SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE

Official Publication of Sant Gadge Baba Amravati University

PART- ONE

(Extra Ordinary)

Saturday, the 19th April, 2025

DIRECTION

No.33/2025 Date : 19/ 04/2025

Subject : **Examination leading to the Multi-disciplinary degree of B.E. /B.Text.E. / B.Tech. (Chem.Engg.) / B.Tech.(Chem.Tech.) (Food, Pulp & Paper, Oil & Paint & Petrochemical Technology) Major in … Minor in … (Four Year Degree Course Semester Pattern) and B.E. /B.Text.E. /B.Tech. (Chem. Engg.) / B.Tech.(Chem.Tech.) (Food, Pulp & Paper, Oil & Paint & Petrochemical Technology) (Honors) or Honors with Research as per National Education Policy- 2020 in the Faculty of Science & Technology, [Engineering & Technology Group] Direction, 2025**.

Whereas, Direction No. 42/2021 in respect of the Examinations leading to the degree of B.E./B.Text.E./B.Tech.(Chem.Engg.)/ B.Tech. (Chem.Tech.) (Polymer)(Plastic) Tech. (Common to all branches) (Four Year degree Course ... Semester Pattern .. as per Choice Based Credit System) courses in the Faculty of Science & Technology is in existence,

AND

Whereas, the Government of India has set up multi stakeholder task force for New Education Policy – 2020 Task Force (NEPTF) on 27/02/2015,

AND

Whereas, the Government of Maharashtra has issued resolution No. **अभ्यास-२०१५/प्र.क्र.६११/विशि-३, दिनांक ३१ ऑक्टोबर, 2015** for constitution of Task Force for designing the policy for implementation of NEP-2020,

AND

Whereas, the Government of Maharashtra has constituted a Task Force as per G.R. No. संकीर्ण-२०१५/प्र.क्र. १७६/विशि-३, दिनांक १६ ऑक्टोबर, 2020 by the Cabinet for preparation of road map for the implementation of NEP-2020,

AND

Whereas, the Report of the Task Force has been prepared on 30/06/2021 and approved by the Cabinet of Government of Maharashtra on 22/01/2022,

AND

Whereas, the Government of Maharashtra has issued the Resolution No.एनइपी-२०२२/प्र.क्र.१०५/विशि-३, दिनांक ६/१२/२०२२ and एनइपी-२०२२/८६७/२३/तांशि-२, दिनांक ०४/०७/२०२३ for credit framework,

AND

Whereas, the Government of Maharashtra has issued the Resolution No. एनइपी-२०२२/प्र.क्र.०९/विशि-३, शिकाना, दिनांक २६/१२/२०२२, दिनांक २०/०४/२०२३, दिनांक १६/०५/२०२३, दिनांक ०४/०७/२०२३, दिनांक १६/०६/२०२३, दिनांक २५/०१/२०२४, दिनांक १३/०३/२०२४ आणि ०२/०७/२०२४ for implementation of NEP for Under Graduate and Post Graduate Programmes,

AND

Whereas, the joint meetings of all the Pro-Vice Chancellors and the Deans were held with steering Committee at Pune on 23rd and 24th January, 2023,

AND

Whereas, as per the letter from the Government, a workshop of all the Principals and Nodal Officers were held with the Steering Committee on 21/02/2023 in the University,

AND

Whereas, as per the instructions of Government of Maharashtra, Pro-Vice Chancellor has constituted a 13 member Committee under his Chairmanship to formulate the Teaching, Learning, Examination and Evaluation Scheme and Draft Provisions for Direction/Ordinance as per the National Education Policy- 2020 on 28/02/2023,

AND

Whereas, the Committee has proposed the Draft Scheme of Teaching, Learning, Examination and Evaluation and Draft Provisions of Ordinance/Direction,

AND

Whereas, as per the instructions given by the Director, Higher Education, Pune Region, Pune a joint meeting of the Principals of 20 colleges & the Deans of the Faculties, and passed the resolution on 07/04/2023,

AND

Whereas, a Joint meeting of all the Principals, the Deans of the Faculties with the Joint Director, Higher Education, Amravati Region, Amravati on the resolutions which have been passed during 07/04/2023 regarding the workload and the same has been placed on 17/04/2023,

AND

Whereas, joint meeting of the Deans of the Faculties along with the members of Steering Committee were held on 15/06/2023 at Mumbai,

AND

Whereas, as per letter क्रमांक-युएनआय/(१३६/२२)/विशी-१/भाग-३- १७९९ दिनांक १८ मार्च, २०२४, a Committee is constituted for the Draft Scheme of Teaching, Learning, Examination & Evaluation and Draft provisions for Ordinance/ Direction,

AND

Whereas, Dept. of Higher & Technical Education, Govt. of Maharashtra, Mantralaya, Mumbai, has issued a G.R. vide No.NEP-2022/(67/23)T.E.-2 dtd. 4/07/2023 regarding implementation of National Education Policy-2020 in first phase to the AICTE regulated Under-graduate Engineering & Technology Programmes conducted in Autonomous Colleges and the State University Campuses in various Non-agricultural Universities in Maharashtra with effect from the Academic Year 2023-2024 & onwards and in Second Phase for the rest of all the affiliated colleges under the University from the Academic Year 2024-2025 & onwards,

AND

Whereas, the Hon'ble Vice-Chancellor has constituted the Committee of all the Chairpersons of the Board of Studies & Ad-hoc Committees and 1 Faculty member of each Board of Studies of Engineering &Technology under the Chairmanship of the then Dean, Faculty of Science & Technology for preparation of the draft structure of the Schemes of Teaching, Learning, Examination & Evaluation and other related draft provisions for Under-graduate programmes of Engineering & Technology as per NEP-2020 guidelines,

AND

Whereas, the Committee in its meetings held on 24.01.2024, 31.01.2024 & 13.02.2024 prepared the draft Structure of the Schemes of Teaching, Learning, Examination & evaluation and other related draft provisions for Under-graduate programmes of Engineering & Technology as per NEP-2020 guidelines of the G.R. of Govt. of Maharashtra dated 04.07.2023 and recommended the same to the Faculty of Science & Technology to be implemented from the academic session 2024-2025 and onwards,

AND

Whereas, the Faculty of Science & Technology of its emergent meeting held on 12.03.2025 accepted the recommendations of the Committee constituted by the Hon'ble Vice-Chancellor and further resolved to recommend the same to the Academic Council along with corrections to be implemented from the academic session 2024-2025 and onwards,

AND

Whereas, the Hon'ble Vice-Chancellor has accorded approval to the recommendations of the Faculty under Sub Section (7) of Section 12 of the Maharashtra Public Universities Act, 2016 on behalf of the Academic Council on 12/04/2024 regarding implementation of the draft structure of the Schemes of Teaching, Learning, Examination & evaluation and other related draft provisions for Engineering & Technology programmes as per NEP-2020 guidelines to be implemented from the academic session 2024-2025 & onwards,

AND

Whereas, the Faculty of Science & Technology of its meeting held on 22.04.2024 vide Item No.9 considered and accepted the recommendations of some members of the Board of Studies in Humanities & Applied Sciences & General Engineering regarding inclusion of the subject Engineering Chemistry in the Scheme of Teaching, Learning, Examination and Evaluation and in the curriculum of I year of Engineering & Technology programmes by making some modifications in the existing approved Scheme and further resolved to recommend the same to the Academic Council along with corrections to be implemented from the academic session 2024-2025 and onwards,

AND

Whereas, the Hon'ble Vice-Chancellor has accorded approval to the recommendations of the Faculty under Sub Section (7) of Section 12 of the Maharashtra Public Universities Act, 2016 on behalf of the Academic Council on 12/05/2024 regarding modifications in the existing approved Scheme of Teaching, Learning, Examination & evaluation as per NEP-2020 guidelines to be implemented from the academic session 2024-2025 & onwards,

AND

Whereas, the Board of Studies of Engineering & Technology Group in the Faculty of Science & Technology of their meetings held on 22.5.2024 to 7.6.2024 had prepared and submitted the draft syllabus of Semester I & II of their respective subjects and Verticals under the purview of the Board as per the approved Structure of the Scheme of Teaching, Learning, Examination and Evaluation and further resolved to recommend the same to the Faculty of Science & Technology to be implemented from the academic session 2024-2025 and onwards,

AND

Whereas, the Faculty of Science & Technology in its meeting held on 09.07.2024 vide Item Nos. 13 III) A) R-1 to I) R-1 has considered and accepted the recommendations of all the Board of Studies of Engineering & Technology group in the Faculty of Science & Technology regarding the draft Schemes of Teaching, Learning, Examination and Evaluation of Semester I & VIII and the draft syllabus of Semester I & II of Under-graduate Courses of Engineering & Technology programmes and further resolved to recommend the same to the Academic Council to be implemented from the academic session 2024-2025 and onwards,

AND

Whereas, the Hon'ble Vice-Chancellor has accorded approval to the recommendations of the Faculty of Science & Technology under Sub Section (7) of Section 12 of the Maharashtra Public Universities Act, 2016 on behalf of the Academic Council on 31/07/2024 to be implemented from the academic session 2024-2025 & onwards,

AND

Whereas, as per the directions of the Hon'ble Vice-Chancellor, the Committee of Chairpersons/Working Chairpersons of all the Board of Studies & Ad-hoc Committees of Engineering & Technology group under the Chairpersonship of the I/c Dean, Faculty of Science & Technology constituted by the Hon'ble Vice-Chancellor of its emergent meeting held on 05.12.2024 had unanimously resolved to recommend by giving solutions on some important issues and difficulties occurred regarding implementation of the Schemes and related provisions of Ordinance as per the G.R. of Govt. of Maharashtra dated 4.7.2023 as per NEP-2020 guidelines,

AND

Whereas, the Hon'ble Vice-Chancellor has accorded approval to the recommendations of the Committee as mentioned above regarding implementation of the Schemes of Semester I & II and related provisions of Direction as per the G.R. of Govt. of Maharashtra dated 4.7.2023 as per NEP-2020 guidelines under Sub Section (7) of Section 12 of the Maharashtra Public Universities Act, 2016 on behalf of Faculty of Science & Technology and Academic Council on 07/12/2024 to be implemented from the Academic session 2024-2025 & onwards,

AND

Whereas, the Schemes of Teaching, Learning, Examination and Evaluation and the draft syllabus of Semester I & II of Under-graduate Courses of Engineering & Technology programmes as per NEP-2020 guidelines are to be made available for all the concerned of the University,

AND

Whereas, the Schemes of Teaching, Learning, Examination and Evaluation and other provisions are required to be regulated by an Ordinance and the Regulation,

AND

Whereas, the matter of making of an Ordinance is a time consuming process, hence, it is necessary to issue a Direction under Section 12 (8) of the Maharashtra Public Universities Act, 2016,

Now, therefore, I, Dr. Milind Barhate, Vice-Chancellor, Sant Gadge Baba Amravati University, in exercise of the powers conferred upon me under Sub-Section (8) of the Maharashtra Public Universities Act, 2016, do hereby direct as under:

1) This Direction may be called "Examination leading to the Multi-disciplinary degree of B.E./ B.Text.E./B.Tech. (Chem.Engg.) / B.Tech.(Chem.Tech.)(Food, Pulp & Paper, Oil & Paint & Petrochemical Technology) Major in … Minor in … (Four Year Degree Course Semester Pattern) and B.E. /B.Text.E. /B.Tech. (Chem. Engg.) /B.Tech.(Chem.Tech.) (Food, Pulp & Paper, Oil & Paint & Petrochemical Technology) (Honors) or Honors with Research as per National Education Policy- 2020 in the Faculty of Science & Technology, [Engineering & Technology Group] Direction, 2025.

2) This Direction shall belong to the Faculty of Science & Technology.

3) This Direction shall come into force with effect from the date of its issuance.

4) This Direction shall come into force with effect from the Academic Session as follows:-

i) Semester I & II from the academic session 2024-2025
ii) Semester III & IV from the academic session 2025-2026
iii) Semester V & VI from the academic session 2026-2027
iv) Semester VII & VIII from the academic session 2027-2028.

5) The approved Structure of the Schemes of Teaching, Learning, Examination and Evaluation of Semester I & II for all the Under-graduate programmes of Engineering & Technology as per NEP-2020 guidelines shall be as per **Table No. 3**.

6) The provisions of Directions, eligibility criteria and other details are as follows:

Subject to the conditions prescribed by the Government from time to time, for admission to First Year B.E./B.Text.E. / B.Tech. (Chem. Engg.) / B.Tech. (Chem. Tech.) (Food, Pulp & Paper, Oil & Paint & Petrochemical Technology) courses, the candidate shall be considered eligible :

Passing 12th Standard Examination of the Maharashtra State Board of Secondary and Higher Secondary Education, with subjects:

1. English (Higher or Lower)
2. Modern Indian Language (Higher or Lower)
3. Mathematics and Statistics.
4. Chemistry.
5. Physics.
6. Any other optional subject from out of the list prescribed by the said Secondary and Higher Secondary Education Board.

OR

i) English (Higher or lower)
ii) Mathematics and Statistics.
iii) Chemistry
iv) Physics
v) Vocational subject (Defined by the said Board as a Technical Subject)

OR

An Examination recognized by the Sant Gadge Baba Amravati University as an equivalent to the above.

4) Subject to the conditions prescribed by the Govt. from time to time for direct admission to the second B.E. / B.Text.E. / B.Tech. (Chem. Engg.) / B.Tech. (Chem. Tech.) (Food, Pulp & Paper, Oil & Paint & Petrochemical Technology), the candidates shall be considered eligible :-
Passing Diploma in relevant branch in First Division, awarded by the Board of Technical Examination of Maharashtra State, Mumbai.

OR

Any Diploma equivalent to the corresponding Diploma of the Board of Technical Examination of Maharashtra State, Mumbai.

7) As per the earlier provisions in the CGS & CBCS pattern Directions regarding intake of the admitted students for Semester I & II of all the Engineering & Technology prorammes [(except B.Tech.(Chem.Tech) (Food, Pulp & Paper, Oil & Paint & Petrochemical Technology), both the Semesters I & II of First Year shall be run parallel or in uniform way for smooth conduct of the operation process which is as under:

Description about New First Year Scheme for all branches of Engineering & Technology with Group A & Group B subjects:

i) The sanctioned intake and / or the number of the candidates admitted to first year Engineering shall be divided into two Groups as A & B in the multiples of 60 preferable at the institute level.
ii) Group – A candidates shall registrar for Group – A subjects in first semester and Group – B candidates shall registrar for Group – B subjects in first semester.
iii) The candidates shall be examined for their subjects from the respective groups in First Semester.
iv) In the Second Semester, candidates from Group – B shall registrar for the subjects of Group – A. Similarly, candidates from Group – A shall registrar for the subjects of Group – B .
v) The candidates shall be examined for their subjects from the other groups in second Semester.
vi) Thus, at the end of the first year, all the subjects shall be studied by the candidates from both the groups.
vii) The Mark list shall show only the group obtained in respective Semester, list first Semester Group – B, first Semester Group – A.
viii) The exercise on the part of the college shall be to ensure that the candidates fill up the examination forms correctly according to the subjects group he / she has registered in both the Semesters.

1.0 NEP IMPLEMENTATION IN FIRST PHASE:

1.1 Applicability: This scheme shall be applicable to the undergraduate Programmes B.E. (Bachelor of Engineering), B.Tech. (Bachelor of Technology), B.Text.E. (Bachelor of Textile Engineering) and other UG Engineering Degree Programmes in the faculty of Science & Technology. The Department Specific Core (DSC) concept shall be implemented at non-autonomous affiliated colleges for the above-mentioned programme.

1.2 Objective: The structure of the four – years Bachelor's Degree Programme alters the opportunity to students to experience the full range of holistic and multi-disciplinary education in addition to a focus on the chosen Major and Minor as per their choices and the feasibility of exploring learning abilities.

Explanation:

(a) Major (Core) Subject 80 – 88 Credits: It is the discipline or subject of main focus and the degree will be awarded in that discipline/Subject. For example: B.E./B.Tech. in various disciplines, such as B.E. (Civil Engineering), B.E. (Mechanical Engineering), B.Tech. (Chemical Technology), B.Text.E. (Bachelor in Textile Engineering), etc.

Students shall have to secure a minimum 50% of total Credits through Core Courses (mandatory courses, electives, vocational courses, Major Specific IKS, Internship/ Field Projects/ Apprenticeship/ Community Engagement Projects, Seminars, and Group Discussion).

In general, for the four years' bachelor's degree programme, the distribution of credits will be as follows:

Major (Core) Subject comprising Mandatory and Elective Courses:

i. Minimum 50% of total credits corresponding to Four - year UG Degree- Mandatory Courses offered in all Four years;
ii. Elective courses of Major will be offered in the third and/or final year.
iii. Vocational Skill Courses, Internship/ Apprenticeship, Community Engagement Project (CEP)/ Field Projects (FP), Research Projects connected to Major.

(b) Minor Subject 14 Credits: Minor subjects will be subjects focusing on multidisciplinary education as expected in the NEP-2020. The student choosing department specific core (DSC) may choose Minor from same faculty or faculty unrelated to the Major, but something that complements the Major.

Compulsory Multi-disciplinary Minor Subject: 14 Credits

i. The Minor subjects may be from the different disciplines of the Engineering faculty, or they can be from different faculty altogether.

ii. The credits of compulsory Minor subjects shall be completed from the second year to the final year of UG Programme.

(c) Generic/Open Elective Course (GE/OE) 08 Credits: A student is required to select an 'Generic/Open Elective Course' from the 'Generic/Open Elective Course Basket' of any Programme offered by the university in any faculty before filling the examination form for the semester concerned. Such an 'Generic/Open Elective Course' cannot be selected from the subjects chosen by a student as 'Major' and 'Minor' subjects.

Generic/ Open Elective Courses (OE): 08 credits

i. It is to be offered in Second and/or Third year
ii. Faculty-wise baskets of OE shall be prepared by the University/Autonomous Engineering Colleges.
iii. OE is to be chosen compulsorily from faculty other than that of the Major Discipline.

(d) Vocational and Skill Enhancement Courses (VSEC) 08 – 12 Credits:

i. Vocational Skill Course (VSC) - 08 Credits: Wherever applicable vocational courses will include skills based on advanced laboratory practical of Major. A student is required to successfully complete the 'VOCATIONAL SKILL COURSE' as mentioned in this scheme of examination. This course must be a course corresponding to the 'MAJOR' subject selected by a student.

- Vocational Skill Courses (VSC): 04 credits, including Hands on Training corresponding to the Major and/or Minor Subject:

a. To be offered in first three years;

b. Wherever applicable vocational courses will include skills based on advanced laboratory practicals of Major.

ii. **Skill Enhancement Course (SEC) - 04 Credits**: A student is required to select a 'SKILL ENHANCEMENT COURSE' from the basket provided by the university for this purpose.

- **Skill Enhancement Courses (SEC): 04 credits:**

i. To be offered in first three years;

ii. To be selected from the basket of Skill Courses approved by University/Autonomous Engineering Colleges.

(e) Ability Enhancement Courses (AEC), Indian Knowledge System (IKS) and Value Education Courses (VEC) - 10 Credits:

i. **Ability Enhancement Course (AEC) - 04 Credits**: A student is required to undergo and successfully complete the 'ABILITY ENHANCEMENT COURSE' as English for 02 Credits and Modern Indian Language for 02 Credits.

i. To be offered in First and Second year
ii. English: 02 Credits
iii. Modern Indian Language: 02 credits
iv. To be offered from the Basket approved by University / Autonomous College;

The focus for both languages should be on linguistic and communication skills.

ii. **Generic IKS Course - 02 Credits**: These are expected to contain basic knowledge of the Indian Knowledge System (IKS). It should contain introductory information to the IKS. The student should be able to acquire a basic knowledge after completion of the course.

(**Subject Specific IKS Course**: This is 2 Credit courses should contain advanced information pertaining to the subject as these will be considered as a part of the Major Credit. The student should have completed the Generic level as a prerequisite before enrolling in the discipline related course)

i. To be offered in First Year

ii. Courses on IKS to be selected from the basket of IKS courses approved by University/ Autonomous Colleges or as per AICTE / UGC Guidelines on IKS.

iii. **Value Education Courses (VEC) - 04 Credits**:

i To be offered in Second year

ii Value Education Courses (VEC) such as Understanding India, Environmental Science/Education, and Digital and Technological Solutions.

(f) Field Projects/ Internship/ Apprenticeship/ Community Engagement and Service corresponding to the Major (Core) Subject, Co-curricular Courses (CC) and Research Project:

These verticals of Major are to be completed by the student under the supervision of mentor faculty as per Teaching Learning Scheme.

- **Internship/Apprenticeship corresponding to the Major (Core) Subject**: 12 Credits. Internship of One Semester duration shall be offered either in the VII or VIII semesters. Courses offered during the Internship Semester shall be offered **in online mode**.
- **Field Projects/Community Engagement Projects corresponding to the Major (Core) Subject**: minimum 02 credits.
- To be offered in the Second year of UG Degree Programmes.
- Co-curricular Courses (CC) such as Health and Wellness, Yoga education sports, and fitness, Cultural Activities, NSS/NCC and Fine/ Applied/ Visual/Performing Arts: 04 credits
- To be offered in First year.

(g) Additional Credits for Bachelor's degree- with Double Minor OR Honors: 18-20 Credits:

- These are additional credits to be offered from the second year to the final year and will be offered as an option to students.

(h) Additional Credits for Bachelor's degree- Honors with Research: Minimum 18 Credits

- These are additional credits to be offered in the final year and will be offered as an option to students.

The UGC Regulations, 2021 permit up to 40% of the total courses being offered in a particular programme in a semester through the **Online Learning Courses** offered through the **SWAYAM** platform and/or other State Level Common Platforms which can be developed in due course with the participation of different Universities/ HTEIs.

2.0 **Credit Framework under Four-Years UG Engineering Programme with Multiple Entry and Multiple Exit options:**

The Four-year Bachelor's Multidisciplinary Engineering Degree Programme allows the students to experience the full range of holistic and multidisciplinary education in addition to a focus on the chosen major and minors as per their choices and the feasibility of exploring learning in different institutions.

The minimum and maximum credit structure for different levels under the Four-year Bachelor's Multidisciplinary Engineering UG Programme with multiple entry and multiple exit options shall be as per **Table No. 1**:

CREDIT FRAMEWORK

Table 1: Credit Framework

Levels	Qualification Title	Credit Requirements		Semester	Year
		Minimum	Maximum		
4.5	One Year UG Certificate in Engg./Tech.	40	44	2	1
5.0	Two Years UG Diploma in Engg./Tech.	80	88	4	2
5.5	Three Years Bachelor's Degree in Vocation (B. Voc.) or B.Sc. (Engg./Tech. Tech.)	120	132	6	3
	4-Years Bachelor's degree				
6.0	(B.E./ B.Tech. or Equivalent) in Engg. / Tech. with Multidisciplinary Minor	160	176	8	4

6.0	4-Years Bachelor's degree (B.E./ B.Tech. or Equivalent) in Engg. / Tech.- Honors and Multidisciplinary Minor	180	194	8	4
6.0	4-Years Bachelor's degree (B.E./ B.Tech. or Equivalent) in Engg. / Tech.- Honors with Research and Multidisciplinary Minor	180	194	8	4
6.0	4-Years Bachelor's degree (B.E./ B. Tech. or Equivalent) in Engg. / Tech.- Major Engg. Discipline with Double Minors (Multidisciplinary and Specialization Minors)	180	194	8	4

(a) Credits offered per Semester will be a Minimum 20 and a Maximum 22. While minimum credits are mandatory as per National Credit Framework, the Universities and Autonomous Engineering Colleges can evolve the mechanism for providing Semester/ Level wise credit attainment flexibility within the broad framework.

(b) With effect from Academic Year 2024-25, the first year of 4-Years Multidisciplinary Bachelor's Degree in Engineering / Technology Program (B.E./ B.Tech. or Equivalent) will be introduced. Thus, the Fourth Year of Bachelor's Engg./ Tech. Degree (Level 6.0) with various options- Bachelor's Engineering / Technology Degree in chosen Major Engineering / Technology Discipline with Multidisciplinary Minor (160-176 credits), OR Bachelor's Engg./ Tech. Honors Degree in chosen Major Engineering / Technology Discipline with Multidisciplinary Minor (180-194 credits) OR Bachelor's Engineering / Technology Honors with Research Degree in chosen Major Engineering / Technology Discipline with Multidisciplinary Minor (180-194 credits) OR Bachelor's Engineering / Technology Degree in chosen Major Engineering / Technology Discipline with Double Minor (Multidisciplinary and Specialization Minor, 180-194 credits) will begin with effect from Academic Year 2027-2028.

(c) Under Bachelor's Engineering / Technology Honors with Research Degree in chosen Major Engineering / Technology Discipline with Multidisciplinary Minor (180-194 credits), the students will work on a research project or dissertation for 18 credits in the fourth year in the respective Major Engineering / Technology Discipline. The decision regarding the distribution of18 credits for Research Project in Semesters VII and VIII of the Fourth Year will be taken by Academic Authorities of University/ Autonomous Engineering Colleges. These 18 Credits will be over and above the min.160-max.176 Credits prescribed for Four Year Multidisciplinary Bachelor's Degree in Engineering / Technology Program.

(d) The Bachelor's Engineering / Technology Honors Degree in chosen Major Engineering / Technology Discipline with Multidisciplinary Minor (180-194 credits) enables students to take up five-six additional courses in the same Engg. / Tech. discipline of 18 to 20 credits distributed over semesters III to VIII. The decision regarding the mechanism of distribution of these 18-20 credits over semesters III to VIII, which are over and above the min.160-max.176 Credits prescribed for Four Year Multidisciplinary Bachelor's Degree in Engineering / Technology will be taken by Academic Authorities of University / Autonomous Engineering Colleges.

(e) Under Bachelor's Engineering / Technology Degree in chosen Major Engineering / Technology Discipline with Double Minor (Multidisciplinary and Specialization Minor, 180-194 credits), students would take up five-six additional courses of 18 to 20 credits in another Engineering / Technology discipline/ Emerging Areas Specialization distributed over semesters III to VIII. The decision regarding the mechanism of distribution of these 18-20 credits over semesters III to VIII, which are over and above the min.160-max.176 Credits prescribed for Four Year Multidisciplinary Bachelor's Degree in Engineering / Technology will be taken by Academic Authorities of University/ Autonomous Engineering Colleges.

(f) The NEP 2020 Four Year Multidisciplinary Engineering Curriculum Framework offers:

i. The flexibility to move from one discipline of study to another.

ii. The opportunity for learners to choose the courses of their interest in all disciplines.

iii. The multiple entry and exit options with the award of UG certificate/ UG diploma/ or three- year degree depending upon the number of credits secured.

iv. The flexibility for learners to move from one institution to another to enable them to have multi and/or interdisciplinary learning.

v. Mandatory One Semester Internship/ On Job Training (OJT).

vi. Provision of Vocational and Skill Enhancement Courses (VSEC), Indian Knowledge System (IKS), Community Engagement Project (CEP)/Field Project (FP) in Major Discipline Degree.

vii. Horizontal and Vertical mobility with multiple entry and exit options at each Level.

viii. Provision of NSQF compliant Skill-based Courses and internships for Exits at different Levels.

ix. Credits for Co-curricular and Extra-Curricular Activities as Curricular activities besides provision of credit for the Ability Enhancement Courses (AEC) and Value Education Courses (VEC).

xi. Interdisciplinary or Multidisciplinary education through Single and Double Minors and Open Electives (OE).

xii. The flexibility to switch to alternative modes of learning (offline, ODL, and Online learning, and hybrid modes of learning).

3.0 NEP 2020 CURRICULUM FRAMEWORK OFFERS:

i. The flexibility to move from one discipline of study to another.

ii. The opportunity for learners to choose the courses of their interest in all.

iii. The multiple entry and exit options with the award of UG certificate/ UG diploma/ or Three-years and Four years degree depending upon the number of Credits secured.

iv. The flexibility for learners to move from one institution to another to enable them to have multi and/or interdisciplinary learning.

v. The flexibility to switch to alternative modes of learning (offline, ODL, and Online learning, and hybrid modes of learning).

4.0 CREDIT DISTRIBUTION STRUCTURE

Illustrative Semester wise Credit distribution structure for Four Year UG Engineering Program - One Major, One Minor:

TABLE 2: Credit Distribution Structure

Semester		**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	**Total Credits**
Basic Science Course	BSC/ESC	06-08	08-10		--	--	--	--	--	14-18
Engineering Science Course		10-08	06-04		--	--	--	--	--	16-12
Programme Core Course (PCC)	Program Courses	--	02	08-10	08-10	10-12	08-10	04-06	04-06	44-56
Program Elective Course (PEC)		--	--	--	--	04	08	02	06	20
Multidisciplinary Minor (MDM)	Multidisciplinary Courses		-	02	02	04	02	02	02	14
Open Elective (OE) Other than a particular program		--	--	04	02	02	--	--	--	08
Vocational and Skill Enhancement Course (VSEC)	Skill Courses	02	02	--	02	--	02	--	--	08
Ability Enhancement Course (AEC -01, AEC-02)		02	--	--	02	--	--	--	--	04
Entrepreneurship/Economics/ Management Courses	Humanities Social Science and Management (HSSM)	--		02	02	--	--	--	--	04
Indian Knowledge System (IKS)			02		--	--	--	--	--	02
Value Education Course (VEC)		--	--	02	02	--	--	--	--	04
Research Methodology	Experiential Learning Courses	--	--	--	--	--	--		04	04
Comm. Engg. Project (CEP)/Field Project (FP)		--	--	02	--	--	--	-	-	02
Project		--	--	--	--	--	--		04	04
Internship/ OJT		--	---			--	--	12	-	12
Co-curricular Courses (CC)	Liberal Learning Courses	02	02		--	--	--	--	-	04
Total Credits (Major)		**20-22**	**20-22**	**20-22**	**20-22**	**20-22**	**20-**	**20-**	**20-**	**160-176**

Abbreviations: Generic/ Open Electives: OE; Vocational Skill and Skill Enhancement Courses: VSEC; Vocational Skill Courses: VSC; Skill Enhancement Courses: SEC; Ability Enhancement Courses: AEC; Indian Knowledge System: IKS; Value Education Courses: VEC; OJT: On Job Training: Internship/ Apprenticeship; Field projects: FP; Community engagement project: CEP; Co-curricular Courses: CC; RM: Research Methodology; Research Project: RP, Liberal Learning Course: Lib. Learn, Courses on Humanities, Social Science, and Management: HSSM.

Note: The Credit Distribution Table given above is illustrative only. The Universities/ Autonomous Colleges may suitably modify within the broader framework of credit distribution across seven verticals and as per the AICTE rules and regulations**.**

5.0 CHOICE OF MAJOR AND MINOR SUBJECTS/ DISCIPLINE:

5.1 Major (Core) Subject: Major (Core) Subject is the Engineering/ Technology discipline or subject of main focus and the degree will be awarded in that discipline/ Subject. Students should secure a minimum 50% of total credits through Core Courses (mandatory courses, electives, vocational courses, Internship/ Field Projects/ Apprenticeship/ Community Engagement Projects, Seminars, and Group Discussions). In addition, for the award of Bachelor's Degree- with Double Minor OR Honors students shall have to earn additional 18-20 credits by opting for courses of Emerging Specializations or the Same Discipline, respectively. For the award of Bachelor's Degree- Honors with Research, students shall have to earn additional 18-20 credits through Research Project or Dissertation.

6.0 COURSES ON INDIAN KNOWLEDGE SYSTEM (IKS):

The concerned academic authorities, while defining the curriculum for modules/courses on IKS, may take the support of the Indian Knowledge System (IKS) Cell under the Ministry of Education (MoE) at AICTE, New Delhi which is established to promote interdisciplinary research on all aspects of IKS, preserve and disseminate IKS for further research and societal applications. The IKS Cell has established multiple IKS Centers at different Institutes in various parts of the country to act as a catalyst for initiating research, education, and outreach activities. In addition, the list of courses may be developed and offered in online or offline mode by the parent university or the specialized HEIs.

The courses to be developed under the Indian Knowledge Systems (IKS) are as follows:

6.1 Generic IKS Course: These are expected to contain basic knowledge of the IKS subject. It should contain introductory information to the IKS. The student should be able to acquire basic knowledge after completion of the course.

6.2 Subject-Specific IKS Courses: These courses should contain advanced information pertaining to the subject as these will be considered as a part of the major credit. The student should have completed the Generic level as a prerequisite before enrolling in the discipline-related course**.**

The Autonomous Institutes/ Universities may evolve their own IKS subject-related courses by following UGC guidelines in this regard.

7.0 CREDIT SPECIFICATIONS (Calculation of Workload) :

i. **Theory Courses**: 13-15 hours of teaching per credit is required in a semester.
ii. **Laboratory Course**: 26-30 hours in laboratory activities per credit is required in a semester.
iii. **Studio activities**: Studio activities involve the engagement of students in creative or artistic activities. Every student is engaged in performing a creative activity to obtain a specific outcome. Studio-based activities involve visual- or aesthetic-focused experiential work. A minimum of 26-30 hours in studio activities per credit in a semester is required.
iv. **Workshop-based activities**: Courses involving workshop-based activities require the engagement of students in hands-on activities related to work/vocation or professional practice. Every student is engaged in performing a skill-based activity. Related to specific learning outcome (s). 26-30 hours of workshop-based activities per credit in a semester is required.
v. **Seminar/ Group Discussion**: 13-15 hours of participation in seminar/ Group Discussion activity per credit in a semester is required.
vi. **Internship**: Credits for internship shall be one credit per two weeks of internship (or 36-40 hours of engagement), The internship shall be monitored jointly by the faculty and Industry/ Organization Mentor. Internship of One Semester duration shall be offered either in the VII or VIII semesters. Courses offered during the Internship Semester shall be offered in online mode.
vii. **Field-based Learning/ Practices**: These are the courses requiring students to participate in field- based learning/projects generally under the supervision of faculty. A minimum of 26-30 hours of learning activities per credit in a semester is required.
viii. **Community Engagement Projects**: These are the courses requiring students to participate in field- based learning/ projects generally under the supervision of faculty. The curricular component of 'community engagement and service' will involve activities that would expose students to the socio-economic issues in society so that the theoretical learnings can be supplemented by actual life experiences to generate solutions to real-life problems. 26-30 hours of contact time per credit in a semester along with 13-15 hours of activities such as preparation for community engagement and service, preparation of reports, etc., and independent reading and study with 2 credit courses.

8.0 ABC, ADMISSION SYSTEM, MULTIPLE ENTRY AND EXIT PATH AND LATERAL ENTRY:

8.1 Enrolment of Students and Registration of Colleges on ABC:

All State Universities/ Autonomous Institutes must promote registering on ABC. Since Credits awarded to a student for one programme from an institution may be transferred/redeemed by another institution upon the student's consent through ABC, it is essential that all students should get enrolled on ABC, create ABC ID, and share these ABC IDs with Academic Institutions where they are enrolled. Credits Earned by the student will reflect in the student's ABC account.

Multi-institutional learning permission: The student shall be allowed to earn some credits from institutions/colleges other than the Main/ Parent College i.e. a college where students earn all their major credits (more than 50%) including credits for the core subject. Students enrolled in the degree programmes may avail of other elective credits from two different colleges affiliated with the same University and/or online courses available within the 40% cap mentioned by UGC.

8.**2 Multiple Exits**: Students will have the flexibility to enter a programme in odd semesters and exit a programme after the successful completion of even semesters as per their future career needs.

- Students exiting the First-Year programme after securing minimum 44 credits will be awarded UG Certificate in the relevant Discipline /Subject provided they secure 8 credits in work-based vocational courses or internship / Apprenticeship offered during summer vacation in addition to 4 credits from skill-based courses earned during the first and second semester.
- Students exiting the Second Year Programme after securing minimum 80 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 8 credits in skill-based vocational courses (skill-based courses, internship, mini projects, etc.) offered during summer vacation after the second year.
- Students exiting the 3-year UG program will be awarded B.Voc. in the relevant Discipline /Subject upon securing minimum 120 credits with additional 8 credits in skill-based vocational courses (skill- based courses, internship, mini projects etc.) offered during summer vacation after the sixth semester.
- Exit options shall be provided with Certification, Diploma and B. Vocational degrees to the students at the end of the second, fourth and sixth semester, respectively, in the four-year degree programme. Students will receive a Bachelor's degree with the single minor on successfully completing all eight semesters of the UG Programmes either at a stretch or with opted exits and re- entries. In addition to this, student will receive a Bachelor's degree with Double Minor/Honors/ Research subject to earning additional 18-20 credits.

8.3 Re-entry or Lateral Entry: Students, opting for exits at any level, will have the option to re-enter the programme from where they had left off, in the same or in a different higher education institution within four years of exit and complete the degree programme within the stipulated maximum period of eight years from the date of admission to first year UG. Re-entry at various levels for lateral entrants in academic programmes shall be based on the earned and valid credits as-deposited and accumulated in the Academic Bank of Credits (ABC) through Registered Higher & Technical Education Institutions (RHTEI) and proficiency test records. Lateral entry into the programme of study leading to the UG Diploma/ B. Vocational/ UG Bachelor's Degree with single minor/ UG Bachelor's Degree with Double Minor/ Honors /Research will be based on the validation of prior learning outcomes achieved and subject to availability based on intake capacity.

8.4 Eligibility for admission to the UG Bachelor's Degree with Double Minor/ Honors /Research as per UGC guidelines: Minimum CGPA/CPI of 7.5 or minimum 75% after second semester for UG Bachelor's Degree with Double Minor/ Honours and Minimum CGPA/CPI of 7.5 or minimum 75% after sixth semester for UG Bachelor's Degree with Research.

9.0 ENROLLMENT AND REGISTRATION OF STUDENTS ON ABC:

Creation of ABC ID: Credits awarded to a student from one program from an institution may be transferred/ redeemed by another institution upon the students consent through ABC. Therefore, it is essential to all students to enroll on ABC, Create ABC ID and share ABC ID with academic institution where he/she admitted.

Credit Transfer Mechanism: Credit Transfer Mechanism comprising of Credit Accumulation, Credit Recognition, Credit Redemption and Credit Transfer shall be as prescribed.

10.0 EXAMINATION AND ASSESSMENT PROCESS:

i. The basic principle of the Credit framework is that Credits are a function of the successful completion of a program of study/ vocational education/ training and assessment. No Credit can be earned by the student unless the student is assessed for the achievement of the desired competencies and outcome of a program.

ii. Exit options are provided with Certificate, Diploma and Basic Bachelor's degrees to the students at the end of the second, fourth and sixth semesters of a Four Years Multidisciplinary Degree Programme. Students will receive a Bachelor's degree with Honors/ Research on successfully completing of all eight semesters of the UG Program either at a stretch or with opted exits and re- entries.

iii. For the smooth success of four-year degree programme with multiple entry and exit systems, the examination mode should be based on the combination of innovative trends in formative (informal and formal tests administered during the learning process) and summative (evaluation of students learning at the end of an instructional unit) examination modes in line with the UGC Report on 'Evaluation Reforms in Higher Educational Institutions (2019).

11.0 EXAMINATION, EVALUATION AND ASSESSMENT SCHEME:

The Teaching, Learning, Examination, Evaluation and Assessment Scheme shall be as per **Annexure 4** attached herewith the Direction.

12.0 CONTINUOUS ASSESSMENT TESTS (CAT):

For internal assessment, the Continuous Assessment Tests (CAT) shall be conducted as under:-

i. Three CAT each of 15 Marks (Theory) as applicable and 10 Marks based on other teaching evaluation components.

- First on completion of 25% Syllabus of the course or on completion of 25 teaching days,
- Second on completion of 50% Syllabus of the course or on completion of 50 teaching days,
- Third on completion of 75% Syllabus of the course or on completion of 75 teaching days.

ii. Each concurrent assessment (CAT-I, II & III) will be mapped to relevant Course Learning Outcome.

iii. Total Performance in CAT shall be based on the best two out of three in CAT examinations.

iv. Internal assessment shall be carried out by the respective course teacher by choosing variety of assessment tools/methods such as class test, record book, seminar, case study, field work, mini project work, quiz or any innovative method, which may be deemed to be appropriate for assessing the relevant course outcome.

13.0 CONDUCTION OF THE EXAMINATION:

As per the scheme of teaching, learning, examination and evaluation, theory/practical examinations of Semester-I, II, III, IV, V, VI, VII and VIII shall be conducted by the University (except for Internal Examinations as applicable) at the end of each semester.

The theory/practical examinations of all the Semesters shall be held as per the following Schedule:-

Sr.No.	Name of the Examination	End Semester Examination	Supplementary Examination*
1	Semester-I, III, V and VII	Winter	Summer
2	Semester-II, IV, VI and VIII	Summer	Winter

* The University may evolve mechanism for conducting repeat end semester examination. Such repeat examinations shall have to be conducted within one month of the regular even semester examination and on demand examination.

1. The practical examination of all semesters shall be conducted by the University at the end of each semester. The University shall conduct the Practical examination of all semesters as per the schedule announced by the University by appointing external and internal examiners.
2. The examinations specified above shall be held twice in a year at such places and on such dates as may be prescribed by the University.
3. An applicant to an examination specified above, shall pursue a regular course of study in courses prescribed for the examination concerned for not less than one semester in a particular semester in a College/ Institute/University department.

4. Provided that the student shall be eligible to appear for examination if -
   a. He/she complies with the provisions of the Ordinance pertaining to the Examination in general from time to time.
   b. He/she has prosecuted a regular course of study in a university department/college affiliated to the University.
   c. He/she has in the opinion of the Principal shown satisfactory progress in his/her studies.

5. The provisions of Ordinance No. 6 and Ordinance No. 9 shall be mutatis-mutandis applicable to every collegiate/non-collegiate student.
6. The fees for each theory examination and practical examination conducted by the university shall be as prescribed by the University, from time to time.

14.0 COMPUTATION OF SGPA AND CGPA:

<u>Letter Grades and Grade Points:</u>

Computation of SGPA and CGPA shall be on the basis of Credits prescribed to Courses and Grade Points obtained by the student based on scale as mentioned in **Table – 4**:

TABLE 4: Letter Grades And Grade Points:

Semester GPA/ Program CGPA Semester/Program	% of Marks	Alpha-Sign / Letter Grade Result	Grade Point
9.00-10.00	90.0-100	O (Outstanding)	10
8.00 - <9.00	80.0 - <90.0	A+ (Excellent)	9
7.00 - <8.00	70.0 - <80.0	A (Very Good)	8
6.00 - <7.00	60.0 - <70.0	B+ (Good)	7
5.50 - <6.00	55.0 - <60.0	B (Above Average)	6
5.00 - <5.50	50.0 - <55.0	C (Average)	5
4.00 - <5.00	40.0 - <50.0	P (Pass)	4
Below 4.00	Below 40.0	F (Fail)	0
Ab (Absent)	-	Ab	0

Computation of SGPA and CGPA:

The Semester Grade Point Average (SGPA) is computed from the grades as a measure of the student's performance in a given semester. The SGPA is based on the grades of the current term, while the Cumulative Grade Point Average (CGPA) is based on the grades in all courses taken after joining the programme of study.

Semester Grade Point Average (SGPA): The SGPA is the ratio of the sum of the product of the number of Credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of Credits of all the courses undergone by a student, i.e.

$$SGPA\ (Si) = \sum(Ci \times Gi) / \sum Ci$$

Where Ci is the number of Credits of the ith course and Gi is the grade point scored by the student in the ith course.

Example for Computation of SGPA:

Semester	Course	Credit	Letter Grade	Grade point	Credit Point (Ci x Gi) (Credit x Grade)
I	Course 1	2	A	8	2 X 8 = 16
I	Course 2	2	B+	7	2 X 7 = 14
I	Course 3	2	B	6	2 X 6 = 12
I	Course 4	2	O	10	2 X 10 = 20
I	Course 5	2	C	5	2 X 5 = 10
I	Course 6	2	B	6	2 X 6 = 12
		12			
SGPA					84/12 = **7.00**

Computation of CGPA:

The Cumulative Grade Point Average (CGPA) is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

$$CGPA = \sum(Ci \times Si) / \sum Ci$$

where Si is the SGPA of the ith semester and Ci is the total number of Credits in that semester.

Example for Computation of CGPA:

Semester I	Semester II	Semester III	Semester IV	Semester V	Semester VI	Semester VII	Semester VIII
Credit: 22 SGPA:6.9	Credit: 22 SGPA:7.8	Credit:22 SGPA:5.6	Credit: 22 SGPA:6.0	Credit: 22 SGPA: 6.3	Credit: 22 SGPA 8.0	Credit: 22 SGPA 8.0	Credit: 16 SGPA 9.0
CGPA= **7.13** (22 x 6.9 + 22 x 7.8 + 22 x 5.6 + 22 x 6.0 + 22 x 6.3 + 22 x 8.0 + 22 x 8.0 + 16 x 9.0)/170							

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

15.0 EQUIVALENCE OF THE CONVENTIONAL DIVISION/CLASS:

Equivalence of the conventional division/class to the corresponding C.G.P.A. in final semester shall be in accordance with the **Table**:

Table 5: Equivalence of Class/Division to C.G.P.A.

Sr. No.	C.G.P.A.	Class/Division
1.	7.5 or more than 7.5	First Class with Distinction
2.	6.00 or more but less than or equal to 7.49	First Class
3.	5.00 or more but less than or equal to 5.99	Second Class
4.	4.00 or more but less than or equal to 4.99	Pass

16.0 : DECLARATION OF RESULTS:

1. Declaration of result is based on the Semester Grade Point Average (SGPA) earned towards the end of each semester or the Cumulative Grade Point Average (CGPA) earned at the completion of all eight semesters of the programme and the corresponding overall alpha-sign or letter grades as given in **Table**. If some candidates exit at the completion of the first, second or third year of the Four years Undergraduate Programmes, with Certificate, Diploma or Basic Degree, respectively, then the results of successful candidates at the end of the second, fourth, sixth and eighth semesters shall also be classified on the basis of the CGPA obtained in the two, four, six or eight semesters, respectively.

2. A student obtaining Grade F shall be considered failed and will be required to reappear in the examination. Based on the above recommendations on Letter grades, grade points and SGPA and CGPA, the University shall issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.

17.0: AWARD OF DEGREE:

1. A student pursuing Four Year UG programme shall be awarded an appropriate Honors/ Research degree in Major/ Core Subject on completion of VIII Semester with the minimum of 160 Credits if he/she secures in that Subject at least 50% of the total Credits for that programme. He/She shall thus study the specific number of Mandatory Core Courses, Core Electives, Vocational and Skill Courses and Field projects/ Internships connected to Core Subjects in eight semesters, so as to cover at least 50% of the total Credits.

2. In case of Research Degree, student shall have to pursue research project and write dissertation in that Major in the VII and VIII semesters.

3. A student is eligible for the award of Minor Degree on successful completion of Four-years Degree Programme with the minimum of 160 Credits, if he/she earns 18-20 Credits in that Minor Subject. The award of Minor Degree is independent of the award of the Major Degree.

18.0: RE-ENTRY OR LATERAL ENTRY:

i. Students, opting for exits at any level, will have the option to re-enter the programme from where they had left off, in the same or in a different higher education institution within four years of exit and complete the degree programme within the stipulated maximum period of eight years from the date of admission to first year UG.

ii. Re-entry at various levels for lateral entrants in academic programmes shall be based on the earned and valid Credits as-deposited and accumulated in the Academic Bank of Credits (ABC) through Registered Higher Education Institutions (RHEI) and proficiency test records. Lateral entry into the programme of study leading to the UG Diploma/ Three-year UG Degree will be based on the validation of prior learning outcomes achieved and subject to availability based on intake capacity.

iii. An unsuccessful examinee at any of the above examination shall carry college assessment marks (Sessional Marks) of the theory/Practical examination to the successive attempt at the examination. The examinee however can go for his/her college assessment marks in the subject or subjects in which he/she shall be examined for total marks comprising of theory and sessional together at his/her successive attempts.

19.0 PROGRESSION TO HIGHER CLASS:

Allow To Keep Term (ATKT):

Eligibility for progression to higher classes shall be as per **Table 1**:

Table 1: Eligibility for progression to higher classes

S.No.	Admission to	Minimum Required Credits
1.	Semester III	28 Credits from all Verticals of Semester I and II
2.	Semester V	Successful completion of Semester I & II with all credits and 28 Credits from all Verticals of Semester III to IV
3.	Semester VII	Successful completion of Semester III & IV with all credits and 28 Credits from all Verticals of Semester V to VI

A student who could not complete a semester satisfactorily or did not keep term will be eligible for readmission to the same semester. However, readmission to the semester should be allowed only in regular session of that semester. In such case, the candidate will not be eligible to get admission in higher semester.

20.0 GENERAL PROVISIONS:

1. Record of student's Performance cum Evaluation (containing attendance, concept knowledge, intellectual/ decision making ability, handling skill, sense of responsibility, cooperative/leadership quality, presentation / demonstration) related to Internships/ Apprenticeship, Mini-Project, Field Projects /Studio Activities, Community Engagement and Services, etc. shall be maintained by the college/institute/university department.

2. For allotment of Internships/Apprenticeship, Mini-Project, Field Projects /Studio Activities, Community Engagement and Services, etc., the College/ Institute/University Department shall follow Standard Operating Procedures (SOP) with concerned College/Institute/University Department/ Organization/ Industry on the basis of Memorandum of Understanding (MoU) /Letter of Intent and Joining letter. Further, for validation, progress records, Evaluation Sheet etc. shall be maintained by the College/ Institute/ University Department.

3. For award of Credits to Co-curricular Courses: Health and wellness, Yoga Education, Sports and Fitness, Cultural Activities, NSS/NCC, Fine/Applied/Visual/Performing Arts, Academic Activities like paper presentations in conferences, Avishkar, start-ups, Hackathon, Quiz competitions, Article published, Participation in Summer school/ Winter School / Short term course, Scientific Surveys, Societal Surveys, Field Visits, Study tours, Industrial Visits, online/offline Courses on Yoga (Yoga for IQ development, Yoga for Ego development, Yoga for Anger Management, Yoga for Eyesight Improvement, Yoga for Physical Stamina, Yoga for Stress Management, etc.); the college/ Institute / university department should maintain a record of the student.

4. As per Maharashtra Public Universities Act, 2016, Section 89 Chapter VIII, the results of every examination and evaluation conducted by the University will be declared within thirty days from the last date of examination for that particular course and in any case declare the results latest within forty-five days. The names of the examinees passing the examination as a whole in the minimum prescribed period and obtaining the prescribed number of places in the CGPA shall be arranged in order of merit as provided in the examination in general Ordinance no. 6 provided that the merit list only be published in summer examination.

5. An examinee who has completed the term satisfactorily but fails to present himself/herself for the examination shall be eligible for re-admission to the same examination, on payment of fresh fees and other fees as may be prescribed by the university from time to time.

6. A candidate/student who has successfully completed all requisite courses approved by the university and earned minimum prescribed total Credits for which he/she is admitted for the under graduate degree programme and accumulated the required Credits for the program and who has put in the minimum residence time prescribed for each semester of the program shall be eligible to receive the degree.

7. Examinations will be conducted in Offline mode in accordance with Ordinance No.9. However, under special circumstances and in specific cases, those can be conducted in Online mode on the recommendations of Board of Examination & Evaluation and approval by the Academic Council.

8. Generally, and preferably, College/Institute/Department internal assessment examinations and university examinations papers should be set from the Question Bank prepared by the university.

9. Guidelines to Paper Setters are provided in Appendix B, Instructions to BOS in Appendix C, Glossary of Terms in Appendix D and Abbreviations in Appendix E, respectively. Further, at the end of Appendix E, list of references employed to compose this document is furnished.

10. Provisions of Ordinance No. 18/2001 in respect of an Ordinance to provide grace marks for passing in a Head of passing and Improvement of Division (Higher Class) and getting Distinction in the subject and condonation of deficiency of marks in a subject shall apply to the examination under this Direction.

11. The Codes allocated for various subject of different courses are appended as **Appendix – 1.**

12. Power to modify and remove difficulties:

(a) Notwithstanding anything contained in the foregoing, Hon'ble Vice-Chancellor in consultation with the Dean of the faculty shall have the power to issue directions or orders to remove any difficulty,

(b) Nothing in the foregoing may be construed as limiting the power of the University to amend, modify or repeal any or all of the above.

13. Task for BoS for effective implementation of NEP is specified in Appendix 10, Glossary of Terms in Appendix 11 and Abbreviations in Appendix 12, respectively.

21.0 NEP WORKING COMMITTEE:

A) University Level:

There shall be NEP working committee in the University comprising of the following members:

1. Pro-Vice Chancellor-Member
2. Deans of all faculties-Members
3. Two Experts not below the rank of Professors - Member nominated by the Honorable Vice-Chancellor
4. IQAC Coordinator- Member- Secretary.

B. University Department Level:

There shall be NEP working committee in each university department comprising of the following members:

1. Head of the University Department-Chairman
2. One representative of the University Dept Student Council -Member
3. One Teacher of the Department nominated by Honorable Vice-Chancellor-Member Secretary

C. College Level:-

There shall be a NEP working committee in each affiliated college comprising of the following members:-

1. Principal -Chairman
2. HoDs of Teaching Departments of a College- Members
3. One representative of the College Student Council - Member
4. IQAC Coordinator- Member- Secretary.

POWERS AND DUTIES OF THE NEP WORKING COMMITTEE:

1. Committee shall take review of the Implementation of the NEP after completion of every Semester
2. The committee shall report to the University about difficulties faced during the implementation of the NEP.
3. The committee should also consider the grievances of the students regarding the difficulties/disadvantages put to them, if any, during their studies under NEP.
4. For college level and university level, the committee will also be a Grievance Redressal Committee for implementation of NEP.
5. The committee may consider any other matter in the interest of the students as far as the NEP is concerned.

22.0: DRAFT SPECIMEN CURRICULUM DESIGN:

Level	Semester	Course Code	Course Name	Credits	Teaching Hours	Exam Duration	Max Marks
4.5	I		Mathematics - I	4	60	3 Hrs.	60

Course Description:

Subject Code …….: MATHEMATICS- I is a compulsory course for first year B.E., B.Tech., B.Text.E. and common to all branches.

Course Outcomes:

After completing the course, students will be able to:-

CO	Course Outcomes	Bloom's Taxonomy Level	Unit
CO1	Define Beta, Gamma and error functions and find the roots of Complex Numbers, Rank of Matrix, limit of function, series expansion and maxima – minima of functions, understand the basic concepts of probability and find the probabilities of events	K1	1,2,3,4,5
CO2	Summarize the Complex Numbers; Explain the Rank of Matrix, successive differentiation, Special functions (Beta and Gamma functions)	K2	1,2,3,4
CO3	Identify the real and imaginary part of logarithm of complex numbers, eigen values and eigen vectors.	K2	1,2
CO4	Solve the system of linear equations using Gauss elimination and Gauss Jordan Method, Leibnitz's theorem, definite integrals using Beta and Gamma functions and definite integrals using rule of Differentiation under integral sign.	K2	2,3,4
CO5	Apply De Moivre's theorem, Cayley Hamilton theorem, knowledge of integral calculus and apply the basic rules and theorems in probability including Bayes's theorem	K3	1,2,4,5

Detailed Syllabus: ***Illustrative Specimen***

Unit 1	**Complex Numbers:** Definition of complex numbers, Argand Diagram, De-Moivre's theorem and its application to find roots of algebraic equations, expansions of trigonometric functions, Circular and Hyperbolic functions inverse Hyperbolic functions, Logarithm of complex numbers, separation into real and imaginary parts.
Unit 2	**Matrices:** Rank of matrix, echelon form of matrix, normal form of matrix, algebraic system of m linear equations in n unknowns, Gauss elimination and Gauss Jordan elimination method, linear dependence and independence of vectors, orthogonal matrix, linear transformations, matrix of linear transformation, rank nullity theorem, Eigen values and Eigen vectors, Cayley Hamilton theorem and its applications.
Unit 3	**Differential Calculus:** nth order ordinary derivatives of elementary functions, Leibnitz's theorem, expansion of function in power series, Taylor's series, Maclaurin's series indeterminate forms and L'hospital rule, maxima and minima, converge of sequence and series, range of convergence of power series, test of convergence – ratio test and comparison test.
Unit 4	**Integral Calculus:** Beta function, Gamma function, rules of Differentiation Under Integral Sign, error function, application of definite integrals to evaluate surface area and volume of revolutions.
Unit 5	**Elementary Probability Theory:** Introduction to probability, addition and multiplication law of probability, independent events, total probability, Conditional probability, Bayes' theorem, permutation and combinations.

Text Books:

1. Erwin Kreyszing, Advanced Engineering Mathematics,10thEdition, Mumbai: WilleyEastern Ltd. 2015.
2. B. S. Grewal, Higher Engineering Mathematics, 44th Edition, New Delhi: Khannapublication, 2017.
3. Ramana B.V. Higher Engineering Mathematics, 11 th Reprint, New Delhi: TataMcGraw Hill, 2010.
4. David Poole, Linear Algebra: A Modern Introduction, 3rd Edition, USA:BROOKS/COLE CENGAGE Learning, 2011.
5. Ravish R. Singh, Mukul Bhatt, Engineering Mathematics- A tutorial approach, 4thEdition, New Delhi: Tata McGraw Hill Education Pvt. Ltd.2018.

Reference Books:

1. Dass H. K. Advanced Engineering Mathematics, 22nd Edition, New Delhi: S. Chand Publications, 2018.
2. P. N. Wartikar and J. N. Wartikar, A text book of Engineering Mathematics (Vol. 1 &2), Reprint, Pune: Pune Vidhyarthi Griha prakashan, 2013.

APPENDICES:

Appendix 1: Task for Board of Studies for effective implementation of NEP:

1) The Board of Studies are requested to define and specify the Graduate Attributes (GAs), Program Outcomes (POs) and Program Specific Outcomes (PSOs) for the respective Discipline/Subject.
2) The Board of Studies of all subjects should decide the titles for the following four verticals for all Eight semesters.
3) The Codes for the various types of verticals and the title of the Courses included in each Vertical shall be given by the respective board of Studies with the guidelines of the AICTE and the State Government of Maharashtra.

Vertical	Particulars	No. of Titles (for all non - lab Courses)	No. of Titles (for all lab Courses)
a	Major Discipline		
	Labs		
	IKS-Subject Specific		
	Electives		
b	Minor		
c	Generic Open Electives		
d	Vocational Courses		
	Skill Enhancement Courses		

4) The board of studies of all subjects of all the four Faculties should finalize the syllabus for the following four verticals for Semester I & II.

Vertical	Particulars	Syllabus-No. of Titles (for all non - lab Courses)	Syllabus-No. of Titles (for all lab Courses)
A	Major Discipline		
	Labs		
B	Minor		
C	Generic Open Electives		
D	Vocational Courses		
	Skill Enhancement Courses		

5) In addition to the above the Board of Studies of all Languages should take care of Value Education Course (VEC). These BoS should decide the titles for all applicable semesters and syllabi for first and second semesters as mentioned below:-

Vertical	Particulars	No. of Titles		Syllabus- No. of Titles (Semester I & II)
e	AEC	4 of one Credit each		
	IKS-Generic	01 title of 02 Credit		
	VEC	02 titles of 02 Credit each		
f	Internship/ Apprenticeship	Internal	Assessment of these verticals shall be based on various activities / practices. It shall be evaluated by giving maximum marks of 50 per 2 Credit Course with separate activity weightages /levels. A detailed SOP for this assessment process shall be prescribed separately.	
	FP/CEP			
	CC			

6) All Board of Studies should consider Vocational Skill Courses and Skill Enhancement Courses of Laboratory and Practical Nature and should evolve discipline specific teaching-learning modus operandi accordingly. However, classroom type theory courses may also be permissible for this vertical.

7) To evolve codes of various courses for all applicable verticals (a) to (f) the coding system given in **Appendix -1** should be followed.

8) The modus operandi for teaching, learning and evaluation for vertical (f) i.e., Internship, field project and Co-curricular Courses prescribed by NEP task force committee and duly approved by concern authorities will be applicable to all board of studies.

9) Details of Contents, Evaluation and Assessment of Laboratory Course (Practical) shall be prescribed by respective BoS where ever is applicable.

Appendix 2: GLOSSARY OF THE TERMS:

- **Academic Credit**: An academic Credit is a unit by which the course work (theory/ practical/ training) is measured. Each course may be allotted Credits in proportion to the time expected to be devoted by the student for that course. Thus, it determines the number of hours of instructions required per week. One Credit means the standard methodology of calculating one hour of theory or one hour of tutorial or two hours of laboratory work or one week of internship per week for a duration of a semester (13-15 weeks) resulting in the award of one Credit; which is awarded by a higher educational institution on which these regulations apply.
- **Academic Bank of Credits (ABC)**: ABC is an academic service mechanism as a digital/virtual/online entity established and managed by MoE/UGC to facilitate students to become its academic account holders and paving the way for seamless student mobility between or within degree granting Higher Education Institutions (HEIs) through a formal system of Credit recognition, Credit accumulation, Credit transfers and Credit redemption to promote distributed and flexible teaching learning.
- **Academic Year**: Two consecutive (one odd + one even) semesters constitute one academic year.
- **Assessment**: It is the process of collecting, recording, scoring, describing and interpreting information about learning
- **Academic Flexibility**: It is the provision for innovative and interchangeable curricular structures to enable creative combinations of Courses/ Programmes in Disciplines of study leading to Degree / Diploma / PG Diploma/Certificate of Study offering multiple entry and multiple exit facilities in tune with National Education Policy-2020, while removing the rigid curricular boundaries and creating new possibilities of life-long learning.

- **Affiliated College**: It implies any higher education institution approved by the affiliating university on the basis of the stipulated norms and guidelines by virtue of which it provides for a course/programme of study for obtaining any qualification from a university.
- **Autonomous College**: It means any institution, whether known as such or by any other name accorded with autonomous status by the UGC upon the recommendations of the affiliating university and the State Government concerned, by virtue of which it provides for a course/programme of study with academic and innovation flexibility for obtaining any qualification from a university and which, in accordance with the Rules and Regulations of such university, is recognized as competent to provide for such course/programme of study and present students undergoing such course/programme of study for the examination leading to the award of such qualification.
- **Choice Based Credit System (CBCS)**: The CBCS provides choice for students to select from the prescribed courses (core major, electives, minor, soft skill courses etc.)
- **Code**: Each course shall bear a distinguishing code (three letters and three digits) that identifies the discipline from which it is being offered.
- **Conventional Mode of Learning**: It means a mode of providing learning opportunities through face to face interaction between the teacher and learner in regular class room environment but does not exclude supplementary instructions if any for the learner through use of online.
- **Core or Major Course**: A course, which should compulsorily be studied by the student as a requirement of core or major subject is termed as a Core Course.
- **Course**: A basic unit of education and/or training. It means a paper which is taught for at least one semester as a part of a subject and is a component of a Programme. All courses need not carry the same weightage. A collection of courses forms a Programme of study.
- **Credit Point**: It is the product of grade point and number of Credits for a course.
- **Cumulative Grade Point Average (CGPA)**: Weighted average of the grade points obtained in all courses registered by the student across semesters.
- **Elective Course**: Generally, a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/ subject of study or which provides an extended scope or which enables an exposure to some other discipline/subject/domain or nurtures the candidate's proficiency/skill is called an Elective Course.

Evaluation: It is the process of making judgments based on evidences and interpretations gathered through examination and assessment and on the basis of agreed upon criteria.

- **Foreign Higher Educational Institution**: It represents a Higher Educational Institution duly established or incorporated or recognized in a foreign country and offering academic and research programmes at the undergraduate and/or higher levels.
- **Generic Elective (GE) or Open Elective (OE) Course**: An elective course chosen generally from an unrelated discipline/subject, with an intention to seek multidisciplinary exposure is called a Generic Elective.
- **Grade Point**: Numeric weightage attached to each letter grade.
- **Grade Point Average (GPA)**: A system of calculating academic achievement based on an average, calculated by multiplying the numerical grade point received in each course by the number of Credits.
- **Graduate Attributes (GAs)**: It is a set of individually assessable outcomes that are indicative of the graduate's potential to acquire competencies in that programme.
- **Higher Education Institutions**: The Higher Education Institutions (HEIs) who are empowered to award degrees by themselves or through their affiliating universities m accordance with Section 22 of the UGC Act, 1956.
- **Lateral Entry**: Lateral entry or admission is granted to those students who have exit after award of Certification, Diploma, or a Basic Bachelor's Degree and are eligible for and desirous of re-entering into the second year/ third year/ fourth year, respectively of same Four-year multidisciplinary degree programme at any ABC registered HEI within stipulated/ permissible period of years as decided by Statutory Councils of that HEI. Lateral entry is also open to those students, if he/she has already successfully completed a multidisciplinary Four-year first degree programme and is desirous of and academically capable of pursuing another multidisciplinary Four-year first degree programme an allied subject.
- **Learning Management System (LMS)**: It means a system to keep track of delivery of e-Learning Programmes, learner's engagement, assessment, results, reporting and other related details in one centralized location
- **Learning Outcome Based Education (LOBE)**: Adherence to student-centric learning approach to measure student's performance based on pre-determined set of outcomes.
- **Letter Grade**: Index of performance resulting from the transformation of actual marks obtained by a student in a course.
- **Major Courses**: The discipline in which the student shall pursue major study in his/her Undergraduate/Master's Programme.

- **Proctored Examination**: It means the examination conducted under the supervision of approved person or technology enabled proctoring which ensures the identity of the test taker and the integrity of the test taking environment, either in pen-paper mode or in computer-based testing mode or in full-fledged online mode, as may be permissible.
- **Programme**: Programme /Programme of study means a higher education programme pursued for a degree specified by the Commission under Section 22 (3) of the UGC Act. It also refers to a collection of courses in which a student enrolls and which contributes to meeting the requirements for the awarding of one or more Certificates/ Diplomas/ Degrees.
- **Programme Education Objectives (PEOs)**: PEOs are broad statements that describes what graduates are expected to attend within few years of graduation.
- Programme Learning Outcomes (PLOs): They represent the knowledge, skills and attitudes a student should attain at the end of the programme.
- **Qualifications**: Qualifications are final 'awards' such as a Certificate, Diploma or Degree.
- Qualifications are awarded by a competent authority such as a college or university in recognition of the attainment by students of the expected learning outcomes on the successful completion of a particular programme of study. Qualifications can also signify the competence to follow an occupational practice.
- **Research Project/ Dissertation**: Project work is considered as a special course involving application of knowledge in solving / analyzing /exploring a real-life situation / difficult problem. The student undertakes research in specific areas of his Major/ Core Subject with an advisory support by a teacher/faculty member.
- **Rubric (Assessment Rubric)**: A rubric for assessment, also called a scoring guide, is a tool used to interpret and grade students on any kind of work against criteria and standards.
- **Semester Grade Point Average (SGPA)**: Performance of a student in a given semester.

- **Appendix 3: ABBREVIATIONS:**

ABC	Academic Bank of Credit
AEC	Ability Enhancement Courses
CC	Co-curricular Courses
CAT	Continuous Assessment Test
CES	Community Engagement and service
DSC	Department Specific Core
DSE	Department Specific Elective
ES	Environment Studies
FSE	Faculty Specific Elective
FP	Field projects
GE	Generic Electives
HEI	Higher Educational Institute
IFSC	Inter Faculty Specific Core
IKS	Indian Knowledge System
Lab	Laboratory
MIL	Modern Indian Language
MOOC	Massive Online Open Course
NCrF	National Credit Framework
NEP	National Education Policy
OE	Open Electives
OJT	On Job Training
Pr	Practical/Practicum
Prq	Pre-requisite Course
RM	Research Methodology
RP	Research Project
SEC	Skill Enhancement Courses
Th	Theory
UGC	University Grants Commission
VEC	Value Education Courses
VEC	Vocational Enhancement Courses
VSC	Vocational Skill Courses
VSEC	Vocational and Skill Enhancement Courses

23.0 TEACHING LEARNING SCHEME:

The Scheme of Teaching, Learning, Examination & Evaluation for all six verticals of Semester I & II of all the Under-graduate programmes of Engineering & Technology shall be as per **Appendix – 4** appended with this Direction**.**

BIBLIOGRAPHY:

1. Kulkarni R D, NEP 2020: Report on Structure and curriculum of 4 year and dual multi-disciplinary degree program with multiple entry and exit options for implementation in state universities of Maharashtra; Ministry of Higher and Technical Education, Government of Maharashtra State, October 2022.
2. UGC, New Delhi, Curriculum and Credit Framework for Undergraduate Programmes, 12 December 2022.
3. Government Resolution, Government of Maharashtra State, No. NEP/2022/ Pr. Kr. 09/ Vishi-3/Shikana dated 20 April 2023 (GR Code: 202304201925266908)
4. Government Resolution, Government of Maharashtra State, No. NEP/2022/ Pr. Kr. 105/Vishi- 3/Shikana dated 6 Dec 2022 (GR Code: 202212061843114008)
5. Government Resolution, Government of Maharashtra State, No. NEP/2022/ Pr. Kr. 09/ Vishi-3/Shikana dated 20 April 2023 (GR Code: 202212061843114008)
6. Letter issued by Directorate of Technical Education no.17/DTE/NEP/2023/168 dated 28 June 2023
7. Government Resolution, Government of Maharashtra State, No. NEP/2022/ 67/23/ TE-2 dated 4 July 2023 (GR Code: 202307041749190408)
8. UGC, New Delhi, Learning Outcomes-based Curriculum Framework for Undergraduate Education, January, 2020.

The existing Direction Nos. 42 of 2021 and 43 of 2021 of all the branches of Engineering & Technology under the Programmes in the Faculty of Science & Technology shall be repealed stage-wise and only applicable to the students who have already sought their admissions as per its provisions and shall be repealed after exhausting the chances given to the failure students of the Old Course Programme by the University.

Date: 18 /04/2025

Sd/-
(Dr.Milind Barhate)
Vice-Chancellor,
Sant Gadge Baba Amravati University,
Amravati

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Appendix-4

Sant Gadge Baba Amravati University, Amravati

Scheme of Implementation for

Four Year Undergraduate Degree Programme inEngineering and Technology

B.E. (Bachelor of Engineering), B.Tech. (Bachelor of Technology), B.Text.E. (Bachelor of Textile Engineering) and other similar undergraduate

Engineering Degree Programmes

in the faculty of

Science and Technology

ACADEMIC EVALUATION SCHEME/CREDIT SYSTEM

Year: 2024-25

(Scheme of Teaching, Learning, Examination & Evaluation w.e.f. 2024-2025 and onwards)

	Scheme for First Year Four Year Undergraduate Engineering Degree Programme Semester I/II – [Common for all branches]												
Sr No.	Course Name	Code	Course Plan per Week (Hrs.)				Credits	Theory Evaluation		Practical Evaluation		Total	ESE Time Hrs.)
			L	P	T	Hrs.		IE	ESE	INT	EXT		
	Core Courses												
1	Applied Mathematics -I (BSC)	1AL100BS	3	0	0	3	3	40	60	--	--	100	3 Hrs.
2	Engineering Physics (BSC)	1AL101BS	3	0	0	3	3	40	60	--	--	100	3 Hrs.
3	Computer Programming (ESC)	1AL102ES	3	0	0	3	3	40	60	--	--	100	3 Hrs.
4	Engineering Mechanics (ESC)	1AL103 ES	3	0	0	3	3	40	60	--	--	100	3 Hrs.
	Laboratory Courses												
5	Engineering Physics Lab (BSC)	1AL104BS	0	2	0	2	1	----	-----	25	25	50	------
6	Computer Programming Lab (ESC)	1AL105 ES	0	2	0	2	1	----	-----	25	25	50	------
7	Engineering Mechanics Lab (ESC)	1AL106 ES	0	2	0	2	1	----	-----	25	25	50	------
8	Workshop (ESC)	1AL107 ES	0	2	0	2	1	----	-----	25	25	50	------
	Vocational and Skill Enhancement Courses (VSEC)												
9	Technical Department Specific (*)	I 108 VS	1	2	0	3	2	-----	------	50	----	50	-------
	Ability Enhancement Courses (AEC)												
10	Professional Communication	1AL109 AE	1	2	0	3	2	-------	-------	25	25	50	-------
	Co-curricular Course (CC)												
11	Co-curricular Course (CC)	1AL110 CC	0	4	0	4	2	-------	-------	50	-------	50	-------
	TOTAL		14	16	0	30	**22**					**750**	

Notes: (1) L: Lecture P: Practical T: Tutorial MSE: Mid Semester Exam ESE: End Semester Exam IE: Internal Evaluation INT: Internal EXT: External.

	Scheme for First Year Four Year Undergraduate Engineering Degree Programme Semester I/II – [Common for all branches]												
Sr No.	**Course Name**	**Code**	**Course Plan per Week (Hrs.)**				**Credits**	**Theory Evaluation**		**Practical Evaluation**		**Total**	**ESE Time Hrs.)**
			L	**P**	**T**	**Hrs.**		**IE**	**ESE**	**INT**	**EXT**		
	Core Courses												
1	Applied Mathematics -II (BSC)	2AL111 BS	3	0	0	3	3	40	60			100	3 Hrs.
2	Engineering Chemistry (BSC)	2AL112 BS	3	0	0	3	3	40	60			100	3 Hrs.
3	Basic Electrical Engineering (ESC)	2AL113 ES	3	0	0	3	3	40	60			100	3 Hrs.
4	Engineering Graphics (ESC)	2AL114 ES	2	0	0	2	2	40	60			100	3 Hrs.
	Laboratory Courses												
5	Engineering Chemistry Lab (BSC)	2AL115 BS	0	2	0	2	1			25	25	50	
6	Basic Electrical Engineering Lab (ESC)	2AL116 ES	0	2	0	2	1			25	25	50	
7	Engineering Graphics Lab (ESC)	2AL117 ES	0	2	0	2	1			25	25	50	
	Vocational and Skill Enhancement Courses (VSEC)												
8	**Technical Department Specific (*)**	2 118 VS	1	2	0	3	2			50	-	50	
	Programme Core Course (PCC)												
9	(**) Programme Core Course (PCC)	2 119 PC	2	0	0	2	2	20	30			50	2.00 Hrs.
	Indian Knowledge System (IKS)												
10	Indian Traditional Knowledge	2AL120 IK	2	0	0	2	2	20	30			50	2.00 Hrs.
	Co-curricular Course (CC)												
11	Co-curricular Course (CC)	2AL121 CC	0	4	0	4	2			50	-	50	
	TOTAL		16	12	0	28	**22**					**750**	

Notes: (1) L: Lecture P: Practical T: Tutorial MSE: Mid Semester Exam ESE: End Semester Exam IE: Internal Evaluation INT: Internal EXT: External

Sample Scheme for Multiple Entry and Exit

Exit option -1 (L5): Award of UG Certificate in Major with 44 credits and an additional 8 credits			
Exit Courses			
1	Electronics Servicing and Maintenance	**Online/offline certification Course**	**8**
2	Assembly & Maintenance of Personal Computer		**8**
3	One Month Internship at Industry		**8**

Board of Studies in each subject is expected to specify different courses (combined of total 08 credits for the award of UGCertificate related with the major of respective discipline.

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The long forms of the Abbreviations in the shceme of Semester I/II common to all the branches of Engineering & Technology are as under :

(I) AL- All (Common for all branches) BS- Basic Science Course ES- Engineering Science Course VS- Vocational & Skill Enhancement Course CC – Co Curricular Course PC-Programme Core Course AE- Ability Enhancement Course IK-Indian Knowledge System.

(II) (*) Technical Department Specific (VSEC) : Semester I Branch wise subjects under the vertical **Vocational and Skill Enhancement Courses** (VSEC) are as under:
(i) Civil Engg (CE): Surveying Skills Lab. (ii) **Mechanical Engg (MF)**: Design Thinking & Idea Lab. (iii) **Electronics & Tele. Engg**. (ET): Electrical Measurements & Measuring Instruments lab.
(iv) [CSE/I.T. A.I.D.S./CSE(D.S.)] (CS) : Introduction to Web Technology (v) **Electrical/ Electrical (Electronics & Power**) {EE/ET}: Electrical Workshop
(vi) Textile Tech.: Fabric Structure & Design (TX) – I lab. (vii) **Chemical Engg.(CH) / Chemical Technologyb(CT)** : Basics of Chemical Processes.

(III) (**) Technical Department Specific (VSEC): Semester II Branch wise subjects under the vertical **Vocational and Skill Enhancement Courses** (VSEC) are as under:

(i) Civil (CE) : Safety Practices at Construction Cite (ii)**Mechanical (MF)** : Computer aided Design & Drafting (iii) **Extc Engg (ET)** : Electronic Workshop
(iv) CSE/I.T/A.I.D.S. / CSE (DS) .: Computer Hardware & Networking (v) **Electrical/ Electrical (Electronics & Power**) {EE/ET}: Electronics Workshop
(vi) Textile (TX): Fabric Structure & Design- II (vii) **Chemical (CH) / Chemical Technology (CT)** : Computer Applications for Chemical Engineering.

(IV) (+) Programme Core Course (PCC): Branch wise subjects under the vertical **Programme Core Course** are as under:

(i) Civil: Fundamentals of Civil Engg. **(ii) Mech**: Elements of Mechanical Engg. **(iii) Extc Engg**.: Introduction to Digital Electronics
(iv) CSE/I.T.: Computer Fundamentals **(v) Electrical Engg. / Electrical (Electronics & Power) Engg**.: Generation of Electrical Energy
(vi) Textile: Introduction to Textile Materials & Products (**Practical**) **(vii) Chemical Engg. (CH) / Chemical Technology (CT)** : Introduction to Chemical Engineering

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Scheme for First Year Four Year Undergraduate Engineering Degree Programme [NEP-2020]
Semester – I/II – [Common for all branches of Engg. & Tech.]

SN	Course Name	Code	Course Plan per Week (Hrs.)				Credits	Theory Evaluation				Theory (Total)		Practical Evaluation				Practical (Total)		ESE Time (Hours)
								External		Internal				External		Internal				
			L	P	T	Hrs.		Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	
	Core Courses																			
1	Applied Mathematics -I (BSC)		3	0	0	3	3	**60**	**18**	**40**	**12**	**100**	**40**	.....	.....	....	....	....	...	3 Hrs.
2	Engineering Physics (BSC)		3	0	0	3	3	60	18	40	12	100	40	.....	.....	....	....	....	...	3 Hrs.
3	Computer Programming (ESC)		3	0	0	3	3	60	18	40	12	100	40	.....	.....	....	....	....	...	3 Hrs.
4	Engineering Mechanics (ESC)		3	0	0	3	3	60	18	40	12	100	40	.....	.....	....	....	....	...	3 Hrs.
	Laboratory Courses																			
5	Engineering Physics (BSC)		0	2	0	2	1	.....	.....	....	....	....	...	**25**	**10**	**25**	**10**	**50**	**25**	
6	Computer Programming (ESC)		0	2	0	2	1	.....	.....	....	....	....	...	25	10	25	10	50	25	
7	Engineering Mechanics (ESC)		0	2	0	2	1	.....	.....	....	....	....	...	25	10	25	10	50	25	
8	Workshop (ESC)		0	2	0	2	1	.....	.....	....	....	....	...	25	10	25	10	50	25	
	Vocational and Skill Enhancement Courses (VSEC)																			
9	Technical Department Specific		1	2	0	3	2									50	--	50	25	
	Ability Enhancement Courses (AEC)																			
10	Professional Communication		1	2	0	3	2							25	10	25	10	50	25	
	Co-curricular course **(CC)**																			
11	Co-curricular Course		0	4	0	4	2									50	--	50	25	
	TOTAL		14	16	0	30	**22**					**400**	**160**					**350**	**175**	

Scheme for First Year Four Year Undergraduate Engineering Degree Programme [NEP-2020]
Semester – I / II – [Common for all branches of Engg. & Tech.]

SN	Course Name	Code	Course Plan per Week (Hrs.)				Credits	Theory Evaluation				Theory (Total)		Practical Evaluation				Practical (Total)		ESE Time (Hours)
								External		Internal				External		Internal				
			L	P	T	Hrs.		Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	
	Core Courses																			
1	Applied Mathematics -II (BSC)		3	0	0	3	3	60	18	40	12	100	40	---	---	--	--	--	--	3 Hrs.
2	Engineering Chemistry (BSC)		3	0	0	3	3	60	18	40	12	100	40	---	---	--	--	--	--	3 Hrs.
3	Basic Electrical Engineering (ESC)		3	0	0	3	3	60	18	40	12	100	40	---	---	--	--	--	--	3 Hrs.
4	Engineering Graphics (ESC)		2	0	0	2	2	60	18	40	12	100	40	---	---	--	--	--	--	3 Hrs.
	Laboratory Courses																			
5	Engineering Chemistry (BSC)		0	2	0	2	1	---	---	--	--	--	--	25	10	25	10	50	25	
6	Basic Electrical Engineering (ESC)		0	2	0	2	1	---	---	--	--	--	--	25	10	25	10	50	25	
7	Engineering Graphics (ESC)		0	2	0	2	1	---	---	--	--	--	--	25	10	25	10	50	25	
	Vocational and Skill Enhancement Courses (VSEC)																			
8	Technical Department Specific		1	2	0	3	2							--	--	50	-	50	25	
	Programme Core Course (PCC)																			
9	Programme Core Course		1	2	0	3	2	30	12	20	08	50	20	--	--	--	--	--	2 Hrs	
	Indian Knowledge System (IKS)																			
10	Indian Traditional Knowledge		2	0	0	2	2	30	12	20	08	50	20	--	--	--	--	--	2 Hrs	
	Co-curricular Course (CC)																			
11	Co-curricular Course		0	4	0	4	2	---	---	--	--	--	--	--	-	50	--	50	25	
	TOTAL		14	16	0	30	**22**					**400**	**160**					**350**	**175**	