Date: 29-11-2021

To,

The Dean Academics,

R.I.T., Rajaramnagar.

Inward No. 1467.
Date 6/12/21
Acad ☐ St Dev ☐ Q.A ☐
PIC Inf ☐ PIC R&D ☐

Sub: Amendments in S.Y. B.Tech. Mechanical Engineering Automobile structure and syllabus of 2019-23 curriculum

Respected Sir,

The following changes are proposed in the S.Y. B.Tech. Mechanical Engineering Automobile structure and syllabus of 2019-23 curriculum.

Class	Old course with course code	New course with course code
S.Y. B.Tech.	Environmental Science (SH2172)	Environmental Science (SH2173)
	Environmental Science Project (SH2612)	Environmental Science Project (SH2603)
	German Language-Advanced Level (SH2713)	German Language-Advanced Level (SH2643)

The old and revised structure of S.Y. B.Tech. Mechanical Engineering Automobile along with syllabus of courses are attached herewith for your reference. You are requested to kindly permit for the amendments in the respective curriculum structure.

Thanking you.

Dr. S. R. Kumbhar
Chairman, B.O.S. Automobile Engineering
RIT, Rajaramnagar

Auto Engg. Dept.

Permitted

K.E. Society's
Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute, affiliated to Shivaji University, Kolhapur)
Curriculum Structure and Evaluation Scheme
With effective from 2019-23 [2019-23 and 2020-24 Batch]
Department of Automobile Engineering

Rev: MA/RIT/02/2019-23

Class: S. Y. B. Tech. Mechanical Engineering Automobile **Semester:** III

Course Code	Course	Teaching Scheme				Evaluation Scheme				
							Theory (Marks)		Practical (Marks)	
		L	T	P	Credits	Scheme	Max	Min. for passing (%)	Max.	Min. for passing (%)
SH2032	Engineering Mathematics – III	3	1	-	4	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		----	---
						ESE	50	40	----	----
MA201	Applied Thermodynamics	3	-	-	3	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		----	----
						ESE	50	40	----	----
MA203	Engineering Mechanics	3	-	-	3	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		----	----
						ESE	50	40	----	----
MA205	Manufacturing Technology	3	-	-	3	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		----	----
						ESE	50	40	----	----
MA207	Material Science & Metallurgy	3	-	-	3	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		---	----
						ESE	50	40	----	----
SH2173	Environmental Science	1*	-	-	1	ISE	50	40	----	----
						ESE	50	40	----	----
MA209	Workshop Practice – I	-	-	2	1	ISE	-----	-----	100	50
MA211	Engineering Mechanics Lab.	-	-	2	1	ISE	----	----	100	50
MA213	Machine Drawing Lab.	-	-	2	1	ISE	----	----	50	50
						ESE	----	----	50	50
MA215	Technical Aptitude-I	-	-	2*	1	ISE	----	----	50	50
						ESE			50	50
SH2603	Environmental Science Project	-	-	2	1	ISE	----	----	100	50
	Open Elective- II Professional Skills Development and Foreign Languages - I	-	-	2	1	ISE	----	----	60	50
						ESE	----	----	40	50
	TOTAL	**16**	**1**	**12**	**23**					

ISE = In Semester Evaluation, UT1 = Unit Test 1, UT2 = Unit Test 2, ESE = End Semester Examination

Total Contact Hours/week : 29
Total Credits : 23

Note*: One hour extra lecture to be allotted in the time-table.
Technical Aptitude-I: Engineering Mathematics – III, Applied Thermodynamics, Engineering Mechanics

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Open Elective- II

Sr. No.	Subject Name		Course Code
1.	Professional Skills Development and Foreign Languages - I	Professional Leadership Skills	**SH2633**
2.		Interpersonal Skills ['Jeevanvidya' for Work Life Balance]	**SH2613**
3.		Innovation Tools and Methods for Entrepreneurs	**SH2693**
4.		Personal Effectiveness and Body Language	**SH2593**
5.		German Language - Basic Level	**SH2733**
6.		Japanese Language - Level III	**SH2713**

Note:

1. *A student has to complete any two courses out of six choices offered under Choice Based Professional Skills Development Programme. A course in each semester will be allocated without any repetition.*

2. *Foreign language course selected in F.Y. Sem-I will remain the same with next levels in Sem-III and IV. (No new entries in S.Y. B.Tech Sem.-III)*

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Curriculum Structure and Evaluation Scheme
With effective from 2019-23 [2019-23 and 2020-24 Batch]
Department of Automobile Engineering

Rev: MA/RIT/02/2019-23

Class: S. Y. B. Tech. Mechanical Engineering Automobile **Semester:** IV

Course Code	Course	Teaching Scheme				Evaluation Scheme					
							Theory (Marks)			Practical (Marks)	
		L	T	P	Credits	Scheme	Max	Min. for passing (%)		Max	Min. for passing (%)
MA202	Kinematics of Machines	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
MA204	Fluid Mechanics & Machinery	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
MA206	Electric Drives and Controls	2	-	-	2	ISE	20	40	40	---	---
						UT1	15			--	---
						UT2	15			---	---
						ESE	50	40		---	---
MA208	Mechanics of Materials	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			--	---
						ESE	50	40		---	---
MA210	Industrial Organisation and Management	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
MA212	Metrology & Measurement Lab.	-	-	2	1	ISE	----	----		100	50
MA214	Fluid Mechanics & Machines Lab.	-	-	2	1	ISE	---	----		50	50
						ESE	---	----		50	50
MA216	Solid Modeling Lab.	-	-	2	1	ISE	---	----		100	50
MA218	Workshop Practice - II	-	-	2	1	ISE	---	---		100	50
MA220	Object-Oriented Programming Lab.	-	-	2	1	ISE	---	----		50	50
						ESE	----	----		50	50
MA222	Technical Aptitude-II	-	-	2*	1	ISE	----	----		50	50
						ESE				50	50
	Open Elective- III Professional Skills Development and Foreign Languages - II	-	-	2	1	ISE	-	-	--	60	50
						ESE	-	-		40	50
	TOTAL	**14**	**-**	**14**	**21**						

ISE = In Semester Evaluation, UT1 = Unit Test 1, UT2 = Unit Test 2, ESE = End Semester Examination

Total Contact Hours/week : 28
Total Credits : 21

Note: Students are required to undergo industrial / field training of a minimum of four weeks in the vacation of Semester-IV and its evaluation will be carried out in the Semester-V

Note*: One hour extra lecture to be allotted in the timetable.
Technical Aptitude-II : Kinematics of Machines, Mechanics of Materials, Fluid Mechanics & Fluid Machinery

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Open Elective- III

Sr. No.	Subject Name		Course Code
1.	Professional Skills Development and Foreign Languages - II	Professional Leadership Skills	**SH2633**
2.		Interpersonal Skills ['Jeevanvidya' for Work Life Balance]	**SH2613**
3.		Innovation Tools and Methods for Entrepreneurs	**SH2693**
4.		Personal Effectiveness and Body Language	**SH2593**
5.		German Language - Advanced Level	**SH2643**
6.		Japanese Language - Level IV	**SH2623**

Note:

1. *A student has to complete any two courses out of six choices offered under Choice Based Professional Skills Development Programme. A course in each semester will be allocated without any repetition.*

2. *Foreign language course selected in F.Y. Sem-I will remain the same with next levels in Sem-III and IV. (No new entries in S.Y. B.Tech Sem.-III)*

K.E. Society's

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Syllabus of S.Y. B.Tech. Mechanical Engineering Automobile

To be implemented from 2021-22

Department of Automobile Engineering

Class:- **S.Y. B. Tech**	Semester-IV
Course Code : **SH2173**	Course Name: **Environmental Science**

L	T	P	Credits
1*	--	--	1

Evaluation Scheme: ISE- 50% (Minimum Passing Marks: 40%)
ESE- 50% (Minimum Passing Marks: 40%)

Course Description:

The syllabus of Environmental Science provides an integrated, quantitative and interdisciplinary approach to the study of environmental systems. The students of Engineering undergoing this course would develop a better understanding of the environment with due respect to perceptions and policies. The exposure to the various content of the course like understanding of alternative energy systems, pollution control and mitigation, natural resource management and the effects of global climate change, will help the students to bring a systems approach to the analysis of environmental problems.

Course Learning Outcomes:

After successful completion of the course, students will be able to,

1. Discuss the importance and sensitivity of environment.
2. Interpret the over exploitation of natural resources and follow the environmental ethics.
3. Explain methods to protect environment and prevent environmental pollution.
4. Apply their knowledge and skills to solve environment related problems.

Prerequisite: Environmental Studies from Higher secondary school.

Course Content

Unit No	Description	Hrs
1	**Natural Resources:** Renewable and Non-renewable resources, Forest resources, water resources, Mineral resources, food resources, Energy resources, alternative energy resources Land resources, Role of individual in conservation of natural resources, Equitable use of resources for Sustainable life styles.	04
2	**Ecology and Environment** Definition, Principles and Scope of ecology, Ecosystem: Structure and Functions, biotic and abiotic components, energy flows, food chains, food web, ecological pyramids, Biodiversity, types of biodiversity, conservation of biodiversity.	04
3	**Environmental Pollution and Control Measures** Environmental Pollution, types of pollution, Air pollution, Water Pollution, Noise Pollution, Soil Pollution, Marine Pollution, Radioactive Pollution, Thermal Pollution (Causes, sources and effects, abatement methods), Pollution Case studies-Bhopal Gas Tragedy, Chernobyl Accident: A nuclear Disaster, Ganga Water Pollution.	04

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4.	**Solid Waste, Hazardous Waste and Disaster Management** Solid Waste management, Urban & industrial Waste Management, (Causes, sources, effects & control measures), Hazardous waste management, Plastic waste management, E-waste management, Waste minimization technology, Disaster management. Disaster management and risk analysis: Flood, Earthquakes, Cyclones, Landslides, Draught, Tsunami etc. Artificial and natural Pandemics.	**04**
5.	**Environmental Management** Environmental impact assessment, Impact Assessment Methodologies, Environmental impact statement and environmental management plan, Environmental audit, Cost-benefit analysis, Role of Central Pollution Control Board (CPCB),State Pollution Control Board, Role of NGO's, Role of Information technology in environment & human health, Environmental Ethics: Issues & possible solutions, Awareness of Environmental Legislation.	**04**
6.	**Social Issues and Environment** From unsustainable to sustainable development, Urban problems related to energy, Water conservation: Rainwater harvesting, Watershed management, Resettlement & rehabilitation of people: Problems & concerns, Climate change, Global Warming, Ozone layer depletion, Acid Rain, Consumerism & waste Products, Concepts of Eco-labeled products, Eco-mark, Public Environmental education &awareness regarding environmental issues.	**04**

References –

Text Books:

1. D.K.Asthana, Meera Asthana, A Textbook of Environmental Studies, S.Chand Publication Revised edition, 2006.
2. S. Deswal & A. Deswal, Basic course in environmental Studies, Dhanpat Rai & Co ltd., Delhi, Second revised edition, 2009.

Reference Books:

1. Eldon D Enger, Bradley F. Smith, Environmental science – a study of inter-relationships Wm C Brown Publishers 1989
2. Francois Ramade Ecology of Natural resources, John wiley & Sons
3. Robert Leo Smith, Ecology and field biology, Harper Collins Publishers
4. Gilbert M. Masters, Introduction to Environmental Engineering & Science, Prentice Hall International Inc. Second Edition

Class:- **S.Y. B. Tech.**	Semester-**IV**
Course Code : **SH2603**	Course Name : Environmental Science project

L	T	P	Credits
-	-	2	1

Evaluation Scheme: ISE- 100% (Minimum Passing Marks: 50%)

Course Description:
Project has been incorporated to enhance high potential in the student and built research and positive attitude towards environment related issues, which will help them in their social and technical life ahead. The mini project is designed to make them apply practical knowledge with relevant tools and techniques to solve real life problems related to the environment and industry. It will help students in developing eco-friendly approach to achieve sustainable development

Course Learning Outcomes:
After successful completion of the course, students will be able to,
1. Utilize scientific methods to solve environmental problems.
2. Evaluate technologies for restoration of degraded environment.
3. Develop presentation and report writing skills.
4. Develop as an individual and in group leadership quality

Guidelines for Environmental Science Project:

1. Project will be the team work consisting min 3 to max 5 students.
2. Project topic should be application oriented and with consideration to Environmental Science problems in their respective stream. Selection and finalization will be through project guide.
3. Prepare project report as per guidelines.
4. Project group must provide complete solution to the selected problem with conceptual clarity.
5. The project will be evaluated by respective branch HOD and project guide and senior faculty.
6. The project should be presented before the committee, which shall evaluate for 100 marks.

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Class: - **S.Y. B. Tech.**	Semester- **IV**
Course Code : **SH2643**	Course Name : **German Language - Advanced Level**

L	T	P	Credits
-	-	2	1

Course Description: This course exposes a learner to LSRW skills of German language. The course takes a student's German language skills to advanced level with situational conversations. The course helps learners in creating cross-cultural sensitization and adaptability skills. Here, a student prepares himself for German language examination.

Course Outcomes:
After successful completion of the course, students will be able to,
1. Interpret the language if the next person is speaking slowly and clearly.
2. Make use of the language in routine life with the routing topics like family, shopping, work etc.
3. Demonstrate the language by self-introduction in German with simple sentences.

Prerequisite: A Student, who is going to enroll for this course, should have following English language abilities:
1. Adequate knowledge of basic grammar of English language.
2. Intermediate level vocabulary of English language.
3. Communicate moderately using English language.

Course Content

Experiment No	Description	Hrs
1.	Body parts and Krankheiten(diseases) and home remedies	02
2.	Grammar- Imperative for du ,ihr, Sie	02
3.	Health tips and conversation at clinic Modal verbs - dürfen & sollen	02
4.	Professions related to health	02
5.	Vocabulary of vacation and activities in vacation	02
6.	Writing a postcard Grammar- Pronoun - man	02
7.	Topic- Weather Reading texts related to vacation and formation of "W" questions	02

8.	Grammar revision for the entire book	**02**
9.	Explaining the pattern of the exam and explanation of each skill's exam requirement	**02**
10.	Practice for Skill "Writing" and " Speaking"	**02**
11.	Practice for skill "Reading" and "Listening"	**02**
12.	Solving exam set 1 Speaking practice	**02**
13.	Solving exam set 2 speaking practice	**02**

References -

1. Studio D – A 1, Cornelsen Verlag, Goyal Publishing House, New Delhi.
2. Tangram aktuell A 1, Goyal Publishing House, New Delhi.
3. Lagune A 1, Goyal Publishing House, New Delhi.
4. Netzwerk A 1, Goyal Publishing House, New Delhi.

The extra notes will be provided to the students to complete the required syllabus.

Evaluation Scheme: ISE – 60% and ESE – 40% (Minimum Passing: 50% of ISE & ESE separately)

Evaluation Method: In every session students will be assessed. Each assessment will be of minimum 10 marks. The best 06 performances of the student will be considered for ISE. ESE will be conducted separately at the end of the semester.

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