

NORTH MAHARASHTRA UNIVERSITY,

JALGAON (M.S.)

Bachelor of Engineering (B.E.)

Faculty of Science and Technology



'A' Grade
NAAC Re-Accredited
(3rd Cycle)

Rules and Regulations Relating to
Degree of Bachelor of Engineering (B.E.)

(As per AICTE Guidelines)

w.e.f. 2018 – 19

Rules and Regulations Relating to Degree of Bachelor of Engineering (B.E.)

(To Be Introduced from Academic Year, 2018-19)

Degree Course with Effect from Academic Year 2018-19

(These rules and regulations will supersede earlier rules and regulations)

Preamble:

The economic progress of a country needs growth in technical talent. The growth is governed by quality technical education. To improve the quality technical education in India the Government has taken initiatives to enrich curriculum for engineering education in India. As part of this initiative All India Council for Technical Education (AICTE) has developed a model curriculum for undergraduate courses in engineering with a view to make the engineering students well equipped and updated with latest technologies and industrial requirements.

With due consideration of the model curriculum and the importance of wide spectrum of engineering and technology disciplines, these rules, regulations and curriculum of undergraduate courses are prepared after detailed deliberations, brain storming sessions, etc. of senior experts from all engineering colleges in the NMU region considering the guide lines of MHRD/UGC/AICTE/NMU.

Features of the CGPA system:

1) The degree course B.E. being run under the faculty of Science and Technology shall be of 37 credits for 1st, 41 credits for 2nd, 42 credits for 3rd year and 40 credits for final year respectively. There shall be total 160 credits allotted for 4-year degree course.

Note: For lateral entry admitted students (Diploma and B.Sc. students), total No. of credits allotted shall be 123. But B.Sc. student has to complete credits of courses based on Engineering Graphics of first year in addition to 123 credits of Second year to final year.

2) The credits shall be awarded as follows except for some special subjects:

- 1 credit for 1-hour theory lecture/ Tutorial
- ½ credit for 1-hour practical.

3) The batch size for practical for B.E. shall be as follows:

- First year & Second year 20 to 23 students

- Third year & final year: 15 to 20 students

4) The batch size for T.E. Project and B. E. Project shall be of 02 to 05 students. Each teacher can guide maximum 02 groups of T.E. projects and 04 groups of B.E. projects.

Course Title: Bachelor of Engineering

Abbreviation: B.E.

Type of Course: A four-year degree course divided into eight semesters with two semesters per year.

Pattern: Semester

Nomenclature of Semesters: The revised Rules, Regulations and Syllabus for four year courses shall be introduced gradually as follows:

No	Year	Semester	With effect from
1	First Year	I & II	2018-19
2	Second Year	III & IV	2019-20
3	Third Year	V & VI	2020-21
4	Final Year	VII & VIII	2021-22

Award of the Degree: Degree shall be awarded to students earning credits of all eight semesters, i.e. 160 Credits

Note: For lateral entry admission (Diploma and B.Sc. students), minimum number of credits shall be 123.

Duration of Semester: Each Semester shall be normally minimum of 14weeks' duration for class room teaching / laboratory work.

Definitions:

University: North Maharashtra University, Jalgaon.

College / Institute: Any college / Institute conducting B.E course and affiliated to North Maharashtra University, Jalgaon.

State Government: Government of Maharashtra.

Admission Authority: Any authority to conduct admission process as prescribed by Government of Maharashtra.

DTE: Directorate of Technical Education, Maharashtra State.

Rule 1: B.E. entry levels into the course, eligibility criteria, admission authority and procedures for entry levels into the course shall be at the beginning of the Semester – I for 12th

pass students or at the beginning of the Semester – III for B. Sc. or Diploma students. Eligibility criteria, admission authority and procedures shall be decided by Government of Maharashtra / Directorate of Technical Education and procedure shall be as per directions of admission authority prevailing at the time of admission.

Rule 2: B.E. Examinations

Rule 2.1: The Examination conducting authority shall be North Maharashtra University, Jalgaon.

Rule 2.2: The examination at the end of each semester shall be normally held in November / December and April / May in each academic year.

Rule 3: Attendance Rule and Detention Rule

Rule 3.1: The student will not be allowed to appear for the examinations i.e. he /she shall be detained if he / she do not attend minimum 75 % classes of theory, practical etc.

The attendance rules will be governed by DTE rules and relevant ordinance of university as applicable at that time.

Rule 3.2: If a candidate is detained in first term of any year, he / she will not be allowed to register for second term. He / she will have to register for the same in succeeding year(s).

If a candidate is detained in second term of any year, he / she will have to register for the second term of succeeding year(s).

Rule 4: Passing Criteria for Courses

Rule 4.1: For the End Semester Examination (ESE) in Theory courses, minimum passing marks are 24 out of 60. Marks obtained in Internal Sessional Examinations (ISE) are to be added to marks obtained in ESE, if he/she will obtain 24 marks out of 60 marks in ESE of the respective theory course. 40 marks (ESE plus ISE) out of 100 marks (ESE plus ISE) are to be secured by the student to pass the respective theory course.

Rule 4.2: In ESE and ICA of all courses other than theory, minimum 40 % of total marks shall be required for passing.

Rule 4.3: For ESE re-examination of failed student (secured less than 24 marks) is to be conducted in consecutive semester by the university.

Rule 5: Internal Sessional Examination (ISE)

To ensure uniform attention of the students of their work throughout each semester of their study, TWO Internal Sessional Examinations (ISE) shall be conducted in each semester. Each ISE is for 20 marks. Conducting authority shall be Institute where candidate is admitted. The institutional examination committee shall consist of Principal as a Chairman and HOD from

each department. In addition, Departmental Examination Committee shall consist of HOD as a coordinator and 1 or 2 teachers nominated by the Principal. Internal Sessional examinations (ISE-I & ISE-II) shall normally be conducted after completion of 40% and 80% syllabus respectively. For ISE, minimum passing marks are 16 out of 40. Re-examination of ISE for failed students is to be conducted by the concern college for 40 marks and 2 hours duration on complete syllabus of the theory subject at the end of consecutive semesters. The institute must submit the ISE marks at the end of semester to the university.

If the candidate remains, absent for the ISE the candidate shall be just treated as not appeared for the test securing zero marks. The ISE marks obtained by the candidate shall be added to the marks obtained by the candidate in End Semester Examination (ESE) conducted by the University as per Rule 4.1.

Rule 6: Internal Continuous Assessment (ICA)

ICA shall be based on continuous evaluation of student's performance throughout semester.

Rule 7: Eligibility Criteria for Admission in Next Year

Rule 7.1: Student has to earn minimum 25 Credits in F.E. for an academic year to be eligible for admission to S.E.

Rule 7.2: Student shall be admitted in T.E. provided he / she have earned all credits of F.E. and minimum 28 credits of S.E. Similarly, the student shall be admitted in B.E. provided he / she have earned all credits of S.E. and minimum 28 credits of T.E.

Note: For laterally admitted B.Sc. students, credits against course 'Engineering Graphics' of F.E. shall not be considered while deciding eligibility for T.E. admission. These students shall be allowed for admission in B.E. only after earning credits of these courses.

Rules 7.3: If student does not complete ICA of any course, he / she shall be awarded 'I' (Incomplete) grade. In case of 'I' or 'F' grade in ICA, student shall not be allowed to appear for ESE (Practical / Oral) of the same course, if there is an ESE for that course. In all cases, if the student secures 'I' or 'F' grade, he / she have to register for the same course in succeeding semester when the same course is offered. However, if the institute offers the same course in next semester, the student can register for the same in the very next semester also.

Rule 7.4: If a student secures 'F' or 'I' grade in any course, his / her SGPA and CGPA shall not be declared till he / she earns the credit of that course.

Rule 8: Calculation of SGPA and CGPA

Semester Grade Point Average (SGPA):

The performance of a student in a semester is indicated by a number called SGPA. SGPA is the

weighted average of the grade points obtained in all courses registered by the student during the semester. It shall be calculated as follows:

$$\text{SGPA} = \frac{\sum_{i=1}^n C_i P_i}{\sum_{i=1}^n C_i}$$

where,

C_i = the number of credits earned in the i^{th} course of a semester for which SGPA is to be calculated

P_i = grade point earned in the i^{th} course.

$i = 1, 2, 3, \dots, n$, where 'n' represents the number of courses in which a student is registered in that semester.

The SGPA is rounded up to two decimal places.

Cumulative Grade Point Average (CGPA):

Up-to-date assessment of the overall performance of a student from the time of his / her first registration is obtained by calculating a number called Cumulative Grade Point Average (CGPA), which is weighted average of the grade points obtained in all courses registered by the student since he/she entered the institute. It shall be calculated as follows:

$$\text{CGPA} = \frac{\sum_{j=1}^m C_j P_j}{\sum_{j=1}^m C_j}$$

Where,

C_j = The number of credits offered in the j^{th} course up to the semester for which CGPA is to be calculated.

P_j = Grade point earned in the j^{th} course.

$j = 1, 2, 3, \dots, m$, where 'm' represent the number of courses in which a student is registered up to the semester for which the CGPA is to be calculated.

The CGPA is rounded up to two decimal places. A letter grade lower than E in a course shall not be taken into consideration for calculation of CGPA.

Rule 8.1: Conversion of CGPA to Percentage Marks and Vice-versa

$$\text{CGPA} = (\% \text{ Marks} + 7.5) / 10$$

$$\text{Percentage Marks} = (\text{CGPA} - 0.75) * 10 \%$$

Rule 9: CGPA Improvement

A student shall be allowed to improve his / her CGPA by reappearing for the courses from VII and / or VIII Semesters of B.E. as per prevalent policy of the university.

Rule 10: Methodology for award of Grades

Conversion of course marks into Grades shall be done as per table given below:

Sr. No.	Marks Range in %	Grade	Grade Points
1	≥ 90	A+	10
2	80 - 89	A	9
3	70 - 79	B	8
4	60 - 69	C	7
5	50 - 59	D	6
6	40 - 49	E	5
7	Less than 40	F	0

Rule 11: Mandatory Courses

In addition to academic credits, student has to complete Mandatory courses (Non-Credit) given below.

1. Environmental Studies
2. Induction Program
3. Constitution of India
4. Essence of Indian Traditional Knowledge

Rule 11.1.: It is compulsory to complete above Mandatory courses for all admitted students in the duration of degree course.

- a) ESE for Environmental Science shall be conducted as per the prevalent rules of the university.
- b) College should arrange workshop/ Training/ Seminar for the above courses (Sr. No. 2 to 4).

Rule 11.2.: Mandatory non-credit courses will be graded as Pass or Fail (P/F). Thus the grades obtained will not affect the grade point average. However, they will appear on the grade sheet.

Rule 12: Credit Groups

The syllabus of all branches shall be divided into 8 groups with curriculum credit distribution as given in the following table:

Sr. No.	GROUP	Category	Breakup of Credits (Total 160)
1	A	Humanities and Social Sciences including Management Courses (HSMC)	10
2	B	Basic Science Courses (BSC)	26
3	C	Engineering Science Courses including workshop, drawing, basics of electrical/mechanical/computer etc. (ESC)	26
4	D	Professional Core Courses (PCC)	53
5	E	Professional Elective Courses relevant to chosen specialization/branch (PEC)	18
6	F	Open subjects – Electives from other technical and /or emerging subjects (OEC)	12
7	G	Project work, seminar and internship in industry or appropriate work place/ academic and research institutions in India/abroad (PROJ)	15
8	H	Mandatory Courses (MC) [Environmental Sciences, Induction program, Indian Constitution, Essence of Indian Traditional Knowledge]	
Total			160

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Mandatory Course Outline

w.e.f. 2018 – 19

Environmental Studies						
COURSE OUTLINE						
Course Title:	Environmental Studies	Short Title:	EVS	Course Code:	Non Credit	
Course description:						
The course aims to percolate the importance of environmental science and environmental studies.						
COURSE CONTENT						
Environmental Studies		Semester:		IV		
		Examination scheme				
		End Semester Exam (ESE):			80 marks	
		Duration of ESE:			03 hours	
		Internal Continuous Assessment (ICA):			20 marks	
Unit-I:		No. of Lectures: 02 Hours				
Multidisciplinary nature of environmental studies						
Definition, scope and importance Need for public awareness.						
Unit-II:		No. of Lectures: 08 Hours				
Natural Resources :						
Renewable and non-renewable resources						
Natural resources and associated problems.						
<ul style="list-style-type: none"> a. Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. b. Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. c. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. d. Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. e. Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies. f. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. 						
<ul style="list-style-type: none"> • Role of an individual in conservation of natural resources. • Equitable use of resources for sustainable lifestyles. 						
Unit-III:		No. of Lectures: 06 Hours				
Ecosystems						
<ul style="list-style-type: none"> • Concept of an ecosystem. • Structure and function of an ecosystem. • Producers, consumers and decomposers. • Energy flow in the ecosystem. • Ecological succession. 						

<ul style="list-style-type: none"> • Food chains, food webs and ecological pyramids. • Introduction, types, characteristic features, structure and function of the following ecosystem :- <ul style="list-style-type: none"> a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) 		
Unit-IV:	No. of Lectures: 08 Hours	
Biodiversity and its conservation		
<ul style="list-style-type: none"> • Introduction – Definition: genetic, species and ecosystem diversity. • Biogeographic classification of India • Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values • Biodiversity at global, National and local levels. • India as a mega-diversity nation • Hot-spots of biodiversity. • Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. • Endangered and endemic species of India • Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity. 		
Unit-V:	No. of Lectures: 08 Hours	
Environmental Pollution		
Definition		
<ul style="list-style-type: none"> • Cause, effects and control measures of :- <ul style="list-style-type: none"> a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. Nuclear hazards • Solid waste Management: Causes, effects and control measures of urban and industrial wastes. • Role of an individual in prevention of pollution. • Pollution case studies. • Disaster management: floods, earthquake, cyclone and landslides. 		
Unit-VI:	No. of Lectures: 07 Hours	
Social Issues and the Environment		
<ul style="list-style-type: none"> • From Unsustainable to Sustainable development • Urban problems related to energy 		

- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case Studies
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear
- Accidents and holocaust. Case Studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and control of Pollution) Act
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation.
- Public awareness.

Unit–VII:

No. of Lectures: 06 Hours

Human Population and the Environment

- Population growth, variation among nations.
- Population explosion – Family Welfare Program
- Environment and human health.
- Human Rights.
- Value Education.
- HIV/AIDS.
- Women and Child Welfare.
- Role of Information Technology in Environment and human health.
- Case Studies.

Unit–VIII:

No. of Lectures:

Field work

- Visit to a local area to document environmental assets, river / forest / grassland / hill / mountain
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural
- Study of common plants, insects, birds.
- Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours)

Guide lines for ICA:

Students must submit ICA in the form of journal. Each assignment should be well documented. Faculty in charge will assess the assignments continuously and grade or mark each assignment on completion date

declared for each assignments.

Reference Books:

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11. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.
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Induction Program

The Induction Program is to make the newly joined students feel comfortable, sensitize them towards exploring their academic interests and activities, reducing competition and making them work for excellence, promote bonding within them, build relations between teachers and students, give a broader view of life, and building of character.

A 3-week long induction program for the UG students entering the institution, right at the start, should be conducted. The institute should suitably schedule the activities of the program. Normal classes start only after the induction program is over. The following are the activities under the induction program in which the student would be fully engaged throughout the day for the entire duration of the program.

1. Physical Activity (sports & games, gardening, tree plantation and Yoga)

This would involve a daily routine of physical activity with games and sports. It would start with light physical exercise or yoga.

There would also be games at suitable times according to the local climate. These would help develop team work. Each student should pick one game and learn it for three weeks. There could also be gardening, tree plantation or other suitably designed activity where labour yields fruits from nature.

2. Creative Arts

Every student would choose one skill related to the arts whether visual arts or performing arts. Examples are painting, sculpture, pottery, music, dance etc. The student would pursue it every day for the duration of the program.

These would allow for creative expression. It would develop a sense of aesthetics and also enhance creativity which would, hopefully, flow into engineering design later.

3. Universal Human Values

It gets the student to explore oneself and allows one to experience the joy of learning, stand up to peer pressure, take decisions with courage, be aware of relationships with colleagues and supporting staff in the hostel and department, be sensitive to others, etc.

Need for character building has been underlined earlier. A module in Universal Human Values provides the base.

Methodology of teaching this content is extremely important. It must not be through do's and don'ts, but get students to explore and think by engaging them in a dialogue. It is best taught through group discussions and real life activities rather than lecturing. The role of group discussions, however, with clarity of thought of the teachers cannot be over emphasized. It is essential for giving exposure, guiding thoughts, and realizing values.

Suggested activities include:

- Motivational lectures
- Group Discussions/activities

- Case Study
- Games/Stimulation Exercises
- Role-Playing
- Mindfulness training.

The teachers must come from all the departments rather than only one department or from outside of the Institute.

Discussions would be conducted in small groups of about 20 students with a faculty mentor each. It is to open thinking towards the self. Universal Human Values discussions could even continue for rest of the semester as a normal course, and not stop with the induction program.

Besides drawing the attention of the student to larger issues of life, it would build relationships between teachers and students which last for their entire 4-year stay and possibly beyond.

4. Literature & Media

The objective is to inculcate the habit of active (or interactive) consumption of the best content available in literature, films and media, rather than passive consumption. Engineering students should be encouraged to read the best of the world literature and watch the best of the world cinema (regardless of their viewpoints). They should also be made aware that news is best collected from different sources, which don't necessarily agree, so that they can understand the true meaning of democracy and also learn to form educated opinions about various topics based on the information from diverse sources.

They will also have to learn how to find out the degree of reliability of different sources. One way to achieve this is to conduct workshops where students, aided by invited experts, read news from different sources, watch the best cinema and read or watch different media sources. They can then discuss these with their peers and with the invited experts and learn to talk peacefully with people of different viewpoints, as well as learn to form their own opinions. They should then be encouraged to write about their takeaways from these discussions or their opinions and their reasons for forming those opinions.

Literary activity would encompass reading, writing and possibly, debating, enacting a play etc.

Group Reading (saamuhik vaachan) of classics will make group to read one or two books. An hour may be fixed for a small group for a particular classic. Group sits and each person reads aloud (if possible with proper modulation) taking turns. If serious books on philosophy etc. are taken up a discussion can be held after every idea is complete.

5. Proficiency Modules

This period can be used to overcome some critical lacunas that students might have, for example, English, computer familiarity etc. These should run like crash courses, so that when normal courses start after the induction program, the student has overcome the lacunas substantially. We hope that problems arising due to lack of English skills, wherein students start lagging behind or failing in several subjects, for no fault of theirs, would, hopefully, become a thing of the past.

6. Lectures by Eminent People

To be good citizens and human beings, as well as to be better engineers or scientists, they should be exposed to other diverse areas. For this purpose, renowned experts and practitioners from other areas of science, engineering, social sciences or arts should be invited to colleges to give lectures specially targeted at engineering students to help open up their minds. These lectures should not be of the kind one gets in classrooms, but more like invited talks or tutorials at research conferences, or lectures based on personal experiences of these renowned experts and practitioners.

This period can be utilized for lectures by eminent people, say, once a week. It would give the students exposure to people who are socially active or in public life.

7. Visits to Local Area

A couple of visits to the landmarks of the city, or a hospital or orphanage could be organized. This would familiarize them with the area as well as expose them to the under privileged.

This may also involve study of archeological sites, monuments and buildings, museums and local traditions. This shall also include visits to hospitals, orphanages, police station, courts, trauma centers, consumer forums so that they get exposed to different facets of societal problems.

8. Familiarization to Dept./Branch & Innovations

The students should be told about different method of study compared to coaching. They should be told about what getting into a branch or department means what role it plays in society, through its technology. They should also be shown the laboratories, workshops & other facilities.

Schedule:

The activities during the 3-week long Induction Program would have an Initial Phase, a Regular Phase and a Closing Phase. The Initial and Closing Phases would be two days each.

Initial Phase includes Academic registration, Orientation, Visit to respective departments, Director's address, Interaction with parents, Mentor-mentee groups - Introduction within group etc.

In Regular Phase there would be regular program to be followed every day. It includes Physical Activity, Creative Arts / Universal Human Values, Games / Special Lectures, Informal interactions etc. Non-Daily Activities include Familiarization to Department/Branch & Innovations, Visits to Local Area, Lectures by Eminent People, Literary, Proficiency Modules etc.

Closing Phase includes Discussions and finalization of presentation within each group, Presentation by each group in front of 4 other groups besides their own.

Constitution of India

Basic features and fundamental principles

The Constitution of India is the supreme law of India. Parliament of India cannot make any law which violates the Fundamental Rights enumerated under the Part III of the Constitution. The Parliament of India has been empowered to amend the Constitution under Article 368, however, it cannot use this power to change the “basic structure” of the constitution, which has been ruled and explained by the Supreme Court of India in its historical judgments. The Constitution of India reflects the idea of “Constitutionalism” – a modern and progressive concept historically developed by the thinkers of “liberalism” – an ideology which has been recognized as one of the most popular political ideology and result of historical struggles against arbitrary use of sovereign power by state. The historic revolutions in France, England, America and particularly European Renaissance and Reformation movement have resulted into progressive legal reforms in the form of “constitutionalism” in many countries. The Constitution of India was made by borrowing models and principles from many countries including United Kingdom and America.

The Constitution of India is not only a legal document but it also reflects social, political and economic perspectives of the Indian Society. It reflects India’s legacy of “diversity”. It has been said that Indian constitution reflects ideals of its freedom movement, however, few critics have argued that it does not truly incorporate our ancient legal heritage and cultural values. No law can be “static” and therefore the Constitution of India has also been amended more than one hundred times. These amendments reflect political, social and economic developments since the year 1950. The Indian judiciary and particularly the Supreme Court of India has played an historic role as the guardian of people. It has been protecting not only basic ideals of the Constitution but also strengthened the same through progressive interpretations of the text of the Constitution. The judicial activism of the Supreme Court of India and its historic contributions has been recognized throughout the world and it gradually made it “as one of the strongest court in the world”.

Course content

1. Meaning of the constitution law and constitutionalism
2. Historical perspective of the Constitution of India
3. Salient features and characteristics of the Constitution of India
4. Scheme of the fundamental rights
5. The scheme of the Fundamental Duties and its legal status
6. The Directive Principles of State Policy – Its importance and implementation
7. Federal structure and distribution of legislative and financial powers between the Union and the States
8. Parliamentary Form of Government in India – The constitution powers and status of the President of India
9. Amendment of the Constitutional Powers and Procedure
10. The historical perspectives of the constitutional amendments in India
11. Emergency Provisions: National Emergency, President Rule, Financial Emergency
12. Local Self Government – Constitutional Scheme in India
13. Scheme of the Fundamental Right to Equality
14. Scheme of the Fundamental Right to certain Freedom under Article 19
15. Scope of the Right to Life and Personal Liberty under Article 21

Essence of Indian Knowledge Tradition

Essence of Indian Knowledge Tradition Pt-I

भारतीयविद्यासार - 1

Course objective

The course aims at imparting basic principles of thought process, reasoning and inferencing. Sustainability is at the core of Indian Traditional knowledge Systems connecting society and nature. Holistic life style of yogic science and wisdom capsules in Sanskrit literature are also important in modern society with rapid technological advancements and societal disruptions. Part-I focuses on introduction to Indian Knowledge Systems, Indian perspective of modern scientific world-view, and basic principles of Yoga and holistic health care system.

Course Contents

- Basic structure of Indian Knowledge System: अष्टादशविद्या -ऋग्वेद, ऋजुवेद (आयुर्वेद, धनुर्वेद, गन्धर्ववेद, स्वापत्य आदि) ऋग्वेदांग (शिक्षा, कल्प, निरुक्त, व्याकरण, ज्योतिष, छंद) ऋ उपाङ्ग (धर्मशास्त्र, मीमांसा, पुराण, तर्कशास्त्र)
- Modern Science and Indian Knowledge System
- Yoga and Holistic Health care
- Case studies

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- Swami Jitatmanand, *Holistic Science and Vedant*, Bharatiya Vidya Bhavan
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- Fritzof Capra, *The Wave of life*
- VN Jha (Eng. Trans.), *Tarkasangraha of Annam Bhatta*, International Chinmay Foundation, Valliarnad, Arnakulam
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Pedagogy: Problem based learning, group discussions, collaborative mini projects.

Outcome: Ability to understand, connect up and explain basics of Indian traditional knowledge in modern scientific perspective.

Essence of Indian Knowledge Tradition-Pt-2

भारतीयविद्यासार - 2

Course objective

The course aims at imparting basic principles of thought process, reasoning and inferencing. Sustainability is at the core of Indian Traditional Knowledge Systems connecting society and nature. Holistic life style of yogic science and wisdom capsules in Sanskrit literature are also important in modern society with rapid technological advancements and societal disruptions. Part-2 focuses on Indian philosophical traditions, Indian linguistic Tradition, and Indian artistic tradition.

Course Contents

- Philosophical Tradition (सर्वदर्शन)-न्याय, वैशेषिक, सांख्य, योग, मीमांसा, वेदान्त, चार्वाक, जैन, बौद्ध
- Indian Linguistic Tradition (Phonology, morphology, syntax and semantics)
- Indian Artistic Tradition - चित्रकला, मूर्तिकला, वास्तुकला, स्थापत्य, संगीत, नृत्यएवंसाहित्य
- Case studies

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Pedagogy: Problem based learning, group discussions, collaborative mini projects.

Outcome: Ability to understand, connect up and explain basics of Indian traditional knowledge in modern scientific perspective.