



दिनांक - 25/06/2025

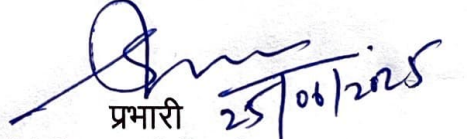
सेवा में,

कुलसचिव
गुरुकुल कांगड़ी (समविश्वविद्यालय)
हरिद्वार

महोदय,

अभियांत्रिकी एवं प्रौद्योगिकी संकाय के मैकेनिकल ईजी0 विभाग के बी.टेक पाठ्यक्रम एवं डिप्लोमा पाठ्यक्रम से सम्बंधित B.o.S की बैठक दिनांक 25/06/2025 को समय 2:00 बजे आनलाईन माध्यम से गूगल मीट के द्वारा सम्पन्न हुई। जिसकी (MoM) कार्यवाही पत्र के साथ संलग्न है।

धन्यवाद


प्रभारी 25/06/2025
मैकेनिकल ईजी0 विभाग
अभि0 एवं प्रौ0 संकाय

प्रतिलिपि:

1. परीक्षा नियंत्रक, गु0का0स0वि0वि0, हरिद्वार
2. सहा0 कुलसचिव, शिक्षा अनुभाग, गु0का0स0वि0वि0, हरिद्वार
3. डीन, एकेडमिक सेल, गु0का0स0वि0वि0, हरिद्वार
4. निदेशक, आई.क्यू.ए.सी. सेल, गु0का0स0वि0वि0, हरिद्वार
5. संकायाध्यक्ष, अभि0 एवं प्रौ0 संकाय

1 -

प्रभारी
मैकेनिकल ईजी0 विभाग
अभि0 एवं प्रौ0 संकाय



Board of studies (BoS) for B.Tech course and Diploma in Mechanical Engineering.

Minutes of Meeting

The Board of Studies (BoS) meeting of Department of Mechanical Engineering is conducted on 25/06/2025 (Wednesday) at 2:00 pm in Online Mode through Google Meet. The details of Online meeting are as follows:

Board of Studies Meeting (Mechanical Engineering) at GK(DU)
Wednesday, June 25 · 2:00 – 4:00pm
Time zone: Asia/Kolkata
Google Meet joining info
Video call link: <https://meet.google.com/enk-dkqv-orx>

The Members present during the meeting are as follows:

1. Prof. (Dr.) Anil Kumar, Professor, DTU Delhi (External Academic Expert)
2. Dr. Amit Joshi, Associate Professor, GBPIET, Pauri (External Academic Expert)
3. Er. Nitesh Dabre, Manager, BHEL Haridwar (External Industry Expert)
4. Er. Anuj Saini, AKS Enterprises (Alumni Representative)
5. Prof. (Dr.) Vipul Sharma, Head, Mechanical Engineering, FET, GK(DU), Haridwar
6. Dr. Sanjeev Kumar Lambha, Incharge, Mechanical Engineering, FET. GK(DU)
7. Dr. M.M Tiwari, Associate Professor, Applied Sciences (Chemistry Expert. FET. GK(DU))
8. Dr. Sunil Panwar, Head, Applied Sciences (Physics Expert FET. GK(DU))
9. Dr. Lokesh Joshi, Assistant Professor, Applied Sciences (Mathematics Expert. FET. GK(DU))
10. Mr. Gajendra Rawat, Incharge, Electrical Engineering, FET. GK(DU))
11. Mr. Praveen Kumar Pandey, Assistant Professor, Mechanical Engineering, FET. GK(DU)
12. Mr. Rishi Kumar Prajapati, Assistant Professor, Mechanical Engineering, FET. GK(DU)
13. Dr. Sunil Kumar, Assistant Professor, Mechanical Engineering, FET. GK(DU)
14. Dr. Jasbir Singh Assistant Professor, Mechanical Engineering, FET. GK(DU)
15. Mr. Kapil Dev Sharma, Assistant Professor, Mechanical Engineering, FET. GK(DU)
16. Mr. Yogesh Kumar, Assistant Professor, Mechanical Engineering, FET. GK(DU)
17. Dr. Mayank Pokhriyal, Assistant Professor, Mechanical Engineering, FET. GK(DU)

The meeting was started with Gayatri Mantra & the points discussed are as follows:

The agendas discussed in the meeting are as follows:

- Welcome all the Experts
- Course structure for 3rd (V-VI semester) and 4th (VII-VIII semester) year
- Bridge courses for UG program
- Bridge courses for Diploma
- NEP in B.Tech. ME
- Panel of Examiners


25/06/25









- Any other

Agenda 1:

1. The new committee members of BoS, Mechanical Engineering, are welcomed as External experts.

Agenda 2:

1. The Mechanical Engineering Design Lab is replaced by Mechanical Engineering (Manufacturing) Lab in semester VI.
2. The course Mechatronics is replaced by Mechatronics Robotics and Control in program elective-1 of semester VI.
3. The course Mechanical Engineering Design Lab is to be replaced by Mechanical Engineering (Manufacturing) Lab in semester VI.
4. The course Product Design and Development (BME-P525) it to be removed from Program Elective-I of semester VI.
5. The course Maintenance Management is to be replaced by Maintenance and Reliability Engineering in semester VII.
6. The course Simulation of Mechanical System (BME-P731) it to be removed from Program Elective-II/III of semester VII/VIII Semester.
7. The course 3-D Printing is to be added in Program Elective – II/III of semester VII/VIII Semester.
8. The course Flexible Manufacturing System is to be added in Program Elective – II/III of semester VII/VIII Semester.
9. In 7/8 th Sem new Program course to be added.
10. The course Biofuel is to be added in Program Elective-II/III of semester VII/VIII.
11. The course Artificial Intelligence and Robotics is to be replaced by Artificial Intelligence and Machine Learning in Open Elective II/III of semester VII/VIII.
12. The course Energy Resources and Management is to renamed as Green Energy Technology in Open Elective II/III of semester VII/VIII.
13. The course Engineering System Design Optimisation is to be replaced by Composites Materials in Open Elective II/III of semester VII/VIII.

[Handwritten signatures and date]
25/06/25



14. The course Power Plant Engineering is to be renamed Thermal Power Plant in Open Elective II/III of semester VII/VIII.
15. In Course Product Innovation and Entrepreneurship, the Module-1 and Module-2 is to be interchanged.

Agenda-3 & 4:

1. The bridge courses of Physics /Chemistry /Mathematics /Engineering Graphics and Design are proposed/accepted to be offered to the student coming from diverse background admitted in B.Tech Mechanical Engineering and Diploma Mechanical Engineering as per AICTE/APH.

Agenda-5:

1. The Panel of Examiners for B.Tech in Mechanical Engineering and Diploma in Mechanical Engineering for session 2025-26 is approved.

The Meeting ended with Shanti Path.

Handwritten signatures and initials:
A large signature in blue ink, possibly "J. Kumar".
A signature in black ink with the date "25/06/28" written below it.
Initials "ML" in blue ink.
Initials "ML" in blue ink.



दिनांक / Date : 31/07/2023
Ref No. FET/ME/23-24/

Board of studies (BOS) for Diploma and B. Tech. Course in Mechanical Engineering

Minutes of Meeting

The Board of Studies (BOS) meeting of Department of Mechanical Engineering is conducted on 31/07/2023 (Monday) at 11:30am in dual mode (Online & Offline) in Dean office of Faculty of Engineering and Technology. The details of Online meeting are as follows:

MEETING: Board of Studies(BoS) Mechanical Engineering, FET, GK(DU) (2023-24)

Monday, July 31 · 11:30am – 4:30pm

Time zone: Asia/Kolkata

[Google Meet joining info](#)

Video call link: <https://meet.google.com/zvj-gakg-jfj>

The members present during the meeting are as follows:

1. Prof. (Dr.) Vinod Kumar, Professor, NIT Kurukshetra (**External Expert**) (Online Mode)
2. Prof. (Dr.) Vipul Sharma, Dean, FET, GK(DU)
3. Dr M. M. Tiwari, Associate Professor, Head Applied Sciences (Chemistry Expert)
4. Dr Sunil Panwar, Associate Professor, Applied Sciences (Physics Expert)
5. Dr Vivek Goel, Assistant Professor, Applied Sciences (Mathematics Expert)
6. Mr. Gajendra Rawat, Incharge, Electrical Engineering
7. Mr. Sanjeev Kumar Lambha, Incharge, Mechanical Engineering
8. Mr. Namit Khanduja, Assistant Professor, Computer Science & Engineering
9. Mr. Praveen Kumar Pandey, Assistant Professor, Mechanical Engineering
10. Mr. Rishi Kumar Prajapati, Assistant Professor, Mechanical Engineering
11. Dr. Sunil Kumar, Assistant Professor, Mechanical Engineering
12. Dr. Jasbir Singh, Assistant Professor, Mechanical Engineering
13. Mr. Kapil Dev Sharma, Assistant Professor, Mechanical Engineering
14. Mr. Yogesh Kumar, Assistant Professor, Mechanical Engineering
15. Mr. Mayank Pokhriyal, Assistant Professor, Mechanical Engineering
16. Mr. Sumit Bansal, Assistant Professor, Computer Science & Engineering

The meeting was started with Gayatri Mantra & the points discussed are as follows:

1. The agendas discussed in the meeting are course structure of Diploma in ME, course structure of B.Tech. in ME, Syllabus of Diploma in ME, Syllabus of B.Tech. in ME, panel of examiners for session 2023-24.



दिनांक / Date : 31/07/2023

Ref No. FET/ME/23-24/

2. The course title of Applied Physics-I, Applied Physics-II and Applied Chemistry to be changed as Physics-I, Physics-II and Chemistry respectively
3. A laboratory of Physics-II is to introduce in second semester of Diploma in ME.
4. The course title of Introduction to IT system & Introduction to IT system Lab is to change as IT system & IT system Lab in second semester of Diploma in ME.
5. The course title of Fundamental of Electrical Engineering and Electronics Engineering and Fundamental of Electrical Engineering and Electronics Engineering Lab is to change as Electrical & Electronics Engineering and Electrical & Electronics Engineering Lab in second semester of Diploma in ME.
6. The course title of Material Science & Metallurgy and Material Science & Metallurgy Lab is to change as Material Science and Material Science Lab in third semester of Diploma in ME.
7. The course title of Industrial Exposure & Training is to change as Industrial Training in fourth semester of Diploma in ME.
8. The course title of Computer Application in Mechanical Drafting Design and Analysis and Computer Application in Mechanical Drafting Design and Analysis Lab is to change as Computer Application in Machine Design and Computer Application in Mechanical Drafting Design and Analysis Lab in sixth semester of Diploma in ME.
9. The reference books/ manuals are to mention in curriculum of laboratory courses of Diploma in ME.
10. The latest edition of reference books/ text books is to be included with their ISBN numbers in all the courses of Diploma in ME.
11. The same template should be considered to prepare the curriculum of all the courses of Diploma in ME.
12. The course Electrical Machines (BEE-C306) and Electrical Machines Lab (BEE-C356) is to be removed from third semester of B.Tech. in ME.
13. A new course Fluid Mechanics and Fluid Mechanics Lab is introduced in third semester of B.Tech. in ME.
14. The course Fluid Mechanics and Fluid Machines and Fluid Mechanics and Fluid Machines Lab is restructured and renamed as Fluid Machines and Fluid Machines Lab in fourth semester of B.Tech. in ME.
15. The course title Soft Computing Techniques is to be renamed as Soft Computing in Program Elective-I (Fifth semester) of B.Tech. in ME.
16. The course title Advanced Engineering Thermodynamics is to be renamed as Advanced Thermodynamics in Program Elective-I (Fifth semester) of B.Tech. in ME.



दिनांक / Date : 31 /07/2023

Ref No. FET/ME/23-24/

17. The course Applied Elasticity & Plasticity (BME-P525) is to be removed from Program Elective-I (Fifth semester) of B.Tech. in ME.
18. The course Control Theory & Applications (BME-P624) is to be removed from Program Elective-II & III (Sixth semester) of B.Tech. in ME.
19. The course Production Planning & Control (BME-P629) is to be removed from Program Elective-II & III (Sixth semester) of B.Tech. in ME.
20. The course Flexible Manufacturing System (BME-P730) is to be removed from Program Elective-IV & V (Seventh semester) of B.Tech. in ME.
21. The course Rural Technology & Community Development (BME-O735) is to be removed from Open Elective-III (Seventh semester) of B.Tech. in ME.
22. The two MOOCS courses is to run in eight semester of B.Tech. in ME.
23. The new course Manufacturing Automation is to be introduced in eight semester of B.Tech. in ME.
24. The new course Entrepreneurship Essentials is to be introduced in eight semester of B.Tech. in ME.
25. The panel of examiners for B.Tech. and Diploma program are approved in BoS meeting.

The meeting was ended with shanti path.



Date : 07 / 07 / 2021

Minutes of Meeting

The Board of Studies (BOS) meeting was arranged on 07/07/2021 at 11:40 A.M in an online mode. The meeting was started with Gayatri Mantra. The points discussed are as follows.

1. A Choice Based Credit System (CBCS) Evaluation Scheme and Course of Study for Electrical Engineering (III & IV Year) was put in front of BOS Experts and all faculty.
2. The online meeting link was <https://meet.google.com/qmr-tuzh-ism>

Experts and Faculty members present during the BOS are as follows:

1. Prof. S.P Shrivastava, IIT Roorkee (Subject Expert)
2. Prof. V.M Mishra GBPIT, Pauri (Subject Expert)
3. Mr. Devendra Sharma C&S electrical Ltd. SIDCUL, Haridwar (Industry Expert)
4. Mr. Gajendra Singh Rawat, EE, FET, GK(DU), Haridwar (In-Charge)
5. Mr. Brijesh Kumar, EE, FET, GK(DU), Haridwar (Co-ordinator, BOS)
6. Mr. Yogesh Kumar, EE, FET, GK(DU), Haridwar
7. Mr. Ashish Dhamanda, EE, FET, GK(DU), Haridwar
8. Mr. Ankush Sharma, EE, FET, GK(DU), Haridwar
9. Mr. Bipin Kumar Nishad, EE, FET, GK(DU), Haridwar
10. Mr. Gaurav Kumar, EE, FET, GK(DU), Haridwar

Point discussed during the BOS is as follows:

1. There should be single code for all the subjects.
2. Number of elective subject can be increased.
3. It is not required to mention internal and external marks again in each subject syllabus since once it is mentioned in structure.

S.P. Shrivastava

V.M. Mishra

A. Ma

Brijesh Kumar

Yogesh Kumar

Ashish Dhamanda

Ankush Sharma

Bipin Kumar Nishad

4. It is suggested that textbooks and reference books should be approximately equal.
5. Few books are to be added in Elective Drives subject like "P.C Sen," etc.
6. It is suggested by the expert that two subjects "Data Structure" and "Cyber Security" could be included in elective subjects.
7. Codes for theory and practical subjects should not be similar.

The meeting was ended with vote of Thanks & Shanti Path.

S. P. Swastika.

Manoj

Ama

Y. P. Ch.

Shame

Ch

Pr

BK

Sumar

**CHOICE BASED CREDIT SYSTEM
EVALUATION SCHEME
AND
COURSE OF STUDY
IN
B.TECH.
ELECTRICAL ENGINEERING
(THIRD YEAR)
SCHEME OF EXAMINATION & SYLLABUS**



**FACULTY OF ENGINEERING AND TECHNOLOGY
GURUKULA KANGRI (DEEMED TO BE UNIVERSITY), HARIDWAR
ACADEMIC SESSION 2021-22**

(Effective from the academic session 2021-22)

GURUKULA KANGRI (DEEMED TO BE UNIVERSITY), HARIDWAR**Faculty of Engineering & Technology****Electrical Engineering****B. Tech. Third Year****Syllabus in accordance with AICTE Model Curriculum****SEMESTER-V**

THEORY											
Sl. No.	Course Code	SUBJECT	PERIODS			EVALUATION SCHEME				SUBJECT TOTAL	CREDITS
			L	T	P	SESSIONAL EVALUATION			EXAM ESE		
						CT	TA	TOTAL			
1	BEE-C 511	Power Systems - I	3	0	0	20	10	30	70	100	3
2	BEE-C 512	Control Systems	3	0	0	20	10	30	70	100	3
3	BEE-C 513	Electrical Drives and Their Control	3	0	0	20	10	30	70	100	3
4	BEE-M 001	Universal Human Values	3	0	0	20	10	30	70	100	3
5	BXX-P XXX	Program Elective - I	3	0	0	20	10	30	70	100	3
6	BEE-O XXX	Open Elective - I	3	0	0	20	10	30	70	100	3
PRACTICAL											
7	BEE-C 561	Power Systems Laboratory - I	0	0	2	10	5	15	35	50	1
8	BEE-C 562	Control Systems Laboratory	0	0	2	10	5	15	35	50	1
9	BEE-C 563	Electrical Drives Laboratory	0	0	2	10	5	15	35	50	1
10	BEE-S 569	Summer Training and Internship Program-I /Mini Project (3-4 Weeks)	To be pursued during summer vacation, submit a certificate of completion in the department (in summer break after IV semester exam and will be assessed during V semester)						50	1	
TOTAL			18	0	6	150	75	225	525	800	22

Program Elective-I

1. BEE-P 514 Line Commutated and Active Rectifiers
2. BCE-P 515 Object Oriented Programming using C++

Open Elective -I

1. BCE-O 534 Introduction to AI
2. BEE-O 517 Industrial Electrical Systems.

S. P. Swastika

Munish

Ama

(Effective from the academic session 2021-22)

GURUKULA KANGRI (DEEMED TO BE UNIVERSITY), HARIDWAR**Faculty of Engineering & Technology****Electrical Engineering****B. Tech. Third Year****Syllabus in accordance with AICTE Model Curriculum****SEMESTER-VI****THEORY**

Sl. No.	Course Code	SUBJECTS	PERIODS			EVALUATION SCHEME			SUBJECT TOTAL	CREDITS	
						SESSIONAL EVALUATION					EXAM ESE
			L	T	P	CT	TA	TOTAL			
1	BEE-C 611	Power Systems II	3	0	0	20	10	30	70	100	3
2	BEE-C 612	Computer Aided Design of Electrical Machine	3	0	0	20	10	30	70	100	3
3	BET-C 613	Microprocessors and Interfacing	3	0	0	20	10	30	70	100	3
4	BEE-P 6XX	Program Elective-II	3	0	0	20	10	30	70	100	3
5	BEE-O 6XX	Open Elective II	3	0	0	20	10	30	70	100	3
PRACTICAL											
6	BEE-C 661	Power Systems Laboratory - II	0	0	2	10	5	15	35	50	1
7	BET-C 662	Microprocessors Laboratory	0	0	2	10	5	15	35	50	1
8	BEE-C 663	Computer Aided Design of Electrical Machine Laboratory	0	0	2	10	5	15	35	50	1
TOTAL			15	0	6	130	65	195	455	650	18

Note:- The students have to undergo an industrial training/mini project/internship program II during summer vacation (June –July) after VI semester examination. The report and certificate of completion of training program has to be submitted in the department which will be evaluated in VII semester. Also the students have to present PPT of the industrial training/mini project/internship for presentation in the department.



Program Elective-II

1. BEE-P 614 Special Electrical Machines
2. BEE-P 615 Advanced Electric Drives.

Open Elective-II

1. BET-O 616 Fundamentals of IOT and its Applications
2. BET-O 612 Digital Signal Processing

**CHOICE BASED CREDIT SYSTEM
EVALUATION SCHEME
AND
COURSE OF STUDY
IN
B. TECH
ELECTRICAL ENGINEERING
(FOURTH YEAR)
SCHEME OF EXAMINATION & SYLLABUS**



**FACULTY OF ENGINEERING AND TECHNOLOGY
GURUKULA KANGRI (DEEMED TO BE UNIVERSITY), HARIDWAR
ACADEMIC SESSION 2022-23**

(Effective from the academic session 2022-23)

GURUKULA KANGRI (DEEMED TO BE UNIVERSITY), HARIDWAR**Faculty of Engineering & Technology****Electrical Engineering****B. Tech. Fourth Year****Syllabus in accordance with AICTE Model Curriculum****SEMESTER-VII**

Sl. No.	Course Code	SUBJECTS	PERIODS			EVALUATION SCHEME				SUBJECT TOTAL	CREDITS
			L	T	P	SESSIONAL EVALUATION		EXAM ESE			
						CT	TA		TOTAL		
1	BEE-C 711	Switchgear And Protection	3	0	0	20	10	30	70	100	3
2	BEE-P 7XX	Program Elective-III	3	0	0	20	10	30	70	100	3
3	BEE-P 7XX	Program Elective-IV	3	0	0	20	10	30	70	100	3
4	BEE-O 7XX	Open Elective-III	3	0	0	20	10	30	70	100	3
5	BEE-O 7XX	Open Elective-IV	3	0	0	20	10	30	70	100	3
6	BEE-P 770	Project Stage-I	0		6	20	10	30	70	100	3
PRACTICAL											
7	BEE-C 761	Switchgear And Protection Laboratory	0	0	2	10	5	15	35	50	1
8	BEE-S 769	Summer Training and Internship Program-II /Mini Project (3-4 Weeks)	To be pursued during summer vacation, submit a certificate of completion in the department (in summer break after VI semester exam and will be assessed during VII semester)						50	1	
TOTAL			15	0	8	130	65	195	455	700	20
Program Elective-III											
<ol style="list-style-type: none"> 1. BEE-P 712 High Voltage Engineering 2. BEE-P 713 Electrical Standards and Engineering Practices. 3. BEE-P 714 Utilization of Electrical Energy & Traction 											
Program Elective-IV											
<ol style="list-style-type: none"> 1. BEE-P 715 Digital Control Systems 2. BEE-P 716 Power System Restructuring & Deregulation 3. BEE-P 717 Switch Mode Power Supply 											
Open Elective-III											
<ol style="list-style-type: none"> 1. BEE-O 718 Sensors and Transducers 2. BEE-O 719 Introduction to PLC and SCADA Systems 											

S. B. Swastika

Munish

Ama

Open Elective-IV

1. BEE-O 720 Robotics Engineering
2. BEE-O 721 Reliability Engineering
3. BEE-O 722 Testing and Commissioning of Electrical Equipment

Session 2019-2023 and Onwards

S. P. Suresh

Manoj

Ama

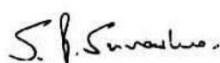
(Effective from the academic session 2022-23)

GURUKULA KANGRI (DEEMED TO BE UNIVERSITY), HARIDWAR**Faculty of Engineering & Technology****Electrical Engineering****B. Tech. Fourth Year****Syllabus in accordance with AICTE Model Curriculum****SEMESTER-VIII**

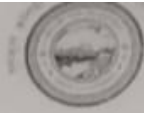
Sl. No.	Course Code	SUBJECTS	PERIODS			EVALUATION SCHEME				SUBJECT TOTAL	CREDITS
			L	T	P	SESSIONAL EVALUATION			EXAM		
						CT	TA	TOTAL			
1		MOOC-I	3	0	0	20	10	30	70	100	3
2		MOOC-II	3	0	0	20	10	30	70	100	3
3		MOOC-III	3	0	0	20	10	30	70	100	3
4		MOOC-IV	3	0	0	20	10	30	70	100	3
5	BEE-P 861	Project Stage-II	0	0	16	0	100	100	300	400	8
		TOTAL CREDITS	12	0	16	80	140	220	580	800	20

List of MOOC courses shall be decided by the departmental committee in each semester depending upon the list from SWAYAM/NPTEL and other recognized online platforms. Students have to study from Online Platform doubt sessions shall be held by Internal teachers and exams shall be taken by university. If a student wishes he can give exam of Online Platform for certification. SWAYAM courses to run every year from July onwards (Odd Semester) are declared in the month of May and for courses to run every year from January onwards (Even Semester) are declared in the month of December on website <https://swayam.gov.in/>.

Notice:- The SWAYAM course coordinator will ensure that the students are informed about MOOCs courses well before time so that students get registered in the courses decided by the department committee.







दिनांक @ Date: 26/04/2021
Ref No. FET/ME/20-21/

2021/9/10 14:46

Gurukula Kangri (Deemed to be University) Haridwar Faculty of Engineering & Technology Mechanical Engineering

Minutes of Meeting

The Board of Studies (BoS) meeting was arranged on 26/4/2021 at 1:00 P.M in an online mode. The meeting was started with Mantroccharan. The points discussed are as follows.

1. A Choice Based Credit System (CBCS) Evaluation Scheme and Course of Study for Mechanical Engineering (III & IV Year) was put in front of BOS Experts and all faculty
2. The online meeting link was <https://meet.google.com/tfp-wpzf-ogn>.
3. The members present during the meeting are as follows:

S. No.	Name	Designation
1.	Prof. Pradeep Kumar	Professor, I.I.T. Roorkee
2.	Prof Anadi Misra	Professor, GBPUA&T, Pantnagar
3.	Mr. Ashish Gupta	BHEL, Ranipur Haridwar
4.	Mr. Sanjeev Kumar Lambha	In charge, Mechanical Engineering
5.	Mr. Rishi Kumar Prajapati	BOS Coordinator
6.	Mr. Praveen Kumar Pandey	Faculty Member
7.	Dr. Jasbir Singh	Faculty Member
8.	Mr. Kapil Dev Sharma	Faculty Member
9.	Mr. Sunil Kumar	Faculty Member
10.	Dr. Shobhit Srivastava	Faculty Member
11.	Mr. Yogesh Kumar	Faculty Member
12.	Mr. Mayank Pokhriyal	Faculty Member

(Signatures of Prof. Pradeep Kumar, Prof. Anadi Misra, Mr. Ashish Gupta, Mr. Sanjeev Kumar Lambha, Mr. Rishi Kumar Prajapati, Mr. Praveen Kumar Pandey, Dr. Jasbir Singh, Mr. Kapil Dev Sharma, Mr. Sunil Kumar, Dr. Shobhit Srivastava, Mr. Yogesh Kumar, Mr. Mayank Pokhriyal)



दिनांक @ Date: 26 / 04 / 2021
Ref No. FET/ME/20-21/

4. After thorough discussion, Experts suggested following updates in Course Names:

S.No.	Proposed Course Name	Newly Suggested Course Name
1.	Universal Human values	Ethics & Human Values
2.	Engineering Economics	Engineering Economy
3.	Metrology and Quality Assurance	Measurement & Metrology
4.	Product Development and Design	Product Design & Development
5.	Quantity production Methods	Production planning & Control
6.	Inspection and product Control	Quality Management
7.	Optimization Techniques in Engineering	Operations Research
8.	Maintenance Engineering & Management	Maintenance Management
9.	Unconventional Manufacturing Process	Advance Machining Processes
10.	Finite element methods in Engineering	Finite Element Methods

- It was also recommended to include subject "Machine Learning" in place of "Disaster Management" and "Machine Tool Design" in place of "Material Removal Process".
- It was proposed to update the course content of "Strength of Materials" with "Solid Mechanics"; "IC Engines" with "Automobile Engineering"; and "Automatic Control System" with "Control theory and Applications" and remove all the overlapping if any.
- It was also recommended to include one module on Additive manufacturing in the subject of "Advanced Machining Processes" (Newly suggested course name).
- It was proposed to include new subject "Flexible Manufacturing System (FMS) in program electives for seventh semester.
- BOS Experts appreciated the inclusion of MOOCs courses in Course curriculum of Mechanical Engineering (VIII Semester).
- It was also proposed to adopt only those MOOCs courses that are of minimum 40 lectures or 3 credits MOOCs course.

The meeting was ended with vote of Thanks & Shanti Path.

[Handwritten signatures of experts and faculty members]

दिनांक / Date : 26 / 04 / 2021

Ref No. FET/ME/20-21

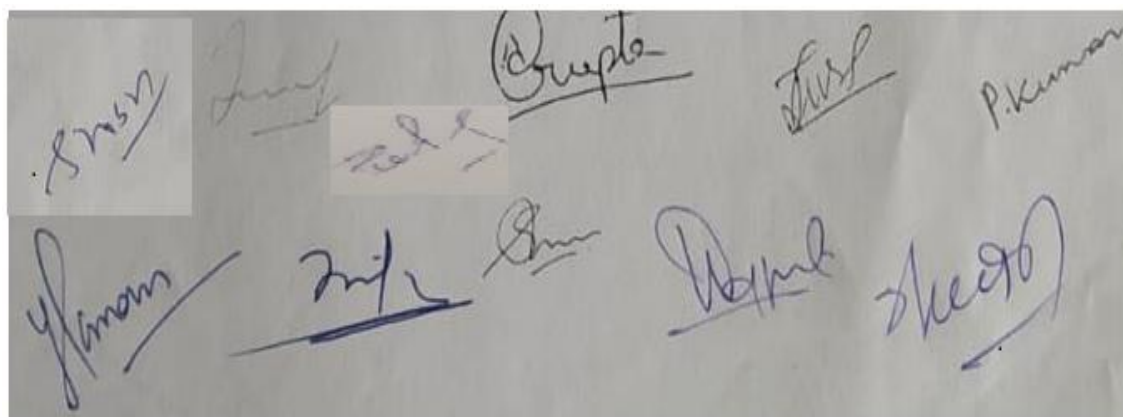
Fifth Semester:

11. The courses namely Universal Human Values (BME-M001) and Solid Mechanics (BME-C513) were introduced in fifth semester.
12. The title of name "Heat and mass transfer" renamed as "Heat Transfer" and approximate 25 % course content was updated and subject introduced in 5th semester.
13. The title of "Heat and mass transfer lab" renamed as name "Heat Transfer lab".
14. The following subjects/labs have removed in fifth semester.

S No.	Subject Code	Subject Name	Lab code	Subject lab
1	BME-C501	Fluid Machines	BME-C551	Fluid Machines lab
2	BME-C503	Manufacturing Science -II	BME-C552	Manufacturing Science – II lab

15. The following subjects /lab name and code changed in fifth semester.

S No	Subjects Name	Old Code	New code
1.	Measurement and Metrology	BME-C502	BME-C512
2.	Measurement and Metrology lab	BME-C552	BMC-562
3.	Automatic control System	BEE-C503	BME-O533
4.	Heat Transfer	BME-C602	BME-C511
5.	Heat Transfer Lab	BME-C652	BME-C561





दिनांक / Date : 26 / 04 / 2021
Ref No. FET/ME/20-21

16. The following new program elective-I and open elective-I subjects were introduced in fifth semester. Students can choose any one of them.

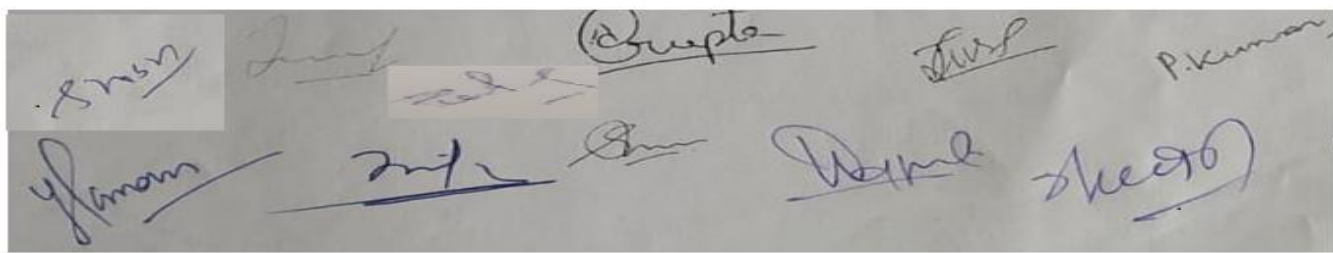
List of Program Elective -I (Fifth semester)

S No.	Subjects Code	Subjects Name
1.	BME-P521	Manufacturing System Design
2.	BME-P522	Soft Computing Techniques
3.	BME-P523	Advanced Engineering Thermodynamics
4.	BME-P524	Machine Tool Design
5.	BME-P525	Applied Elasticity and Plasticity

List of Open Elective -I (Fifth semester)

S No.	Subjects Code	Subjects Name
1.	BME-O531	Engineering Economy
2.	BME-O532	Cloud Computing
3.	BME-O533	Automatic Control system
4.	BME-O534	Composite Materials
5.	BME-O535	Machine Learning

17. Seminar was replaced with Project-I (summer training). Mandatory summer training/internship program project-I of 3-4 Weeks durations (BME-C570) was introduced in fifth semester. The industrial training/internship/online skill enhancement program, which students can pursue during summer vacation and require to submit a certificate of completion in the department.



दिनांक / Date : 26 / 04 / 2021

Ref No. FET/ME/20-21

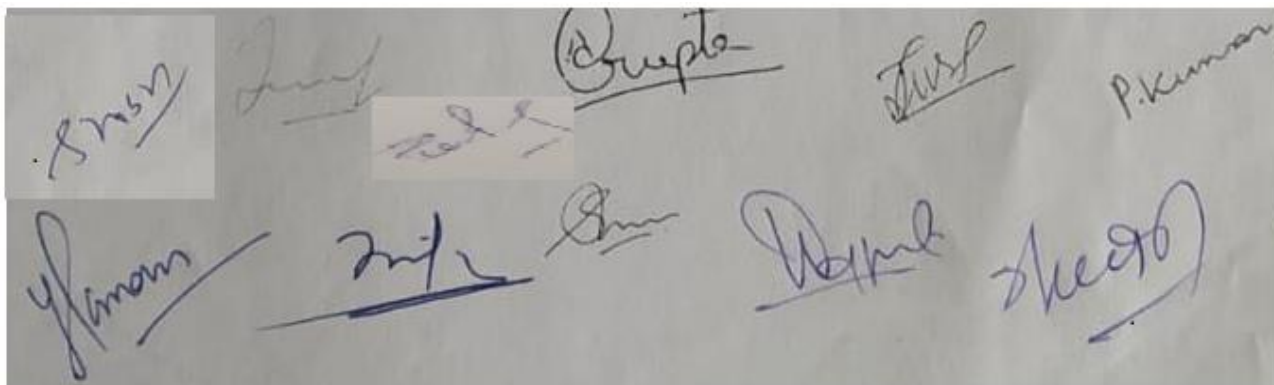
Sixth Semester:

18. The courses namely Design of Machine elements(BME-C611) and Quality Management (BME-O635) were introduced in sixth semester.
19. Mechanical engineering Design lab (BME-C661) was introduced in sixth semester.
20. The title of course "Mechanical Vibration" renamed as "Vibration and noise control".
21. The following subject has to remove in sixth semester.

S No.	Subjects Code	Subjects Name
1.	BME-C601	Machine Design-I
2.	BME-C605	Quality Control and reliability Engineering.
3.	BME-C602	Heat and mass transfer

22. The following subjects /lab name and code changed in sixth semester.

S No.	Subjects/Labs Name	Old code	New code
1.	Internal Combustion engines	BME-C603	BME-C612
2.	Internal Combustion engines lab	BME-C653	BME-C662
3.	Industrial Engineering	BME-C604	BME-O632
4.	Concurrent Engineering	BME-E823	BME-O634
5.	Vibration & Noise Control	BME-C606	BME-P622



दिनांक / Date : 26 / 04 / 2021

Ref No. FET/ME/20-21

23. The following new program elective -II and III and open elective-II subject introduce in sixth semester. Students can choose any one of them.

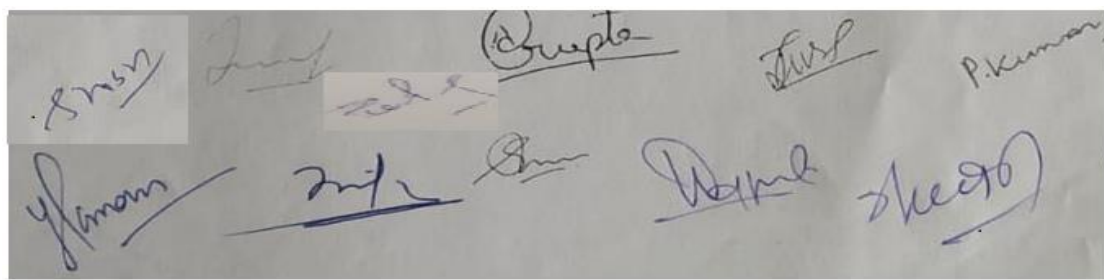
List of Program Elective -II & III (Sixth semester)

S No	Subjects Code	Subjects Name
1.	BME-P621	Smart Materials & Structures
2.	BME-P622	Vibration & Noise Control
3.	BME-P623	Mechatronics
4.	BME-P624	Control Theory & Applications
5.	BME-P625	Product Design & Development
6.	BME-P626	Computational Fluid Dynamics
7.	BME-P627	Environmental Pollution and Abatement
8.	BME-P628	Integrated Design and Manufacturing
9.	BME-P629	Production Planning & Control

List of Open Elective -II (Sixth semester) subjects

S No.	Subjects Code	Subjects Name
1.	BME-O631	Numerical Analysis
2.	BME-O632	Industrial Engineering
3.	BME-O633	Operation Research
4.	BME-O634	Concurrent Engineering
5.	BME-O635	Quality Management

24. Project-II (BME-C670) was introduced for sixth semester students.



दिनांक / Date : 26 / 04 / 2021

Ref No. FET/ME/20-21

Seventh Semester:

25. The following subjects/labs were removed from seventh semester.

S No.	Subject Code	Subject Name	Lab code	Subject lab
1.	BME-C701	Machine Design-II	BME-C751	Machine Design-II lab

26. The following subjects /lab name and code changed in seventh semester.

S No.	Subjects Name	Old code	New code
1.	Refrigeration and air conditioning	BME-C702	BME-C711
2.	Refrigeration and air conditioning lab	BME-C752	BME-C761
3.	Energy Resource and Management	BME-C703	BME-O733
4.	Advance Machining Processes	BME-E714	BME-P722
5.	Computer Aided Design	BME-E716	BME-C721





दिनांक / Date : 26 / 04 / 2021

Ref No. FET/ME/20-21

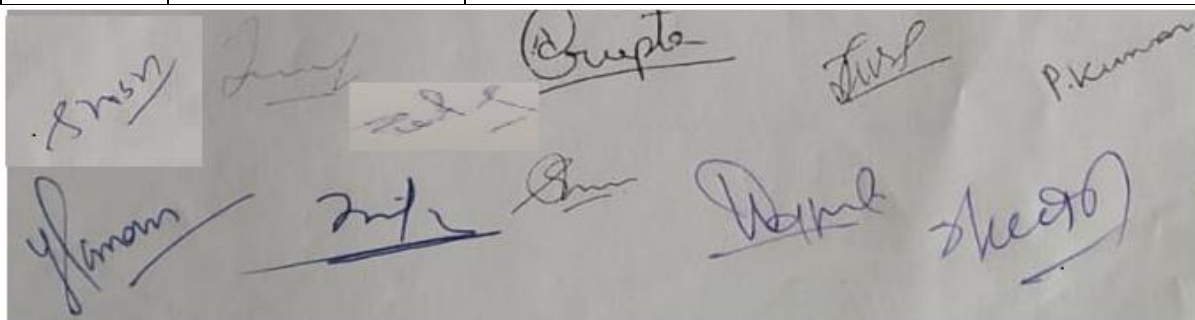
27. The following new program Elective -IV and V elective and open elective-III subject introduce in seventh semester. Students can choose any one of them.

List of Program Elective -IV & V (Seventh semester)

S No	Subjects Code	Subjects Name
1.	BME-P721	Computer Aided Design
2.	BME-P722	Advanced Machining Processes
3.	BME-P723	Advanced Welding Process
4.	BME-P724	Non-Traditional & Computer Aided Manufacturing
5.	BME-P725	Power Plant Engineering
6.	BME-P726	Simulation of Mechanical Systems
7.	BME-P727	Additive Manufacturing
8.	BME-P728	Finite Element Method
9.	BME-P729	Automobile Engineering
10.	BME-P730	Flexible Manufacturing System

List of Open Elective -III (Seventh semester)

S No	Subjects Code	Subjects Name
1.	BME-O731	Nanotechnology and Nano computing
2.	BME-O732	Artificial Intelligence and Robotics
3.	BME-O733	Engineering Resource and Management
4.	BME-O734	Engineering System Design Optimization
5.	BME-O735	Rural Technology & Community Development





दिनांक / Date : 26 / 04 / 2021

Ref No. FET/ME/20-21

28. Drafted Vision, Mission, PEOs, PSOs and POs for session 2020-2021 was presented in BoS meeting to discuss the vision, mission statement, PEOs and PO with the BoS members for finalization.

Experts gave the following suggestions in the meeting:

Prof. Pradeep Kumar (IIT Roorkee) shared his views on drafted Vision, Mission, PEOs, PSOs and POs of the department. He told to rewrite the mission statement (M3). He also suggested to include “*sustainable development*” in PEO4.

Prof. Anadi Mishra (GBPAUT, Pantnagar) discussed each mission elements and its relevance in current scenario. He appreciated the efforts done by all stakeholders. Furthermore, he suggested to include the mission components in each mission statement. He also suggested to start the PEOs statements with “The students” in place of “UG students”.

Mr. Ashish Gupta (BHEL, Ranipur) was invited as an industrial expert to share his views on drafted Vision, Mission, PEOs, PSOs and POs. He suggested to rewrite the Mission component M4 as “*Industry Oriented*” in place of “*Hands on Experiential learning & Industrial Visits*”. He also suggested to include some key components in the PEOs and PSOs.

All the Experts appreciated the efforts of all stakeholder in drafting of Vision, Mission, PEOs, and PSOs of the department.

The meeting was ended with Shanti path.

**CHOICE BASED CREDIT SYSTEM
EVALUATION SCHEME
AND
COURSE OF STUDY
(According to AICTE Model Curriculum)**



**B. TECH.
IN
MECHANICAL ENGINEERING**

BATCH: 2019 - 2023

**FACULTY OF ENGINEERING AND TECHNOLOGY
GURUKULA KANGRI (DEEMED TO UNIVERISTY),
HARIDWAR**

Revised Syllabus (Effective from the session 2019-20)
Gurukula Kangri Vishwavidyalaya, Haridwar
Faculty of Engineering & Technology
Mechanical Engineering
B. Tech. I Year

(Semester – I)

S.NO.	COURSE CODE	COURSE OPTED	SUBJECT	Period per week			EVALUATION SCHEME				Credit	Subject TOTAL
				L	T	P	SESSIONAL EXAM.		EXAM. ESE			
							CT	TA		TOTAL		
THEORY SUBJECTS												
1	BAC-C102	BSC-1	Engineering Chemistry	3	1	0	20	10	30	70	4	100
2	BEM-C102	BSC-2	Engineering Mathematics-I	3	1	0	20	10	30	70	4	100
3	BME-C103	ESC-1	Basic Mechanical Engineering	3	0	0	20	10	30	70	3	100
4	BCE-C102	ESC-2	Programming for Problem Solving	3	1	0	20	10	30	70	4	100
5	BEN-A103	HSMC-1	Environment Studies	2	0	0	20	10	30	70	0	100
6		Induction Programme			Three weeks duration							
PRACTICAL / TRAINING / PROJECT												
7	BAC-C151	BSC-1 Lab	Engineering Chemistry Lab	0	0	2	10	5	15	35	1	50
8	BME-C153	ESC-1 Lab	Engineering Graphics and Design Lab	1	0	2	10	5	15	35	2	50
9	BCE-C151	ESC-2 Lab	Programming for Problem Solving Lab	0	0	2	10	5	15	35	1	50
10	BEG-A151	HSMC Lab	Technical Communication Lab	0	0	2	10	5	15	35	1	50
TOTAL				15	3	8	140	70	210	490	20	700

L-Lecture; T-Tutorial; P-Practical; CT-Cumulative Test; TA- Teacher Assessment; ESE-End Semester Examination; BSC-Basic Science Course; ESC- Engineering Science Courses; PEC-Program Elective Course; SEC- Skill Enhancement Course; AECC- Ability Enhancement Compulsory Course; HSMC-Humanities, Social Science & Management Course

Grading & Grade Points: O(Outstanding)= 10; A+(Excellent)= 9; A(Very Good)= 8; B+(Good)= 7; B(Above Average)= 6; C(Average)= 5; P(Pass)= 4; F(Fail)= 0; Ab(Absent)= 0

BME C101 → Semester
 → 0, 5 & 6 stands for theory, Practical & Seminar /Project respectively
 → Paper Code

Revised Syllabus (Effective from the session 2019-2020)
Gurukula Kangri Vishwavidyalaya, Haridwar
Faculty of Engineering & Technology
Mechanical Engineering
B. Tech. I Year

(Semester – II)

S.NO.	COURSE CODE	COURSE OPTED	SUBJECT	Period per week			EVALUATION SCHEME				Credit	Subject TOTAL
				L	T	P	SESSIONAL EXAM.			EXAM. ESE		
							CT	TA	TOTAL			
THEORY SUBJECTS												
1	BAP-C202	BSC-3	Engineering Physics	3	1	0	20	10	30	70	4	100
2	BEM-C202	BSC-4	Engineering Mathematics-II	3	1	0	20	10	30	70	4	100
3	BEE-C202	ESC-3	Basic Electrical Engineering	3	1	0	20	10	30	70	4	100
4	BET-C202	ESC-4	Electronics Devices	3	1	0	20	10	30	70	4	100
5	BHU-S202	SEC-1	Vedic Science and Engineering	2	0	0	20	10	30	70	0	100
PRACTICAL / TRAINING / PROJECT												
6	BAP-C251	BSC-3 Lab	Engineering Physics Lab	0	0	2	10	5	15	35	1	50
7	BEE-C251	ESC-3 Lab	Basic Electrical Engineering Lab	0	0	2	10	5	15	35	1	50
8	BET-C251	ESC-4 Lab	Electronic Devices lab	0	0	2	10	5	15	35	1	50
9	BME-C252	ESC-5 Lab	Workshop Practice	0	0	2	10	5	15	35	1	50
10	BSP-S251	SEC-2 Lab	Physical Training and Yoga	0	0	2	10	5	15	35	0	50
TOTAL				14	4	10	150	75	225	525	20	750

L-Lecture; **T**-Tutorial; **P**-Practical; **CT**-Cumulative Test; **TA**- Teacher Assessment; **ESE**-End Semester Examination; **BSC**-Basic Science Course; **ESC**- Engineering Science Courses; **PEC**-Program Elective Course; **SEC**- Skill Enhancement Course; **AEEC**- Ability Enhancement Compulsory Course; **HSMC**-Humanities, Social Science & Management Course

Grading & Grade Points: O(Outstanding)= 10; **A⁺**(Excellent)= 9; **A**(Very Good)= 8; **B⁺**(Good)= 7; **B**(Above Average)= 6; **C**(Average)= 5; **P**(Pass)= 4; **F**(Fail)= 0; **Ab**(Absent)= 0

Revised Syllabus (Effective from the session 2020-21)
Gurukula Kangri Vishwavidyalaya, Haridwar
Faculty of Engineering & Technology
Mechanical Engineering

B. Tech. II Year

(Semester – III)

S.N O.	COURSE CODE	COURSE OPTED	SUBJECT	Period per week			EVALUATION SCHEME				Credit	Subject TOTAL
				L	T	P	SESSIONAL EXAM.			EXAM. ESE		
							CT	TA	TOTAL			
THEORY SUBJECTS												
1	BEM-C302	BSC-5	Engineering Mathematics-III	3	1	0	20	10	30	70	4	100
2	BME-C306	ESC-6	Materials Engineering	3	0	0	20	10	30	70	3	100
3	BME-C307	ESC-7	Applied Thermodynamics	3	1	0	20	10	30	70	4	100
4	BME-C308	ESC-8	Engineering Mechanics	3	0	0	20	10	30	70	3	100
5	BEE-C306	ESC-9	Electrical Machines	3	1	0	20	10	30	70	4	100
PRACTICAL / TRAINING / PROJECT												
6	BME-C356	ESC-6 Lab	Materials Engineering Lab	0	0	2	10	5	15	35	1	50
7	BME-C357	ESC-7 Lab	Applied Thermodynamics Lab	0	0	2	10	5	15	35	1	50
8	BME-C358	ESC-8 Lab	Engineering Mechanics Lab	0	0	2	10	5	15	35	1	50
9	BEE-C356	ESC-9 Lab	Electrical Machines Lab	0	0	2	10	5	15	35	1	50
TOTAL				18	4	8	160	80	240	560	22	700

L-Lecture; **T**-Tutorial; **P**-Practical; **CT**-Cumulative Test; **TA**- Teacher Assessment; **ESE**-End Semester Examination;
BSC-Basic Science Course; **ESC**- Engineering Science Courses; **PEC**-Program Elective Course; **SEC**- Skill
Enhancement Course; **AECC**- Ability Enhancement Compulsory Course; **HSMC**-Humanities, Social Science & Management Course

Grading & Grade Points: O(Outstanding)= **10**; **A⁺**(Excellent)= **9**; **A**(Very Good)= **8**; **B⁺**(Good)= **7**; **B**(Above
Average)= **6**; **C**(Average)= **5**; **P**(Pass)= **4**; **F**(Fail)= **0**; **Ab**(Absent)= **0**

Revised Syllabus (Effective from the session 2020-21)
Gurukula Kangri Vishwavidyalaya, Haridwar
Faculty of Engineering & Technology
Mechanical Engineering

B. Tech. II Year

(Semester – IV)

S.N O.	COURSE CODE	COURSE OPTED	SUBJECT	Period per week			EVALUATION SCHEME				Credit	Subject TOTAL
				L	T	P	SESSIONAL EXAM.			EXAM. ESE		
							CT	TA	TOTAL			
THEORY SUBJECTS												
1	BME-C406	ESC-10	Fluid Mechanics and Fluid Machines	3	1	0	20	10	30	70	4	100
2	BME-C407	ESC-11	Manufacturing Science and Process	3	0	0	20	10	30	70	3	100
3	BME-C408	ESC-12	Kinematics & Dynamics of Machines	3	1	0	20	10	30	70	4	100
4	BME-C409	ESC-13	Strength of Materials	3	1	0	20	10	30	70	4	100
5	BME-C410	ESC-14	Principle and Practices of Management	3	0	0	20	10	30	70	3	100
6	BKT-A403	HSMC-2	Indian Knowledge Tradition	2	0	0	20	10	30	70	0	100
PRACTICAL / TRAINING / PROJECT												
7	BME-C456	ESC-10 Lab	Fluid Mechanics and Fluid Machines Lab	0	0	2	10	5	15	35	1	50
8	BME-C457	ESC-11 Lab	Manufacturing Science and Process Lab	0	0	2	10	5	15	35	1	50
9	BME-C458	ESC-12 Lab	Theory of Machine lab	0	0	2	10	5	15	35	1	50
10	BME-C459	ESC-15 Lab	Machine Drawing Lab	0	0	2	10	5	15	35	1	50
TOTAL				17	5	8	140	80	240	560	22	800

L-Lecture; T-Tutorial; P-Practical; CT-Cumulative Test; TA- Teacher Assessment; ESE-End Semester Examination; BSC-Basic Science Course; ESC- Engineering Science Courses; PEC-Program Elective Course; SEC- Skill Enhancement Course; AECC- Ability Enhancement Compulsory Course; HSMC-Humanities, Social Science & Management Course

Grading & Grade Points: O(Outstanding)= 10; A+(Excellent)= 9; A(Very Good)= 8; B+(Good)= 7; B(Above Average)= 6; C(Average)= 5; P(Pass)= 4; F(Fail)= 0; Ab(Absent)= 0

Revised Syllabus (Effective from the session 2021-2022)
Gurukula Kangri (Deemed to be University), Haridwar
Faculty of Engineering & Technology
Mechanical Engineering

B. Tech. III Year

(Semester – V)

S.NO.	COURSE CODE	COURSE OPTED	Course Name	Period per week			EVALUATION SCHEME				Credit	Subject TOTAL
				L	T	P	SESSIONAL EXAM.			EXAM. ESE		
							CT	TA	TOTAL			
THEORY SUBJECTS												
1	BME-C511	PCC	Heat Transfer	3	1	0	20	10	30	70	4	100
2	BME-C512	PCC	Measurement & Metrology	3	0	0	20	10	30	70	3	100
3	BME-C513	PCC	Solid Mechanics	3	1	0	20	10	30	70	4	100
4	BME-P5XX	PEC	Program Elective-I	3	0	0	20	10	30	70	3	100
5	BME-O5XX	OEC	Open Elective-I	3	0	0	20	10	30	70	3	100
6	BME-M001	HSMC	Universal Human Values	3	0	0	20	10	30	70	0	100
PRACTICAL / TRAINING / PROJECT												
7	BME-C561	PCC Lab	Heat Transfer Lab	0	0	2	10	05	15	35	1	50
8	BME-C562	PCC Lab	Measurement & Metrology Lab	0	0	2	10	05	15	35	1	50
9	BME-C570	PCC Lab	Project-I (Summer Training)	0	0	2	10	05	15	35	1	50
TOTAL				18	4	6	150	75	225	525	20	750

- ❖ For the Summer Training and Internship program done in summer break after IV semester examination, A certificate of completion to be submitted along with the report and presentation in the department. In case a student is unable to do an internship in some company, he may do any one extra online skill enhancement course

L-Lecture; **T**-Tutorial; **P**-Practical; **CT**-Cumulative Test; **TA**- Teacher Assessment; **ESE**-End Semester Examination; **PCC**- Program Core Course; **PEC**-Program Elective Course; **OEC**-Open Elective Course; **SEC**- Skill Enhancement Course; **AEEC**- Ability Enhancement Compulsory Course; **HSMC**-Humanities, Social Science & Management Course

Grading & Grade Points: O(Outstanding)= **10**; **A⁺**(Excellent)= **9**; **A** (Very Good) = **8**; **B⁺**(Good) = **7**; **B** (Above Average) = **6**; **C**(Average)= **5**; **P**(Pass)= **4**; **F**(Fail)= **0**; **Ab**(Absent)= **0**

Semester

1, 6 & 7 stands for theory, Practical & Seminar /Project respectively

BME-C511 →

Paper Code

Program Elective -I (Fifth semester)

BME-P521	Manufacturing System Design
BME-P522	Soft Computing Techniques
BME-P523	Advanced Engineering Thermodynamics
BME-P524	Machine Tool Design
BME-P525	Applied Elasticity and Plasticity

Open Elective -I (Fifth semester)

BME-O531	Engineering Economy
BME-O532/BCE-C514	Cloud Computing
BME-O533	Automatic Control System
BME-O534	Composite Materials
BME-O535	Machine Learning

L-Lecture; **T**-Tutorial; **P**-Practical; **CT**-Cumulative Test; **TA**- Teacher Assessment; **ESE**-End Semester Examination; **PCC**- Program Core Course; **PEC**-Program Elective Course; **OEC**-Open Elective Course; **SEC**- Skill Enhancement Course; **AECC**- Ability Enhancement Compulsory Course; **HSMC**-Humanities, Social Science & Management Course

Grading & Grade Points: O(Outstanding)= **10**; **A⁺**(Excellent)= **9**; **A** (Very Good) = **8**; **B⁺**(Good) = **7**; **B** (Above Average) = **6**; **C**(Average)= **5**; **P**(Pass)= **4**; **F**(Fail)= **0**; **Ab**(Absent)= **0**

 Semester
 1, 6 & 7 stands for theory, Practical & Seminar /Project respectively
BME-C511 → Paper Code

Revised Syllabus (Effective from the session 2021-2022)
Gurukula Kangri (Deemed to be University), Haridwar
Faculty of Engineering & Technology
Mechanical Engineering

B. Tech. III Year

(Semester – VI)

S.NO.	COURSE CODE	COURSE OPTED	COURSE NAME	Period per week			EVALUATION SCHEME				Credit	Subject TOTAL
				L	T	P	SESSIONAL EXAM.			EXAM. ESE		
							CT	TA	TOTAL			
THEORY SUBJECTS												
1	BME-C611	PCC	Design of Machine Elements	3	1	0	20	10	30	70	4	100
2	BME-C612	PCC	Internal Combustion Engines	3	1	0	20	10	30	70	4	100
3	BME-P62X	PEC	Program Elective-II	3	0	0	20	10	30	70	3	100
4	BME-P62X	PEC	Program Elective-III	3	0	0	20	10	30	70	3	100
5	BME-O63X	OEC	Open Elective-II	3	0	0	20	10	30	70	3	100
PRACTICAL / TRAINING / PROJECT												
6	BME-C661	PCC	Mechanical Engineering Design Lab	0	0	2	10	05	15	35	1	50
7	BME-C662	PCC	Internal Combustion Engines Lab	0	0	2	10	05	15	35	1	50
8	BME-C670	PCC	Project-II	0	0	2	10	05	15	35	1	50
TOTAL				15	4	6	130	65	95	455	20	650

L-Lecture; **T**-Tutorial; **P**-Practical; **CT**-Cumulative Test; **TA**- Teacher Assessment; **ESE**-End Semester Examination; **PCC**- Program Core Course; **PEC**-Program Elective Course; **OEC**-Open Elective Course; **SEC**- Skill Enhancement Course; **AECC**- Ability Enhancement Compulsory Course; **HSMC**-Humanities, Social Science & Management Course

Grading & Grade Points: O(Outstanding)= **10**; **A⁺**(Excellent)= **9**; **A** (Very Good) = **8**; **B⁺**(Good) = **7**; **B** (Above Average) = **6**; **C**(Average)= **5**; **P**(Pass)= **4**; **F**(Fail)= **0**; **Ab**(Absent)= **0**

Semester

1, 6 & 7 stands for theory, Practical & Seminar /Project respectively

BME-C511

Paper Code

Program Elective -II & III (Sixth semester)

BME-P621	Smart Materials & Structures
BME-P622	Vibration & Noise Control
BME-P623	Mechatronics
BME-P624	Control Theory & Applications
BME-P625	Product Design & Development
BME-P626	Computational Fluid Dynamics
BME-P627	Environmental Pollution and Abatement
BME-P628	Integrated Design and Manufacturing
BME-P629	Production Planning & Control

Open Elective -II (Sixth semester)

BME-O631	Numerical Analysis
BME-O632	Industrial Engineering
BME-O633	Operations Research
BME-O634	Concurrent Engineering
BME-O635	Quality Management

L-Lecture; **T**-Tutorial; **P**-Practical; **CT**-Cumulative Test; **TA**- Teacher Assessment; **ESE**-End Semester Examination; **PCC**- Program Core Course; **PEC**-Program Elective Course; **OEC**-Open Elective Course; **SEC**- Skill Enhancement Course; **AEEC**- Ability Enhancement Compulsory Course; **HSMC**-Humanities, Social Science & Management Course

Grading & Grade Points: O(Outstanding)= **10**; **A⁺**(Excellent)= **9**; **A** (Very Good) = **8**; **B⁺**(Good) = **7**; **B** (Above Average) = **6**; **C**(Average)= **5**; **P**(Pass)= **4**; **F**(Fail)= **0**; **Ab**(Absent)= **0**

Semester
1, 6 & 7 stands for theory, Practical & Seminar /Project respectively
BME-C511 → Paper Code

Revised Syllabus (Effective from the session 2022-2023)
Gurukula Kangri (Deemed to be University), Haridwar
Faculty of Engineering & Technology
Mechanical Engineering

B. Tech. IV Year

(Semester – VII)

S.NO.	COURSE CODE	COURSE OPTED	COURSE NAME	Period per week			EVALUATION SCHEME				Credit	Subject TOTAL
				L	T	P	SESSIONAL EXAM.			EXAM. ESE		
							CT	TA	TOTAL			
THEORY SUBJECTS												
1	BME-C711	PCC	Refrigeration & Air Conditioning	3	0	0	20	10	30	70	3	100
2	BME-C712	PCC	Maintenance Management	3	0	0	20	10	30	70	3	100
3	BME-P72X	PEC	Program Elective-IV	3	0	0	20	10	30	70	3	100
4	BME-P72X	PEC	Program Elective-V	3	0	0	20	10	30	70	3	100
5	BME-O73X	OEC	Open Elective-III	3	0	0	20	10	30	70	3	100
PRACTICAL / TRAINING / PROJECT												
6	BME-C761	PCC	Refrigeration & Air Conditioning Lab	0	0	2	10	05	15	35	1	50
8	BME-C770	PCC	Project-III	0	0	8	40	20	60	140	4	200
TOTAL				15	0	10	150	75	225	525	20	750

NOTE: Electives will be offered depending upon the availability of teaching staff and minimum thirty students should opt for a particular elective.

L-Lecture; **T**-Tutorial; **P**-Practical; **CT**-Cumulative Test; **TA**- Teacher Assessment; **ESE**-End Semester Examination; **PCC**- Program Core Course; **PEC**-Program Elective Course; **OEC**-Open Elective Course; **SEC**-Skill Enhancement Course; **AEEC**- Ability Enhancement Compulsory Course; **HSMC**-Humanities, Social Science & Management Course

Grading & Grade Points: **O** (Outstanding) = **10**; **A⁺** (Excellent)= **9**; **A** (Very Good) = **8**; **B⁺** (Good) = **7**; **B** (Above Average) = **6**; **C** (Average) = **5**; **P** (Pass) = **4**; **F** (Fail) = **0**; **Ab**(Absent)= **0**

Program Elective -IV & V (Seventh semester)

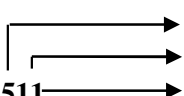
BME-P721	Computer Aided Design
BME-P722	Advanced Machining Processes
BME-P723	Advanced Welding Processes
BME-P724	Non-Traditional & Computer Aided Manufacturing
BME-P725	Power Plant Engineering
BME-P726	Simulation of Mechanical Systems
BME-P727	Additive Manufacturing
BME-P728	Finite Element Methods
BME-P729	Automobile Engineering
BME-P730	Flexible Manufacturing System

Open Elective -III (Seventh semester)

BME-O731	Nanotechnology and Nano computing
BME-O732	Artificial Intelligence and Robotics
BME-O733	Energy Resources and Management
BME-O734	Engineering System Design Optimization
BME-O735	Rural Technology & Community Development

L-Lecture; **T**-Tutorial; **P**-Practical; **CT**-Cumulative Test; **TA**- Teacher Assessment; **ESE**-End Semester Examination; **PCC**- Program Core Course; **PEC**-Program Elective Course; **OEC**-Open Elective Course; **SEC**-Skill Enhancement Course; **AECC**- Ability Enhancement Compulsory Course; **HSMC**-Humanities, Social Science & Management Course

Grading & Grade Points: O (Outstanding) = **10**; **A⁺** (Excellent)= **9**; **A** (Very Good) = **8**; **B⁺** (Good) = **7**; **B** (Above Average) = **6**; **C** (Average) = **5**; **P** (Pass) = **4**; **F** (Fail) = **0**; **Ab**(Absent)= **0**

BME-C511  Semester
1, 6 & 7 stands for theory, Practical & Seminar /Project respectively
Paper Code

Revised Syllabus (Effective from the session 2022-2023)
Gurukula Kangri (Deemed to be University), Haridwar
Faculty of Engineering & Technology
Mechanical Engineering

B. Tech. IV Year

(Semester – VIII)

S.NO.	COURSE CODE	COURSE OPTED	COURSE NAME	Period per week			EVALUATION SCHEME				Credit	Subject TOTAL
				L	T	P	SESSIONAL EXAM.			EXAM. ESE		
							CT	TA	TOTAL			
THEORY SUBJECTS												
1	BME-P82X	PEC	MOOC-I	3	0	0	20	10	30	70	3	100
2	BME-P82X	PEC	MOOC-II	3	0	0	20	10	30	70	3	100
3	BME-O83X	OEC	MOOC-III	3	0	0	20	10	30	70	3	100
4	BME-O83X	OEC	MOOC-IV	3	0	0	20	10	30	70	3	100
PRACTICAL / TRAINING / PROJECT												
5	BME-C870	PCC	Project-IV	0	0	16	80	40	120	280	08	400
TOTAL				12	0	16	160	80	240	560	20	800

List of MOOC courses shall be decided by the departmental committee in each semester depending upon the list from SWAYAM/NPTEL and other recognized online platforms. Students have to study from Online Platform doubt sessions shall be held by Internal teachers and exam shall be taken by university. If a student wishes he can give exam of Online Platform for certification.

L-Lecture; **T**-Tutorial; **P**-Practical; **CT**-Cumulative Test; **TA**- Teacher Assessment; **ESE**-End Semester Examination; **PCC**- Program Core Course; **PEC**-Program Elective Course; **OEC**-Open Elective Course; **SEC**-Skill Enhancement Course; **AEEC**- Ability Enhancement Compulsory Course; **HSMC**-Humanities, Social Science & Management Course

Grading & Grade Points: O (Outstanding) = **10**; **A⁺** (Excellent)= **9**; **A** (Very Good) = **8**; **B⁺** (Good) = **7**; **B** (Above Average) = **6**; **C** (Average) = **5**; **P** (Pass) = **4**; **F** (Fail) = **0**; **Ab**(Absent)= **0**

Effective from the session 2019-2020

Induction Program

Induction program (mandatory)	3 weeks duration
Induction program for students to be offered right at the start of the first year.	<ul style="list-style-type: none">• Physical activity• Creative Arts• Universal Human Values• Literary• Proficiency Modules• Lectures by Eminent People• Visits to local Areas• Familiarization to Dept./Branch & Innovations