the weld joints, piping layout and pipe drawings.**

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Weld symbols as per BIS-813 / ASME (primary symbols & supplementary symbols), weld nomenclature, weld dimensions, pipe-types, standards and designation methods, pipe line symbol as per passing fluid, air, gas, water, Piping fitting symbols, pipe line diagram.	Traditional Lecture method	Teacher will explain different concepts and methods related to contents, demonstrate methods for solving different problems. Students will practice to solve problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	06	02	Book:- Machine Drawing by N. D. Bhatt Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Examiner will frame two questions, first will be to draw the given weld symbol, thread, second will be to sketch the given pipeline/ pipe fitting symbol, which can collectively be solved by the student in approx. 20 min	05	Framed question	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	2	3	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to select, draw and interpret sketches and drawings related to threads, fasteners, weld joints, piping and production drawing related various symbols**
LO Description	**Student will be able to interpret and explain the meaning and relevance of various symbols and values used in the given simple production or assembly drawings**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Meaning and relevance of different sections, dimensions, symbols related to limits, fits, tolerances, machining and welding symbols, pipe related symbols, different drawing notes, tool list and gauge list.	Traditional Lecture method	Teacher will explain meaning and relevance of different sections, dimensions, symbols, drawing notes, and lists used in production and assembly drawings, students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	08	04	Book:- Machine Drawing by N. D. Bhatt Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Examiner will frame two questions, first will be about meaning and relevance of limits, fits, tolerances related given symbols and values in a given drawing, second will be about meaning and relevance of the machining/welding symbols in a given drawing, which can be collectively solved by the student in approx. 20 min	10	Framed question	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	3	1	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to apply appropriate methods to enhance the productivity and quality in the industrial activities**
LO Description	**Student will be able to calculate standard time in the given problem, from given time data gathered through stop watch time study or work sampling**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Time study, its importance for productivity, uses of time study, procedures of stop watch time study and work sampling, observed and standard times, performance rating, calculation of standard time from given time related data gathered from either stop watch method or work sampling, simple numerical problems based on use of formula only	Traditional Lecture method	Teacher will explain the contents to students, demonstrate the procedures for calculating standard time, students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	05	02	Book:- Industrial Engg. by O. P. Khanna Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	A numerical question will be framed, based either on stop watch time study or on work sampling, for calculating the unknown variable using the formula and given values of known variables, which can be solved by the student in approx. 15 min.	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	3	2	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to apply appropriate methods to enhance the productivity and quality in the industrial activities**
LO Description	**Student will be able to calculate number of pieces in a given lot, which fall within two given specification limits, considering the given confidence level, using the standard tables for area under normal distribution curve**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Normal distribution curve, its important characteristics, six sigma limits, confidence levels, z-value, use of z-value tables, calculation of area under normal curve, other applications in statistical quality control, simple numerical problems on calculation of area under the curve using standard tables	Traditional Lecture method	Teacher will explain the contents to students, demonstrate the procedures for finding area under the curve, students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	06	03	Book:- Industrial engg. by O. P. Khanna Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	A numerical question will be framed, for finding calculating the portion of population or area under the normal distribution curve after calculating z values or using given z-value and using normal curve area tables or given normal curve area values, which can be solved by the student in approx. 15 min.	05	Framed question	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	3	3	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to apply appropriate methods to enhance the productivity and quality in the industrial activities**
LO Description	**Student will be able to calculate the values of centre line, upper control limit, and lower control limit for X bar & R charts, and construct the charts for the given data, interpret the given chart for assessing quality of the production process**

SCHEME OF STUDY

S. No	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Quality control in manufacturing and assembling processes, theory of statistical process control, process control charts, their types and use, UCL, LCL, Centre-line values and their formulae for X bar & R charts, calculations of values, procedure for actual chart preparation at the shop floor, analysis of charts for improving productivity	Traditional Lecture method	Teacher will explain the contents to students, demonstrate the procedures for preparation of X bar & R charts, students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	06	03	Book:- Industrial engg. by O. P. Khanna Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	A question will be framed, in which student will be asked to calculate the values of centerline, UCL, LCL for X bar or R chart and plot the chart on the graph paper, which can be solved by the student in approx. 15 min	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	4	1	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to explain the theory, construction, working of basic vapor compression refrigeration system**
LO Description	**student will be able to explain various basic concepts used in refrigeration and air conditioning**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Cooling, throttling process, coefficient of performance, humidity, Dalton's law of partial pressure, psychometric processes, psychometric chart, humidity, human thermal comfort, humidification, adiabatic saturation P-h and T-s diagrams	Traditional Lecture method	Teacher will explain the contents to students, students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	05	02	Book:- Refrigeration and Air Conditioning by C. P. Arora Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Paper pen test	A question will be framed to assess the ability of student to explain the given three basic concepts, which can be solved by the student in approx. 15 min	05	Framed question	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	4	2	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to explain the theory, construction, working of basic vapor compression refrigeration system**
LO Description	**Student will be able to calculate COP, refrigerating effect, and heat rejected in given simple numerical problem based on Reversed Carnot Cycle or Bell Coleman Cycle**

SCHEME OF STUDY

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Reversed Carnot cycle, representation on P-h and T-s diagrams, its limitations, Bell- Coleman cycle, representation on P-h and T-s diagram, calculation of refrigerating effect and heat rejected and COP for both the cycles, simple numerical problems based on use of formula	Traditional Lecture method	Teacher will explain the contents to students, , students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	07	04	Book:- Refrigeration and Air Conditioning by C. P. Arora Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	A numerical question will be set to assess the ability of student to calculate the unknown variable while using the formulae of COP, which can be solved by the student in approx. 15 min	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		A	0	3	4	0	4	4	3	

COURSE NAME	**Basics of Mechanical Engineering-II**
CO Description	**Student will be able to explain the theory, construction, working of basic vapor compression refrigeration system**
LO Description	**Student will be able to explain the construction, working of basic vapor compression refrigeration system.**

SCHEME OF STUDY

S. No	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Theory, construction and working of basic vapor compression refrigeration system, construction and working of main components	Traditional Lecture method	Teacher will explain the contents to students, , students will practice to solve different problems under guidance of the teacher. Teacher will assess their ability and provide necessary remedial and tutorials	05	03	Book:- Refrigeration and Air Conditioning by C. P. Arora Or Its equivalent	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1.	Theory exam	Two questions will be asked to assess the ability of student to explain theory /construction/ working of the refrigeration system/ main components, which can be solved by the student in approx. 15 min	10	Framed question	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL