Curriculum Frame Work For Four Year Undergraduate Programme (FYUGP)/
Five Year Integrated Master Programme (FYIMP)
(as per the NEP – 2020)

Arts – (Social Sci & Humanities), Science

Central University of Jharkhand
Ranchi, Jharkhand
India

Curricular Frame Work – Credit Distribution

1. Introduction:

The National Education Policy (NEP) – 2020 (hereafter referred as NEP or Policy) envisages new and forward looking vision for Higher Education system. The policy envisions several key aspects including more interdisciplinary undergraduate education, offering the medium of instruction of programme in Indian languages and revamping curriculum, pedagogy, assessment, and students support for enhanced student experience. The CBCS (Choice Base Credit System) and the LOCF (Learning Outcome based Curriculum Framework) has been given greater emphasis for innovation and flexibility. A criterion based grading system to assesses students achievement is based on the learning goals for each programme. Fundamental principles for guiding the curricular aspects are based on:

a. Unique capabilities of each students to promotes holistic development.
b. Flexibility to choose learning trajectories and programmes.
c. Multidisciplinary and holistic education.
d. Emphasis on conceptual understanding.
e. Extensive use of technology
f. Diversity and inclusion of local context in all curricula, pedagogy and policy
g. A rootedness and pride in India, its rich diverse ancient and modern culture and knowledge system and tradition.

The present Curriculum Framework - Credit distribution for Four Year Undergraduate Programme (FYUGP) and Five-year Integrated Master Programme (FYIMP) for the Central University of Jharkhand has been prepared taking into account draft National Higher Education Qualification Framework (NHEQF) and the draft Curriculum Framework and Credit System for the Four-Year Undergraduate Programme. Accordingly, the draft of Curriculum Framework for FYUGP/FYIMP and the Credit System prepared under the provisions of NEP-2020, intended to be implemented from Academic Year 2022-23 in Central University of Jharkhand. Based on NEP-2020, the Undergraduate degree programme shall be of 4 year duration and Integrated Master programme shall be of 5 year duration with multiple entry and exit points and re-entry options with appropriate certification.

2. Objective and Salient Features of FYUGP/FYIMP:

Based on NEP, the present curricular aspects objectively highlight certain fundamental principles that would guide/direct bearing on various components such as:

a. Multi-disciplinary and holistic education across science, social science, arts, humanities and sports.
b. Integrating credits in three-dimensional learning, i.e., Academics, Vocational Skills and relevant experiential learning.

c. High quality education integrated with effective skills to reap the demographic dividend.
d. Multiple entry-multiple exit pathway.
e. Curricular structures – creative combinations of disciplines
f. Learning trajectory and programs with various career choices, including options for mid-way course correction/modification.
g. Internationalization of education through provision of credit transfer.
h. Promoting exchange with National and International Universities with credit transfer mechanism.
i. Extensive use of technology in teaching, learning, vocational education.
j. Enabling students of differently able/special needy for education using technology/innovative methodology/learning pedagogy.
k. Removing language barriers by promoting education in mother tongue/Indian Languages.

Hence, the salient features of the curricular aspects focus on learning and integrating higher education with vocational education and experiential learning for credit assignments through class room teaching, laboratory, field work, projects, assignments, tutorial, sports & games, performing arts (yoga, music, handicraft work), social work (community work/NCC/NSS), Examination (class test, assessment, quizzes, Sessional tests, semester examination), technical and vocational training (skill based training/project/field visit/Industry attachment), Internship (apprenticeship/experiential learning/on-job training), use of technology in learning (blended/hybrid/online/digital) all of which effectively summarizes into Knowledge, Skills, Professional Training and Aptitude. Hence, the curricular features of the programme focus on excellence of learning and teaching through the Knowledge dimension (conceptual, procedural, factual and metacognitive) and the Cognitive process dimension (create, evaluate, analyze, apply, understand and remember).

3. Credit and Academic Bank of Credit (ABC):

A credit is a unit by which the course work is measured. It determines the number of hours of instruction required per week for the duration of a semester (15 to 16 weeks). Hence, following pattern is adopted for defining the credit attached to a course:

1 hour lecture	1 credit
1 hour tutorial per week	1 credit
1 hour practical per week	0.5 credit

Hence, in general, one credit is equivalent to 15 h of teaching/lecture or 30 h of practical or field work or community engagement or services per semester. One credit involves 30 hours of out-of-class activities such as preparation for classes/ lessons, completing

assignments which form a part of the course work, independent reading, study per semester and 15 hours of out-of-class activities per semester for practicum.

With reference to NEP, the curricular aspect facilitates multiple entry, multiple exit and re-entry options for students at the undergraduate and master's levels. As per the provision to be implemented, Academic Bank of Credit (ABC) facilitates credit accumulation, credit transfer and consolidation of the credits earned by the students. The ABC also allows credit redemption through the process of commuting the accrued credits in the Academic Bank Account for the purpose of fulfilling the credits requirements for the award of Certificate/Diploma/ Degree. The validity of credits earned and kept in the Academic Credit Account shall be for a maximum period of seven years or as specified for different disciplinary or fields of learning to allow the redemption of credits after the date of earning such credits. After seven years, re-entry into a programme of study shall be based on the validation of prior learning outcomes. Lateral entry into the programme of study at a particular level shall be based on the validation of prior learning outcomes, including those achieved outside of formal learning or through learning and training in the workplace or in the community, through continuing professional development activities, or through independent/self-directed/self-managed learning activities.

4. Academic Credit Framework:

The academic credit framework include following components, although not limited to, of the designed curriculum:

Taught course: courses involving lectures relating to a discipline. A minimum 15 h of teaching per credit in a semester is emphasized.

Seminar: structured discussion/conversation or debate focusing on assigned tasks/readings.

Practicum: participation in approved project or practical activities in a chosen field. 50% face to face teaching and 50% field based learning/project or lab work or workshop activities.

Internship: participation in professional employment related activities or work experience.

Laboratory work: practice/application of a scientific or technical principle/theory

Studio activities/Music/Arts: engagement of students in creative or artistic activities.

Workshop based activities: engagement of students in hands-on activities related to vocational or professional practice.

Field study/projects: participation in field-base learning/project.

Community engagement: the curricular component should expose the students to the socio-economic issues in society supplemented by actual life experience.

Hybrid learning: 75% face to face teaching and 25% field-based learning/project/lab work/workshop activities.

5. **Graduate attributes and Qualification Descriptors**:

The curriculum framework of a programme has been designed in a manner that enable students to possesses and demonstrate the expected graduate profile/attributes acquired through one or more modes of learning, including direct in-person or face to face instruction, open and distance learning, online learning, and hybrid/blended mode learning. The profile indicate the quality and feature or characteristics of the graduate acquiring programme learning outcomes/course learning outcome relating to the disciplinary area(s) relating to the chosen field(s); generic learning outcome and the capabilities that help widen the current knowledge base and skills, gain and apply new knowledge and skills, undertake future studies independently, perform well in a chosen career, and play a constructive role as a responsible citizen in the society. The graduate attributes include a set of competencies that are transferable beyond the study of a particular subject/disciplinary area and programme contexts in which they have been developed through meaningful learning experiences and a process of critical and reflective thinking. A communication skill, constitutional, humanistic, ethical and moral values, leadership quality, multicultural competency, value inculcation, empathy, environment awareness, skill to digital and technological solutions, autonomy and responsibilities and community engagement and services are some of the attributes expected from a graduate from various level as per NHEQF (National Higher Education Qualification Framework).

5.1.   Multiple entry and Exit/Qualification/Scope and Coverage:

Initial admission/entry to a programme in Central University of Jharkhand will be based on 12ᵗʰ Certificate and Entrance – as per CUJ regulation/procedure for admission (entrance requirement/academic record, etc.). The Undergraduate programmes shall be of 4-year duration and Integrated Master programme shall of 5 year duration with range of holistic and multidisciplinary education in addition to focus on the chosen Major and Minors as per the choice of the students, with multiple exit options within this period, with appropriate certifications:

The appropriate certifications are:

i) a undergraduate certificate after completing 1 year (2 semesters) of study in the chosen discipline or field, including vocational and professional areas;

ii)a undergraduate diploma after 2 years (4 semesters) of study;

iii) a Bachelor's degree after a 3-year (6 semesters) programme of study;

iv) a Bachelor's degree 'with Honours/Research' after a 4-year (eight semesters) programme of study. A Postgraduate Diploma for those who chose to exit after successful completion of the first year (two semesters)

vii) a Master degree after successful completion of 10 semester (for completion of 2-years (four semesters) - for those who have obtained a 3-year/6-semester bachelor's degree); OR one year (two semesters) in the case of those who have obtained a 4-year/8-semester Bachelor's (Honours/Research) degree.

Hence, in nutshell, the programme include:

i) an integrated 5-year Bachelor's/Master's programme.

ii) a 2-year Master's programme with the second year devoted entirely to research for those who have completed the 3-year Bachelor's programme;

iii) a 1-year Master's programme for students who have completed a 4-year Bachelor's degree (Honours/Research) programme with research;

Undertaking a Ph.D. programme shall require either a Master's degree or a 4-year Bachelor's degree with Honours/Research (with appropriate CGPA/SGPA as per the CUJ admission procedure notified from time to time).

NHEQF Level	Qualification	Qualification title, Progamme duration	Minimum Credit requirement
Level-5	Undergraduate Certificate	Undergraduate Certificate (Field of study/discipline). (Programme duration: First year (first two semesters) of the undergraduate programme, followed by an exit 10-credit bridge course(s) lasting two months, including at least 6-credit job-specific internship/apprenticeship that would help the graduates acquire job-ready competencies required to enter the workforce.	40
Level-6	Undergraduate Diploma	Undergraduate Diploma (Field of study/discipline). (Programme duration: First two years (first four semesters) of the undergraduate programme, followed by an exit 10-credit bridge course(s) lasting two months, including at least 6-credit job-specific internship/apprenticeship that would help the graduates acquire job-ready competencies required to enter the workforce.	80
Level-7	Bachelor's degree	Bachelor of (Field of study/discipline) (Programme duration: First two years (first four semesters) of the undergraduate programme, followed by an exit 10-credit bridge course(s) lasting two months, including at least 6-credit job-specific internship/apprenticeship that would help the graduates acquire job-ready competencies required to enter the workforce.	120
Level-7	B.Voc	Bachelor of Vocation (B.Voc). (Programme duration: 3 years or 6 semesters).	120 (details included in separate C.F. for Engg./Tech.)
Level-7	B.E/B.Tech	Bachelor's Degree programme in Engineering & Technology. (Programme duration: Four years or 8 semesters.	160 (details included in separate C.F. for Engg./Tech.)
Level-8	Bachelor's	Bachelor of (Field of study/discipline) (Honours/Research).	160

	degree (Honours/ Research)	Programme duration: Four years (eight semesters).	
Level-8	Post-Graduate Diploma	Post-Graduate Diploma in (Field of study/discipline). Programme duration: One year (two semesters) in the case of those who exit after successful completion of the first year (two semesters) of the 2-year master's programme, followed by an exit 10-credit bridge courses lasting two months, including at least 6-credit job-specific internship/apprenticeship that would help the graduates acquire job-ready competencies required to enter the workforce.	40
Level-9	Master's degree (1 year/2 semesters of study)	Master of (Field of study/discipline). Programme duration: Two years (four semesters) for those who have obtained a 3-year/6-semester bachelor's degree, or one year (two semesters) in the case of those who have obtained a 4-year/8-semester Bachelor's (Honours/Research) degree.	80
Level-9	Master's degree (2 years /4 semesters of study)		40
Level-10	Doctoral Degree		

Normally, students are expected to complete the 4 year UGP in 8 semesters. However, in special circumstances, a student will be permitted an extension, so as to enable him/her to complete all requirements for the degree.

5.1.1. Lateral Entry:

Lateral entry to the programme shall be in 3rd and 5th semesters shall be as per admission procedure advertised from time to time detailing the entry requirements. Candidates intended for lateral entry must clear the specified credits of all the courses of previous semesters according to the credits available in Academic Bank of Credits. The syllabus studied in previous semester should not have variation of more than 30% which shall be determined by specified equivalence committee of the University. Further lateral entry shall be based on the validation of prior learning outcomes achieved, including those achieved outside of formal learning or through learning and training in the workplace or in the community, or through continuing professional development activities, or through independent/self-directed learning activities evaluated by the norms and parameter decided by the university.

5.2. Curriculum framework – credit requirements:

5.2.1.Structure for FYUGP (Four Year Undergraduate Programme)/FYIMP (Five Year Integrated Master Programme):

The FYUGP (**in Semester 1, 2, and 3**) is intended to develop the capacities of the students in fields across arts, humanities, languages, natural sciences, social sciences. Mathematical and computational thinking and analysis – complex problem solving, critical thinking, and communication skills including vocational education forms a part of

the curriculum framework. In addition, social engagement (representing different perspective on human knowledge and learning), soft skills, also forms a part of the curriculum with introduction of disciplinary/interdisciplinary major and minor(s). The courses are intended to be broad in scope and introductory in nature which forms an essential part of a holistic education. The course shall also represent the prerequisite to a disciplinary/interdisciplinary major and minor. All courses shall include substantial components of practicum and hands-on experiments.

The **Semester 4,5, and 6:** At the end of the 3rd semester, each student shall choose a disciplinary/interdisciplinary are of learning for specialization (Major) according to academic interest. In addition to a Major, the student shall also choose a 'Minor'. Sufficient number of courses shall be offered in the chosen Major and Minor categories.

The **Semester 7,8**: At the beginning of the 7th semester, student shall take up a research project along with advanced disciplinary/interdisciplinary course and research methodology courses. The final semester is entirely devoted to the research project. The project shall be related to the topic in the chosen disciplinary/interdisciplinary studies and/or substantial overlapping with the studied subjects in disciplinary/interdisciplinary areas of studies.

The **Semester 9 and 10**: Both the semester devoted to various advance courses related to discipline only. Extensive practicum/hands on training/project work/lab work shall be included in both the semesters. 10th semester is entirely devoted to project work/Master Thesis related to discipline. Student may initiate collaborative research work at the beginning of the 9th semester in consultation with Mentor. The student may also be encouraged to steer the work for patent/expect to make the work published before finalization of Master Thesis. University guidelines shall be followed in patent related work/patent related financial aspect and claim thereto. Due acknowledgment/appropriate authorship/affiliation shall be ethically followed while publishing the work/submitting the work for patent.

5.2.3. Curricular components and credit distribution:

Curricular components include following *minimum* Credit hour requirements:

(i)Common Courses (CC) (24 Credits):

Language and communication skill (Modern Indian Language) – 6 credits
Language and communication skill (English) – 6 credits
Understanding India – 3 credits

(The aim of this course is to apprise students regarding Indian Culture, philosophy, society and politics. The course also aim to provide some outlook towards Indian foreign policy, scientific revolution, green revolution and technological progress).

Environmental science/education – 3 credits

(This course shall be able to provide/acquired knowledge, skills, attitudes, and values required for sustainable environment, knowledge and skill to mitigate the effects of environmental degradation, climate change, waste management and and pollution control. Conservation of biological diversity and management of biological resources including forest and wildlife conservation for sustainable development and living is an integral part of environmental science education programme. The course shall provide required knowledge and understanding of India's environment, Jharkhand in specific and the effect of environment in the present scenario for interactive processes and improving quality of people's living in society.

Health and wellness, Yoga and sports – 2 credits

(National Education Policy 2020 (NEP) placed high priority on health/nourishment. Health and education are strongly interconnected. While healthy individuals are more likely to have better education outcomes, right education can improve the health status of a student in the Organization. This course aims to provide awareness about proper nourishment and good health to aid optimal learning, and proposes certain health-related interventions. The curriculum is expected to contain courses that make education well-rounded, useful and fulfilling, including games, yoga, sports and fitness. The course proposes sports-integration, or utilizing physical activities in pedagogical practices, to increase the students' cognitive abilities, in addition to promoting physical and psychological well-being. Sports-integrated learning can facilitate students in achieving fitness levels envisaged in the Fit India movement, and adopt fitness as a lifelong attitude. It will also develop their skills like collaboration, self-initiative, teamwork and responsibility. The course offers flexibility and choice of subjects, allowing students to choose physical education as part of the curriculum and to engage in local vocational and other activities, such as sports and gardening. The NEP further encourages formation of clubs, including for sports, yoga, and health and well-being, at all levels).

Digital and technological solution (DTS) – 4 credits

(Technology will impact educational processes and outcomes in future. The course aims to provide an in depth idea about the use of digital technologies to strengthen learning, assessment, planning, and administration. The digital technology that the society/educational institute/industry is going to adopt in future for growth. For example, a course on Artificial intelligence (AI) shall focus to realize the intelligent human behaviors on a computer. Similarly, course on 3D machine learning, big data analysis, etc. can focus on their applications to education, health and sustainable living.)

(ii) Introductory Courses (IC) (18 Credits) (within 1,2,3 semester)

related to Natural Sciences – 6 credits (from a basket of courses – Table – 1)

(These courses shall focus on development of an understanding of the natural world through application of the scientific methods characterized by observation, experimentation, and formulation, testing and establishing hypothesis. Such course shall include chemistry, biochemistry, biology, computer science, data science, earth and environmental science, physics, statistics, mathematics, astronomy, astrophysics, etc at introductory level. This course serves as a pre-requisite to chose higher level courses).

related to Social Sciences – 6 credits (from a basket of courses – Table – 1)

(These courses shall focus on study of social behavior of individual, groups, societies, nations, and states. Students shall be introduced use of quantitative methods, descriptive analysis, data collection and data analysis associated with social phenomenon. The course shall also provide opportunity to the students to examine, draw relationship between people and societies. Courses from Social Sciences such as Anthropology, Psychology, Social work, sociology, Economics, History, Political Science, Linguistics etc, form a related course structure. These courses shall also serve as a pre-requisite to higher level courses).

related to Humanities – 6 credits (from a basket of courses – Table – 1)

(Humanities related courses shall focus on understanding the human experience through the visual and performing arts, literature, languages, and cultures across India and the World. The arts and creative expressions course shall aim at enabling the students to acquire and demonstrate the knowledge and understanding required to engage with activities required to promote the development skills in creative thinking and expressions among the students, promoting aesthetic development of students and an understanding of expressive works of art relating to different arts disciplines such as drama, dance, music, creative writing, visual arts, photography, etc. Few of the examples include courses on Philosophy, Archeology, Comparative literatures, etc. and various interdisciplinary courses relating to humanities may be considered in the basket of courses. These courses shall also serves as pre-requisite to higher level courses).

(iii) Introductory Courses related to Vocational Studies (ICV) – 6 Credits

Courses chosen from basket of courses related to professional job related courses with an objective to impart an entrepreneurship skill/skill related to particular job/self employment opportunities. The course also aims at enabling the student to exercise management and supervision at work or study activities involving technology assisted work in a work process and working environment. The course curricular may also be designed to encourage the student participation in a group/team to address environment and sustainable development related to a profession.

(Courses related to ICV – Table-2

(iv) Disciplinary/Interdisciplinary 'Major' (MJ) – 48 Credits

Chosen from learning area from one of the introductory courses pursued during the first three semesters – natural sciences, social sciences, humanities, business management, commerce, etc.

Courses related to MJ – Table-3

(v) Disciplinary/Interdisciplinary 'Minor' (MN) – 36 Credits

Two minors to be chosen. One minor relating to a disciplinary/interdisciplinary area and other minor relating to the vocational studies/education such as courses from natural sciences, social sciences, humanities, commerce, business management, etc.

MN(A) – Table-3

MN(B) – Table--3

(vi) Advance Courses (ADV – advance course related to vocational)/(ADC – advance course related to discipline/interdiscipline - research) – 18 Credits.

Research methodology – 6 Credits
Development of project/research proposal, review of literature, collection of data – 4 Credits
Research internship – 4 Credits
Preparation of report/presentation – 4 Credits

(vii) Field based study (FS) – 3 Credits

Field based learning, development of project, industrial visit, and innovative practice related to the study

(viii) Internship (IN) – 4 Credits

Internship with local industry, business, artists, craft persons, etc.

(ix) Community Engagement (CE) – 3 Credits

Participation in NSS, NCC, adult literacy, student mentoring, etc.

(x) Audit Courses/Bridge Courses (AC/BC)- 3Credits – Passed based on 75% attendance and appearance in examination.

University/Dept/School may decide to offer a range of Audit course, Bridge courses at the beginning of each semester/during the semester to students requiring pre-requisite to pursue a particular course/programme. Such

courses may require a mentoring system and beyond the class hour engagement with flexibility to both teachers and students to bridge the gap in learning outcome.

5.2.4. Model course structure and credit distribution:[#]

Entry will be based on 12th Certificate and Entrance – as per CUJ regulation/procedure for admission (entrance requirement/academic record, etc.)											
Programme/ sem/ courses /credit hour	(24)	(18)	(3)	(3)	(6)	(48)	(36)	(18)	(3)	(4)	(3Cr)	Credits
Semester-1,2,3-Combine major areas of learning such as natural sciences, social sciences, humanities, mathematical and computational thinking and analysis, creative expressions, vocational education.											
FYUGP (first year under graduate programme)	(CC)	(IC)			(ICV)	(MJ)	%(MN) MN(A) & MN(B)	(ADV/ ADC)	(FS)	(IN)	(CE)	Credits
1st Sem	CC1-3Cr-MIL(Hindi/Sanskrit/ Santhali/Oriya/ Bengali)	IC1-3Cr-Sci/Soc.Sci / Humanities/ Business admn/Commerce	AC/ BC-3 Cr		ICV1-3Cr	-					NCC/ NSS-CE-1-3Cr	**24**
	CC2-3Cr-English	IC2-3Cr-Sci/Soc.Sci / Humanities/ Business admn/Commerce										
	CC3-3Cr-Understanding India											
Immediately after the admission of the students, all Dept./School shall appoint Mentor to students for the Programme. Mentor shall be guiding the students in choosing various courses including the IC courses depending upon students interest in pursuing the course/programme taking into account student's capability and previous knowledge and incase a pre-requisite (bridge course) is needed for particular IC or CC or any other courses. However, students own interest and eligibility is paramount in making a final choice. Students can also be attached to joint mentorships in case of interdisciplinary subjects/subjects requiring core discipline knowledge/student's desire to choose additional mentors. A parental guidance/counseling attitude/amicable characteristics is expected from mentors in view of student's choice of career decision making process. During the course registration, a format to this may also be filled and shall be kept by the dept./school for future use/guiding the students for successful completion of the course/programme. Unit/Sectional Heads, Senior academics is expected to remain in close association with students during the intermediate years. (Format Annexure-1)											
2nd Sem	CC4-3Cr-MIL (Hindi/Sanskrit / Santhali/Oriya/ Bengali)	IC3-3Cr-Sci/Soc.Sci /Humanities /BA/Com		(&)MCTA-3Cr	ICV2-2-3Cr							**24**
	CC5-3Cr-Eng	IC4-3Cr-Sci/Soc.Sci /Humanities							Industry visit/			

Sem				ADV	MJ	MN		Internship/Seminar		Credits
								Office work-3Cr		
	CC6-3Cr-Env.education									

The Undergraduate Certificate (in the field of learning/discipline) will be awarded to the student after completion two semester of 40 Credit. A 10 credit bridge course lasting two months, including 6 credit job specific internship/apprenticeship is mandatory for obtaining certificate. NHEQF level-5

Sem				ADV	MJ	MN		Internship/Seminar		Credits
3rd Sem	CC7-4Cr-DTS*	IC5-3Cr-Sci/Soc.Sci/Humanities/BA/Com			MJ1-6Cr	MN(A)-3Cr		Apprenticeship/Internship/Seminar -3Cr		**24**
	CC8-2Cr-Health/wellness/Yoga	IC6-3Cr-Sci/Soc.Sci/Humanities/BA/Com								

Semester 4,5,6 – At the end of the 3rd sem, each student will choose a disciplinary or an interdisciplinary area of learning for specialization (Major) according to his/her academic interest. Both the academic interest of the student and his/her performance will be considered for allocating the disciplinary/interdisciplinary major. In addition to the disciplinary/interdisciplinary major, a student may also choose a disciplinary/interdisciplinary Minor.

Sem				ADV	MJ	MN		Internship/Seminar		Credits
4th Sem				$ADV1-4Cr-(from the list of vocation courses	MJ2-6Cr	MN(B)-3Cr		Seminar-2Cr		**24**
					MJ3-6Cr	MN(A)-3Cr				

Undergraduate Diploma, level-6, (in the field of learning/discipline), credit requirement 80 Credits. 10 Credit Bridge course(s) lasting two months, including at least 6-Credit job specific internship/apprenticeship programme.

Sem				ADV	MJ	MN		Internship/Seminar		Credits
5th Sem					MJ4-6Cr	MN(A)-3Cr		Seminar-3Cr		**24**
					MJ5-6Cr	MN(B)-6Cr				
6th Sem					MJ6-6Cr	MN(B)-3Cr		Internship with local		**24**

									NGO/Industry/Seminar-3Cr		
						MJ7-6Cr	MN(A)-6Cr				

Level-7/Bachelor of (Field of study/discipline)/120 Credit/ Exit: 10 Credit Brdige course lasting 2 months, including 6 credit job specific internship/apprenticeship.

7th and 8th sem – at the beginning of the 7th sem, each student will take up a research project along with advanced disciplinary/interdisciplinary courses and research methodology courses. Final semester will be devoted exclusively to the research project. The project should be related to a topic in the chosen Major disciplinary programme of study or an interdisciplinary topic that has a substantial overlap with the major disciplinary/interdisciplinary programme of study.

						MJ8-6Cr	MN(B)-6Cr	ADC1-6Cr (RM)			24
7th Sem							MN(A)-3Cr	ADC2-3Cr-Internship			
8th Sem						ICV3-6Cr-Voc study related to course with local org.		ADC-3-6Cr-Project Proposal			24
								ADC-4-6Cr-Project Internship			
								ADC-5-6Cr-Project Presentation			

Level8/Bachelor's degree (Hons/Research)/Credit requirement: 160 Cr

 # The model course structure and credit distribution is for reference for incorporation of various curricular components as prescribed. Department/School may make minor adjustment depending upon the academic requirement of particular course and available academic infrastructural facilities in consultation with appropriate academic bodies of the University without changing the intent of effective implementation of NEP.

&MCTA (Mathematical and Computational Thinking Analysis) – Qualitative-quantitative methodology analysis course (focus on quantitative information to make decision, judgment, prediction – including defining problem by means of numerical and geometrical representations of real world phenomenon, determining how to solve it, deducing inferences, formulating alternatives and predicating cause.

*Digital and technology solutions (Artificial Intelligence, 3D machining, big data analysis, machine learning (with emphasis on application to education, health and sustainable living).

%MN = two minors; one minor relating to discipline/interdisciplinary area adnd the other relating to the vocational studies/education (course chosen from learning area relating to Natural Sci, Soc. Sci, Humanities, interdisciplinary courses and courses relating to vocational studies pursued during first three semesters.

RM – Research Methodology

#IC-1/IC-2 – Courses related to following: (at least two courses in each semester)

Science *– (Dept. to offer the courses - Chemistry, Physics, Mathematics, Life Sci., Env.Sci., Geography, Geology)*
Course name: Cognitive Science, Science in everyday life, Environ.Sci., Sustainable developments,
Social Sci *– (Dept. to offer the courses - Anthropology, Communication & Media, Economics, History, Pol.Sci., Public administration, Sociology, Social Works, Geography)*
Course name: Gender studies, Human rights, governance, public policy, political economy, constitutional studies, woman and gender studies, Urban studies, Regional studies, Gandhian Studies
Humanities *- Linguistics, English, Hindi, Language dept.,*
Courses name: Translation studies.
(all above course names/offering dept. under IC are indicative in nature for reference only; appropriate academic bodies, Dept./School may decide the floating of the course by particular Dept./School/Faculty/ and can finalize course name, course structure).

5.2.5. MOOCs/SWAYAM

As per the UGC notification dt.25th March, 2021, "a list of SWAYAM based online credit courses for a particular semester can be taken and higher education institution may allow only up to 40% of the total courses, being offered in a particular programme, in a semester, through the online credit courses, through SWAYAM platform" (Gazette notification, Extraordinary, Part III, Dt.25.3.2021). University MOOCs coordinator(s) in consultation with respective Heads/Coordinators/Deans/Academic Dean shall separately develop/notify mechanism for guiding students for the choice of MOOCs for a particular semester/programme.

6. Learning Assessment

Learning assessment shall be appropriate for a programme of study and shall be used to assess progress towards the course/programme learning outcome. Priority shall be given to formative assessment. Evaluation shall be based on continuous assessment (*i.e.* best two out of three Sessional conducted in a semester for a particular course). The sum total of continuous assessments (40%) and a terminal examination (60%) (end semester examination) shall contribute to the calculation of final grade. Sessional work shall consist of class tests, mid-semester examination(s), home-work assignments, etc.,

as determined by the Academic Bodies of the University. Progress towards achievement of learning outcomes shall be based on time-constrained examinations, closed book/open book tests, problem solving assignments, practical assignments in the laboratory, laboratory report, project report, case study report, oral presentation including seminar presentation, viva-voce interviews, computerized adaptive assessment, examination on demand, modular certifications, etc.

Normally a Letter grade and Grade point shall be awarded as enlisted below:

Letter Grade	Grade point
O (outstanding)	10
A+ (Excellent)	9
A (very good)	8
B+ (Good)	7
B (above avg)	6
C (avg)	5
P(Pass)	4
F(fail)	0
Ab(absent)	0

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

6.1. Computation of SGPA and CGPA

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

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

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

Where, Si is the SGPA of the ith semester and Ci is the total number of credits in that semester.
The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcript.

Illustration for SGPA:

Course	Credit	Letter grade	Grade point	Credit point
Course 1	3	A	8	24
Course 2	4	B+	7	28
Course 3	3	B	6	18

Course 4	3	O	10	30
Course 5	3	C	5	15
	16			115

SGPA = 115/16 = 7.18

*Illustration for CGPA***:**

Sem-1	Sem-2	Sem-3
Credit = 20 SGPA = 6.9	Credit = 22 SGPA = 7.8	Credit = 25 SGPA = 5.6

7. Validity of Registration:

Validity of a registration shall be for maximum for Seven years from the date of registration. If an examinee fails to obtain minimum marks to secure honours, he/she will be awarded maximum five *(5)* marks as grace marks in one paper in his/her whole academic session and will be awarded only when the status of the result changes.

8. Examination Regulation:

Examination regulation constitutes the eligibility for appearing Sessional, mid semester, semester examinations, back paper, registration form filling up, etc. including guideline for question paper setting, moderation, evaluation criteria, promotion to the next semester, declaration of results, ranking, review of the result, etc. shall be referred separately as published by the Examination Section of the University.

9. Choosing Programmes/Courses related to IC/ICV/Major/Minor/

Table-1: Courses related to IC (Sci, Soc.Sci & Humanities)[$,$$]

Department(s) offering IC	Science (6 Credits)	Social Science (6 Credits)	Humanties (6 Credits)
Chemistry Life Science Physics Mathematics Env.Sci Anthropology Geography Political Science English Hindi Economics Mass communication Chinese Korean Education Business Administration Geoinformatics Social Sci Statistics Public administration Music & Theatre Commerce Tibetan Civil Engg. Energy Engg. Metallurgical & Mat. Sci. Engg. Computer Sci.Engg	Science in Everyday life (IC-100-CH) Sustainable Development (IC-101-EVS) Cognitive Sci. (IC-102-EDU) Water conservation (IC-EVS-103) Alternative Energy (IC-104-CH) An Introduction to differential equation(IC-105-MT) Statistics for Science(IC-106-ST) Introduction to chemistry reaction and ratios (IC-107-CH) Foundation in biology(IC-108-LS) Basic concept of physics(IC-109-PHY) An introductory course to Chemistry(IC-110-CH) An introductory course to mathematics(IC-111-MT) *(more such courses shall be incorporated)*	Political Economy Gender Studies Human rights Public Policy & Governance Gandhian Studies Urban Studies Regional Studies Introduction to social science *(more such courses shall be incorporated)*	Linguistics Translation Studies (Hindi/English/Korean, etc.) Korean/Chinese/Tibetan studies Introduction to humanities as undergraduate study An introduction to fine and performing Arts An introduction to modern and ancient language and literature. An introduction to media and cultural studies An introduction to history and philosophy of religion *(more such courses shall be incorporated)*

$Pre-requisite to any introductory course (IC) can be offered by Dept./School separately as Bridge course. Such courses shall be a 'PASS' or 'FAIL" courses with no credits. All such pre-requisite courses may be given a code from 0 – 99, e.g., For course 'Introduction to chemistry reaction and ratio' may require a pre-requisite course in 'Language in Chemistry' which can be offered separately by the Dept./School. Dept./School may declare an IC course needing pre-requisite before the commencement of the Course so that the student can make an informed choice. It is to be noted that decision regarding requirement of Pre-requisite to an IC course can only be made by the Department concerned and/or Faculty concerned teaching the said course. A particular IC course may not require a Pre-requisite in case the student studied related courses/has knowledge about the subject previously at School level. Mentor guidance is necessary when choosing the IC course.

$$ IC courses generally focus on Foundation theories, concepts, perspectives, principles, methods and procedure for critical thinking in order to provide a broad base for taking up more advanced courses. Such courses should be coded from 100 to 199.

Proposed Coding pattern for courses of pre-requisite and IC; (All course code for IC or Pre-requisite courses may be made centrally by Academic Unit/Dean – Academics/Examination Unit in order to avoid repetition of the coding pattern).

Course name	Nature of course	Course code	Proposed Dept./School to offer, offering Dept.Code
Language of Chemistry	Pre-requisite to IC-107-CH, IC-110-CH.	IC-01-CH	Dept. of Chemistry (CH)
Basic mathematics	Pre-requisite to IC--105-MT, IC-111-MT	IC-02-MT	Dept. of Mathematics (MT)
Alternative Energy	IC (no pre-requisite needed)	IC-104-CH	Dept. of Chemistry (CH)

Coding of CC courses/All ICV and FS courses (falling within 4th semester)

All Intermediate level courses including subject level courses intended to meet the credit requirements for Major and Minor area of learning may be coded from 200 – 299., e.g., courses offered in the category of CC (common course) can be given a code such as:

Course name	Nature of course	Course code	Proposed Dept./School to offer, offering Dept.Code
Karyalalina Hindi (CC-1 as per Curriculum Framework)	Intermediate	CC-200-HN	Dept. of Hindi (HN)
English Grammar (CC-2 as per CF)	Intermediate	CC-201-EN	Dept. of English (EN)
Understanding India (CC-3 as per CF)	Intermediate	CC-202-POL	Dept. of Political Sci.(POL)

Coding of MJ/MN courses

All Major/Minor courses involving disciplinary/interdisciplinary subject areas may be termed as Higher Level courses which may be coded from 300 – 399., e.g., courses offered in the category of MJ/MN can be given a code such as:

Course name	Nature of course	Course code	Proposed Dept./School to offer, offering Dept.Code
Inorganic Chemistry-I (MJ-1 as per Curriculum Framework)	Higher level	MJ-300-CH	Dept. of Chemistry (CH)
Wave and Optics (MN(A) as per CF)	Higher level	MN-301-PHY	Dept. of Physics (PHY)
Solid Waste Management (MN(B) as per CF)	Higher level	MN-302-EVS	Dept. of Env.Sci.(EVS)
India's Foreign Policy (MN(B) as per CF)	Higher level	MN-303-POL	Dept. of Political Sci.(POL)

Coding of Advance courses

Advance courses which include taught courses with practicum, seminar-based course, term papers, research methodology, advanced laboratory expt, research projects, internship, apprenticeship may be coded from 400 – 499., e.g., courses offered in the category of ADC/IN can be given a code such as:

Course name	Nature of course	Course code	Proposed Dept./School to offer, offering Dept.Code
Research methodology	Advanced level	ADV-400-CH	Dept. of Chemistry (CH)
Research methodology	Advanced level	ADV-401-EN	Dept. of English (EN)
Research methodology	Advanced level	ADV-402-MT	Dept. of Mathematics (MT)
Research Internship	Advanced level	ADV-403-ANH	Dept. of Anthropology.(ANH)
Project Presentation	Advanced level	ADV-404-POL	Dept. of Political Sci.(POL)

Coding of 1st year Master degree courses (for 2 year Master programme

It may be coded from 500 – 599.

Coding of 2nd year Master degree courses (for 2 year Master programme or 1 year Master degree programme

It may be coded from 600 – 699.,

(Ref.UGC; list of proposed courses and course code are indicative for each discipline. Dept./Academic wings may add related courses based on academic infrastructures).

Table-2: Proposed Courses related to ICV

Courses in ICV category is mostly related to introductory vocational courses (course may be chosen from learning area relating to Natural Sci., Soc.Sci., Humanities, interdisciplinary courses, and courses relating to vocational studies giving emphasis upon students interest and capabilities. A minimum of 6 Credits hour may be given spread over in various semesters. Depending upon kind of course and level of course (*i.e*, introductory or advance), the course may be designed to include lab-based/industry based practical, practicum, exposure of students to hands-on training, visit to the industry/chosen organization for exposure. Course may include class room lecture in case necessary. However, work/activity oriented studies is emphasized in the course confirming to the programme learning outcome, course learning outcome and generic learning outcome in the chosen discipline. For example, in a course like 'Event management", it is expected that the course may include practical involvement of students in technically managing small event related to a particular departmental programme/university programme in addition to knowledge derived from class room teaching. Similarly, a course in 'Ethanomedicine' is expected to cover comprehensive class room knowledge in the subject in addition to practically identifying the utility of the plant materials/ingredients in society/local population. Courses in ICV category may mention the pre-requisite knowledge that is necessary to pursue the course. For example, a course in 'Community Development' offered in 2nd semester may require courses studied up to 12th class (Higher Secondary School level) and/or courses taught during 1st semester, hence additional pre-requisite may not require. Wherever required Dept./School may facilitate a bridge course of comprehensive duration to supplement the course, A judicious design of the course by course teacher/Dept/School and selection of the ICV by students can be facilitated by Mentor(s)/Course Teachers/Academics.

Courses may include Agriculture (Organic Farming, Protected Cultivation, Horticulture, Floriculture), Insurance, Banking, Financial services, Food industries, IT, Media technology, Media education, Tourism & Hospitality, Social impact assessment, Advocacy (human rights and social justice), study of museum, curation, community development, human/social service, International development and affairs, mass communication, Forensic, market research, cultural resource management, historic preservation, ethanography, ethanomedicine, industrial safety, natural disaster management and training, cultural anthropology, health – public health, humanitarian efforts, organizational development, education – pedagogy, natural resource management, linguistic anthropology, archeology, gender studies, digital marketing, energy and environment, natural hazard, environmental modeling, fashion designing, event management, international trade management, life style products, catering management, cosmetology, English communication and presentation skills, advertising design, clinical nutrition, nutrition and dietetics, handloom weaving, pottery, leather craft, polymer/plastic making, office management, corporate communication, industrial chemistry and training, computer related/digital office management/accountancy process,		
Discipline	**Courses**
Anthropology	Anthropology of social impact assessment Field methodology Documenting intangible cultural heritage Applied biological anthropology and human genetics Nutritional anthropology
Mass communication	Social media Advertising Communication technology Photo journalism Photography/Techniques in Photography Media & tourism

Geography	Watershed management Remote sensing and GIS Soil system Climate change Field technique and surveying method Regional planning and sustainable development
Mathematics	C-programming for mathematics Advanced mechanics Cryptography Mathematical finance Mathematics for Chemistry
Social Works	Social work practice with differently abled Corporate social responsibility Human rights and social justice Programme media and its applications
Chemistry	1. Food Chemistry 2. Chemical Technology & Society 3. Analytical Clinical Biochemistry 4. Chemistry of Cosmetics & Perfumes 5. Pesticide Chemistry 6. Fuel Chemistry 7. Industrial chemistry
Computer Science & Engg.	IT Skills for Chemists
Management studies	IPR & Business Skills for Chemists Marketing management Intellectual Property Rights Hospitality management
Env.Sci	Pollution control and Waste management
Life Sci	Chemo informatics Pharmaceutical Chemistry Medical laboratory technique Forensic science Agricultural studies (soil science/plant science) Floriculture Organic farming protected cultivation

Electrical Engg/Energy Engg.	Solar energy utilization Industrial instrumentation Biogas and its application		
Civil Engg.	Water conservation studies		
Commerce	Banking and Financial Studies Banking and Insurance		
List of Dept. and courses mentioned are indicative. Faculty/Dept./School of CUJ shall offer appropriate ICV for group of students related to discipline/interdisciplinary. The list of courses to be floated in a semesters may be decided/finalized by Academic Dean.			

Table-3: Courses related to Major and Minor[@]

Department(s)	MJ[#]	MN(A)[*]	MN(B)[$]

Chemistry	Chemistry	Chemistry	Env.Sci
Life Science	Life Sci	Life Sci	1.Solid waste management
Physics	Physics	Physics	2.Introduction to biological environment
Mathematics	Mathematics	Mathematics	3. Environment statistics and computer applications
Env.Sci	Env.Sci	Env.Sci	4.Env.Instrumentation
Anthropology	Anthropology	Anthropology	5.Env.pollution & Human health.
Geography	Geography	Geography	6. Water treatment technology
Political Science	Political Sci.	Political Sci.	
English	English	English	
Hindi	Hindi	Hindi	Chemistry
Economics	Economics	Economics	1.Analytical clinical biochemistry
Mass communication	Mass Comm.	Mass Comm.	2.IPR & business skill for chemist
Chinese	Chinese	Chinese	3.Biofertilizers
Korean	Korean	Korean	4.Chemoinformatics
Education		Education	5.Renewable energy (solar and biogas)
Business Administration		Social Sci/Social works	6.Polymer Sci. and technology.
Geoinformatics		Public administration	
Social Sci		Music & Theatre	
Statistics		Tibetan	Political Sci
Public administration		Statistics	1.India's foreign policy
Music & Theatre			2.Citizenship and governance
Commerce			3.Research in public opinion and voting behavior.
Tibetan			4.Citizen law and rights
Civil Engg.			
Energy Engg.			*(Ref.UGC; list of proposed courses are listed for each discipline. Dept./Academic wings may add related courses based on academic infrastructures)*
Metallurgical & Mat. Sci. Engg.			
Computer Sci.Engg			

#MJ – Departments offering Integrated PG/4 year UG programme as per the admission list shall only be eligible for offering 'Major' courses in respective discipline/subject. The Dept. shall offer 48 Credit course spread over from 3rd Semester to 8th Semester. The course may include lecture (theory), practical (lab work/activity), Practicum confirming to the programme learning outcome, course learning outcome and generic learning outcome in the chosen discipline.

*MN(A) – Minor shall be chosen by the students from all available Departments of the University (Sci, Soc.Sci, Humanities, Education, etc., except core Engg. Depts.) offering Integrated Master programme and/or 4 year UG programme and/or 2 year Master Programme. Students choosing a particular Major shall not choose the same subject as Minor *i.e.*, MN(A) (e.g., A combination of Physics Major with other Minor (A) such as Chemistry, Mathematics, Statistics, Economics, etc. shall be available, except the Physics). 'Minor (A)' shall be of 18 Credits spread over from 3rd Semester to 7th semester. The course may include lecture (theory), practical (lab work/activity), Practicum confirming to the programme learning outcome, course learning outcome and generic learning outcome in the chosen discipline.

$MN(B) shall be related to the vocational studies/education (course chosen from learning area relating to Natural Sci., Soc.Sci., Humanities, interdisciplinary courses, and courses relating to vocational studies pursued during the first three semester. Minor (B)' shall be of 18 Credits spread over from 3rd Semester to 7th semester. The course may include lecture (theory), practical (lab work/activity), Practicum confirming to the programme learning outcome, course learning outcome and generic learning outcome in the chosen discipline. For example, the course in 'Polymer Sci and Technology' (in MN(B) category) shall include theory classes and lab-practical classes and industry visit, as needed for the course confirming to the requisite/allocated credit hour. Similarly, a course in 'Citizenship and Governance' in MN(B) category may require both theory and practicum confirming to the requisite credit hour.

Table 3.1. (related to MN(B))

Discipline	Courses
Anthropology	Anthropology of social impact assessment Field methodology Documenting intangible cultural heritage Applied biological anthropology and human genetics Nutritional anthropology
Mass communication	Social media Advertising Communication technology Photo journalism
Geography	Watershed management Remote sensing and GIS Soil system Climate change Field technique and surveying method Regional planning and sustainable development
Mathematics	C-programming for mathematics Advanced mechanics Cryptography Mathematical finance
Social Works	Social work practice with differently abled Corporate social responsibility Human rights and social justice Programme media and its applications

@The above courses, referred from UGC, are indicative. All Dept./Schools of the University may provide courses in MN (B) and shall prepare such courses for total 18 credits (spread over in semesters as indicated) including lab-work, practicum confirming to programme outcome, course outcome and generic outcome as per NEP.

Annexure-1: Proposed/Draft Format to be filled up for choosing IC/MJ/MN. ICT help can also be taken in developing the format by the Dept./School/Academic Dean. Such form to be filled before course registration/starting of the classes. After filing of the form, the same may be kept in Dept./Section/School for future use and a copy may be supplied to the course teacher, academic Dean, in case of need.

Dept./School/year/Semester	
Student's name	
Registration Number	
Contact E mail/Phone	
Subjects to be taken as IC/Subject taken as IC/Subject to be taken an MJ/MN/Subject taken as MJ/MN/Any other course requiring advance knowledge.	Course name and code
Pre-requisite, if any,	Course name and code

Mentor's Name, Designation	Mentor's Input/Remark/Signature If the students proposal is accepted/requiring advise in particular aspects.
Course teacher's remark, if any. (if needed)	Input/Signature If the student's ability to pursue the course is satisfactory/require pre-requisites
Head of the Dept/Section remark, if any.	Input/Signature Overall remark needed.
	Students Signature in Full with Date Students agreed to the input of Mentors/course teachers/Head Students made a choiced decision in his/her own capability/eligibility.

Annexure-2: MOOCs/SWAYAM

Dept./School/year/Semester	
Student's name	
Registration Number	
Contact E mail/Phone	
Subjects to be taken as IC/Subject taken as IC/Subject to be taken an MJ/MN/Subject taken as MJ/MN/Any other course requiring advance knowledge.	Course name and code
Pre-requisite, if any,	Course name and code
MOOCs courses to be taken from SWAYAM platform and	*Example: MOOCs paper on SWAYAM Platform – Advance C++ (4 weeks, 2 credits, starting date: 1.4.2022, exam dt. 2.9.2022)*

name/course code of the paper allocated (in place of MOOCs) in the semester	*(against allocation of paper in the current semester: Programming in C++, course code, MN(A)-309-MT)*
Mentor's Input/Dept.Head/Coordinator input	Input/Remark/Signature If the students proposal is accepted/requiring advise in particular aspects. *Example, The paper is relevant/the paper requires audit course for the student/the paper is not relevant and hence not recommended.*
MOOCs Coordinator/Co-coordinator's remark, if any. (if needed)	Input/Signature If the student's ability to pursue the course is satisfactory/require pre-requisites *Example, Agreed with the recommendation of the Mentor/Dept. and hence hence recommended.*
Student's consent	Students Signature in Full with Date Students agreed to the input of Mentors/course teachers/Head Students made a choiced decision in his/her own capability/eligibility.
Examination Section	Accepted with inputs from Mentor/MOOCs coordinator(s)

NOTE

This Draft Curriculum Framework shall be supplemented/to be read along with Regulation for Four Year Undergraduate Programme (FYUGP)/Five Year Integrated Master Programme (FYIMP) (for Academic Year, Academic Calender, Semester, Choice Based Credit System, Examination Rules & Regulation, Admission Rules (selection criteria for admission) and the PhD ordinance.

Illustration of Course Structure/Syllabi

Type of Course: IC-1 (Introductory Course under Science Stream)

Name of the Course: An Introduction to Earth Resources (Water, Soil, Energy and Environment)

Floated by/Proposed by: Department of Chemistry, CUJ

Who can teach this course: Faculties drawn from Science/Engg. discipline.

Overview

Geological processes play critical role in the sustainability of water and energy resources. With increasing population, fast changing life style, the availability of limited natural resources such as water, water cycle, fossil fuel, mineral resources, and uncontaminated soil, the importance of renewable resources, clean water, alternative energy gains importance. This also helps in resource management and making informed decision related to socio-economic and socio-scientific with appropriate resource management. A comparison between sustainable versus non-sustainable use and population growth is also included in the course curriculum in a comparative manner. This course used a feature-based approach to introduce students to Geological processes and Environment. Some topics covered in this module include setting up models related to environment, energy and soil system.

Programme/course objective

Preserving diverse forms of life on land requires targeted efforts to protect, restore and promote the conservation and sustainable use of the Earth's natural resources which includes air, water, soil, minerals, fuels, plants, and animals. The population of human beings has grown enormously in the past two centuries. Use of resources for the continuation of life depends on the careful use of natural resources.

Course features and learning outcome

Class room teaching, Audio video lecture using ICT, Online faculty for query solving

Following learning outcome is expected after completion of course:

1. *Students shall acquire thorough knowledge of basic and advanced ideas, theories and concepts of environmental science and resource management - in National and international context.*
2. *Students can design questions related to higher studies, set forth hypothesis, critically synthesized literature and compose relevant reference papers.*
3. *Students is expected to gain proficiency in environmental literacy and management; they can evaluate basic quantitative information.*

Who can attend/course audience

This course is suitable for students from Science, Social Science and Humanities background. CUJ Students of 1st - 3rd semester can attend the course.

Course eligibility/Pre-requisite

10+2 or Equivalent

Course duration

One Semester

Course structure

Unit-1: Earth and Environment: Origin of Universe, Evolution of earth, Hydrosphere, Lithosphere, Origin of Life, Structure and Components of earth, plate techtonic and continental drifts, Ocenic zones, ocenic currents.

Unit – 2: Ecology and ecosystem dynamics: Concept of ecology (aut, syn), population ecology, community ecology, ecological niche and habitat concept, ecological succession, ecosystem structure, physicochemical and biological components of ecosystem, ecosystem dynamics.

Unit-3: Natural resources and their management: natural resources (mineral, fossil fuel), renewable and non-renewable energy resources: solar, wind, hydrothermal, wind energy, biofuel, tidal energy, global warming, Soil and its importance, conservation and management of soil and water bodies.

Text books & References:

De A. K. Environmental Chemistry, Wiley Eastern
Miller T.G.Jr., Environmental Science, Wadsworth publishing House, Meerut
Environmental Pollution, Monitoring and control, S.M. Khopker, 2007, New Age International
Environmental Science, Cambridge University Press, ISBN: 978-8175963238

(Contents referred from UGC, New Delhi, LOCF syllabus)

Type of Course: IC-2 (Introductory Course under Science stream)

Name of the Course: An Introduction to Chemistry in Everyday Life

Floated by/Proposed by: Department of Chemistry, CUJ

Who can teach this course: Faculties drawn from Science discipline.

Overview

Human being uses Chemistry in everyday life for sustainable development. For example, hemoglobin & myoglobin plays important role in oxygen transport system in the body. Enzymes are responsible for digestion of foods. Safe food habit inculcates good health and growth. Blood pressure, heart problem, etc can be regulated through stress management and right kind of food habits. Vitamins now become an essential part of daily consumption. This course is designed to give an overview of significance of Chemistry in daily life. This course used a feature-based approach to introduce students to Chemical processes and Sustainable living. Some topics covered in this module include setting up models related to Enzyme, Food and Health.

Programme/course objective

The course will focus on the role of chemistry in necessities of daily life such as the chemistry of life, agriculture, food, housing, healthcare, clothing, transport and communications.

Course features and learning outcome

Class room teaching, Audio video lecture using ICT, Online faculty for query solving

Following learning outcome is expected after completion of course:

1. *Students shall acquire thorough knowledge of basic and advanced ideas, theories and concepts of role of chemistry in daily life and related resource management.*
2. *Students can design questions related to higher studies, set forth hypothesis, critically synthesized literature and compose relevant reference papers.*
3. *Students is expected to gain proficiency in chemistry literacy and management; they can evaluate basic quantitative information.*

Who can attend/course audience

This course is suitable for students from Science, Social Science and Humanities background. CUJ Students of 1st - 3rd semester can attend the course.

Course eligibility/Pre-requisite

10+2 or Equivalent

Course duration

One Semester

Course structure

Unit-1: Human body and Respiration: Respiratory enzymes, brief outline of hemoglobin and myoglobin, oxygen transport mechanism in body, co-operativity, Respiration in lower animals, hemocyanine, hemerythrine. Energy production in body, ATP; enzyme responsible for food digestion, mechanism of food digestion, active site of cytochrome c-oxidase.

Unit-2: Chemical aspects of some common health hazards: Anemia, sickle cell anemia, leukemia, blood pressure regulation, blood sugar, arthritis, carbon monoxide poisoning in mines, cyanide poisoning, fluorosis etc. Chemicals from our bodies - antioxidants and cholesterols. Need for vitamin in body, types of vitamins, water soluble and fat soluble vitamins, Vitamin B-12, vitamin C (Cyanocobalamine), D, Vitamin K. Role of minerals in body, iodine deficiency and remedy.

Unit-3 Chemistry of Pollution: Acid rain. Ozone layer. Global warming. Green chemistry, Relevant international conventions.

Text books & References:

Selinger, Ben: *Chemistry in the Marketplace* (5th ed.) Harcourt Brace (1998)
Karukstis, Kerry K. and Van Hecke, Gerald R.: *Chemistry Connections, The Chemical Basis of Everyday Phenomena*, Harcourt/Academic Press (2003}
Luning Prak, Dianne J. and Copper, Christine L., *A Chemistry Minute: Recognizing Chemistry in Our Daily Lives*, *J. Chem. Educ.*, 2008, 85 (10), p 1368

(Contents referred from UGC, New Delhi, LOCF syllabus)

Name of the Course: Understanding India

Floated by/Proposed by: Academics-Dean, CUJ

Who can teach this course: Faculties drawn from Social Sci., Humanities and Sci.

Overview

India's cultural heritage is the most ancient and one of the most extensive and varied through many races and religions that left imprints on the culture leading to cultural diversities. The Culture of India refers to the way of life of the people of India, India's languages, religions, dance, music, architecture, food, and customs that differ from place to place within the country. Culture and its tradition it is very important to understand the evolution of its language and literature like poetry, drama and religious and non-religious writings. Through ages, Science and Mathematics were highly developed during the ancient period in India. Ancient Indians contributed immensely to the knowledge in Mathematics as well as various branches of Science including Medical Science, Ayurveda, Yoga, Astronomy, Astrology, etc. India's rich cultural heritage, it's diversity and it's relationship with neighboring countries through exchange of knowledge and tradition forms a part of this course.

Programme/course objective

The course aims to apprise students regarding Indian Culture, philosophy, society and politics. The course also aim to provide some outlook towards Indian foreign policy, scientific revolution, green revolution and technological progress

Course features and learning outcome

Class room teaching, Audio video lecture using ICT, Online faculty for query solving

Following learning outcome is expected after completion of course:

1. *Students shall acquire thorough knowledge of Indian Culture, tradition and it's rich diversity.*
2. *Students can design questions related to higher studies, set forth hypothesis, critically synthesized literature and compose relevant reference papers.*
3. *Students is expected to gain proficiency in understanding India; they can evaluate basic quantitative information.*

Who can attend/course audience

This course is suitable for students from Science, Social Science and Humanities background. CUJ Students of 1st semester 4 year undergraduate course can attend the course.

Course eligibility/Pre-requisite

10+2 or Equivalent

Course duration

One Semester

Course structure

Unit-1: Indian culture and significance, Society in India through ages: Religion and philosophy (pre-Vedic and Vedic religion, Vedanta and Mimansa School of philosophy), family and marriage in India, position of women in ancient India, Contemporary period: caste system and communalism. Evolution of script and languages in India: Harappan Script and Brahmi Script. Brief idea about Sanskrit literature.

Unit-II: A Brief History of Indian Arts and Architecture: Gandhara School and Mathura School of Art, Hindu Temple Architecture, Buddhist Architecture, Medieval Architecture and Colonial Architecture., Indian Painting Tradition: ancient, medieval, modern indian painting and odishan painting tradition Performing Arts: Divisions of Indian classical music: Hindustani and Carnatic, Dances of India: Various Dance forms: Classical and Regional, Rise of modern theatre and Indian cinema.

Unit-3: Cultural Exchange, Politics and International Relation - Through Traders, Teachers, Emissaries, Missionaries. Indian Culture in South East Asia, India, Central Asia and Western World through ages.

Unit-4: Indian Science – Evolution of Indian Science, Scientist of Ancient/Medieval India (Baudhayan, Aryabhatta, Brahmgupta, Bhaskaracharya, Mahaviracharya, etc.), Modern India (Srinivas Ramanujan, Sakuntala Devi, C.V.Raman, J.C.Bose, H.J.Bhabha, Vikram A. Sarabhai, A.P.J.Abdul Kalam, etc. (highlights of their Scientific works), India's progress in IT, Space, Medical, Engg. Field and discussion regarding some significant developments (*e.g.*, Automation, Green Energy, Vaccine development, Biomedical, etc.), Science and Technology policy – Woman Scientist Scheme, Reduction of Carbon Foot print, Safe drinking water, make in India initiative, etc.)

Text books & References:

A list of Books shall be included in the text books/reference section by the Respective course teachers.

(Contents referred from UGC, New Delhi, LOCF syllabus)

Type of Course: ICV-1 (Introductory Vocational Course - for Science Students)

Name of the Course: Chemical Handling and Safety

Floated by/Proposed by: Dept. of Chemistry/Dean School of Natural Science

Who can teach this course: Faculties drawn from Chemistry/Science

Overview

Chemistry is a branch of Science taught to both Science and Engineering Students. Handling chemicals in Chemistry Laboratory require special knowledge and skill for personal safety as well as lab safety purpose. This course covers the understanding of basics of classification, symbols and labels associated with chemicals, awareness regarding the safe dosage and handling and Informed about the types and the use of different PPE (Personal Protective Equipment) in the chemistry laboratory.

Programme/course objective

The course aims to apprise students regarding basic knowledge about Chemicals, laboratory procedure, safe handling of Chemistry laboratory and Chemicals for safety reasons.

Course features and learning outcome

Class room teaching, Conducting Lab practical (hands on training), Audio video lecture using ICT, Online faculty for query solving

Following learning outcome is expected after completion of course:

1. Understanding the basics of classification, symbols and labels associated with chemicals.

2. Awareness regarding the safe dosage and handling.

3. Possess a working knowledge of the procedures for responding to spillage and minor injuries.

4. Informed about the types and the use of different PPE (Personal Protective Equipment)

Who can attend/course audience

This course is suitable for students from Science and Engineering. CUJ Students of 1st Year, 4 year undergraduate course can attend the course.

Course eligibility/Pre-requisite

10+2 or Equivalent/1st Sem - Science, Engineering Students/Students having aptitude to learn Chemistry/Chemical Sciences.

Course duration

One Semester

L	T	P	Cr
2	0	1	3

Unit-I

Types and classification of chemical hazards, Signs and Labels, Chemical databases, Laboratory protocols

.

Unit-II

Safe storage, handling, transport, and disposal of chemicals, Engineering Controls, Routes of entry of chemicals

Unit-III

MSDS (Material Safety Data Sheet), Flammability, Control of flammable substances, Types and the use of different PPE (Personal Protective Equipment)

Recommended books

1. Alaimo, R. J. Handbook of Chemical Health and Safety American Chemical Society (2001)

2. Fulekar, M. H. Industrial Hygiene and Chemical Safety Wiley India Pvt. Ltd (2020)

3. Crowl, D. A.; Louvar, J. F. Chemical Process Safety: Fundamentals with Applications 3rd Edition, Pearson Education India (2013)

Type of Course: CE-1 (Community Engagement)

Name of the Course: Sports

Floated by/Proposed by: Sports Wing of the University/Dean - SW

Who can Conduct this course: Sports wing of the CUJ

Overview

Sports is recognized as the integral unit of the NEP-2020. Sports provides an investment in Health, Education and Institutional activities. It is also a pride for a nation to become a healthy Nation by promoting Sports. It engaged community, improve health, economic activities, develop stronger inter-personal relationship. This course provide an platform to the young students of CUJ to develop community engagement through sports and a healthy mind and body.

Programme/course objective

The course aims to appraise student's different kind of sports like Football, Hockey, Cricket, Kabadi, Kho-Kho, etc., in addition to Yoga and Physical activities. Sports psychology, principle of physical literacy, etc.

Course features and learning outcome

This course is basically activity oriented. Knowledge about Sports, Yoga, Physical Activities, Sports Technology, shall be provided by domain experts.

Following learning outcome is expected after completion of course:

1. Understanding the basics of theory and traditional aspects of sports

2. Sports technology available in various Games.

3. Understanding a drug free sporting enviroment.

4. Sports performance Analysis

Who can attend/course audience

This course is suitable for students from all branches of studies

Course eligibility/Pre-requisite

10+2 or Equivalent/Physical fitness

Course duration

One Semester

Course (indicative; domain experts may add more to the subject)

1.Sports Performance Analysis

2. Yoga and physical activities

3. Rules and regulation of sports

4. Sports technology available in various games.

5. Theory and practical aspects of traditional games.

6. Sports psychology

7. A drug free sporting environment.

Implementing the Scheme: A graphical Version

Admission Unit

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Choosing Mentor/mentor(s) for Guiding about the courses/pre-requisites

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Language Course	Introductory Course	Community Engagement

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Based on various Introductory Courses/Pre-requisites/Introductory vocational courses, the Student shall choose the higher level courses relating to Major/Minor , based on eligibility/criteria, if any (for 3rd and 4th Semesters)

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5th and 6th Semester – Higher level courses, Industrial Orientation/Practicum/extensive field study/higher level vocational courses

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7th, 8th Semester: Mostly Advanced Courses and Research/Research Internship/Project Development, etc.

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Counseling Cell of the University for Career Options for Higher Study/Advanced Training/Job/Self Employment/Entrepreneurship, etc.