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## RESEARCH ARTICLE

# CURRICULUM AND CREDIT FRAMEWORK FOR UNDERGRADUATE PROGRAMMES AND UPCOMING CHALLENGES FOR IMPLEMENTATION

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### ABSTRACT

NEP-2020 has prepared an educational vision for the country. It wants India to become a global knowledge superpower (*Vishwa guru*) from a vibrant knowledge society. Therefore, NEP-2020 has emphasized on making education more holistic and effective, linking vocational education with general education, and strengthening the fundamental pillars of education i.e., access, equity, quality, affordability, and accountability. Achieving the goals requires certain pathways, and the Curriculum Framework is one of those pathways that move the nation's education system forward. UGC has developed a Curriculum and Credit Framework for Undergraduate Programmes to make a good, creative, thoughtful, and skillful person in this knowledge-based society and to fulfill various recommendations of NEP 2020. This paper highlights the proposed Curriculum, its Credit Framework for Undergraduate Programmes and its various silent features. Also, the challenges that may arise in its implementation at the ground level have been discussed in detail. Appropriate suggestions have been given on how to overcome the various challenges.

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## INTRODUCTION

Education started with the advent of the human race in the world. People are learning every moment, every day. Learning is a never-ending process. But with the passage of time the purpose of education has changed, and so has the way of learning. Every country has reformed its education system from time to time to protect its existence and for philanthropic work for its citizens, and India is not different. Since India's independence, various reforms have been seen in the education policies to improve the country's education system. As a result of these reforms, the country got a new Education Policy after 34 years of waiting. The National Education Policy-2020 envisages an India-centered system of education that provides an excellent knowledge society and high-quality education to all (Aithal & Aithal, 2020b). One of the main priorities of the Government of India is the proper implementation of NEP-2020 and the transformation of the country's education system from the old Macaulay-based education system (Kathi *et al.*, 2022). Achieving the goals of NEP -2020 requires a proper plan, and one part of this plan is the National Curriculum Framework. Chairperson of National Steering Committee for National Curriculum Framework K. Kasturirangan considers NCF-2022 as a key component for implementing NEP-2020. Shri Dharmendra Pradhan, Hon'ble Minister of Education, Government of India, 20th October 2022, published the National Curriculum Framework for Foundational Stage-2022. On 12th December, 2022 UGC published Curriculum and Credit Framework

for Undergraduate Programmes (CCFUP). This framework was developed by an expert committee under the chairmanship of Prof. R. P. Tiwari (CCFUP, 2022). A curriculum framework addresses a variety of educational programmes, acquainting society with what the next generation is being taught and why (Thapar, 2005). Before this Curriculum Framework, four more National Curriculum Frameworks were published in 1975, 1988, 2000, and 2005 respectively. Each curriculum framework had specific features and was designed to achieve specific goals. Currently, the document published by the UGC has discussed the curriculum as well as the credit framework for the undergraduate level. There is a need for an in-depth discussion on how this framework will be able to guide various Higher Education Institutions involved in undergraduate programmes. Also, what needs to be done for its effective and efficient implementation, and what are the possible obstacles that should be looked into.

**Key features of CCFUP:** The 32 pages document named "Curriculum and Credit Framework for Undergraduate Programmes" published by UGC has been analyzed here and the key features that come up after the analysis are discussed below.

This framework has facilities of multiple entry and exit options which can be considered as its strength. This option is expected to reduce the drop-out rate and it can be said that many students will benefit from this flexibility.

**Table 1. Restructured various Undergraduate Programmes**

Type of programmes	Condition for awarding degree	Minimum credit requirements
UG Certificate	Students who will opt to exit after completing one year and secures 40 credits and additionally will do a 4 credits vocational course during the summer vacation of the first year.	44
UG Diploma	Students who will opt to exit after completing two years and secures 40 credits and additionally will do a 4 credits vocational course during the summer vacation of the second year.	84
3-year UG Degree	Students who will complete three years successfully with a major discipline and secure 120 credits.	120
4-year UG Degree (Honours)	Students who will complete four years successfully with a major discipline and secure 160 credits.	160
4-year UG Degree (Honours with Research)	By securing 75% marks in the first six semesters, students will do a research project or dissertation in the fourth year and secure 160 credits, of which 12 credits are Research Project/Dissertation work.	160

**Table 2. Relationship between activities and credit hours**

Types of activities	Time	Credit
Lecture	1 hour/week	1
Tutorial	1 hour/week	1
Practicum or Laboratory work	2 hours/week	1
Seminar	2 hours/week	1
Internship	2 hours/week	1
Studio activities	2 hours/week	1
Field practice/ Project	2 hours/week	1
Community engagement and service	2 hours/week	1

**Table 3. Category of courses and their curricular components**

Category	Curricular components	Minimum credit requirements (for UG Programmes)	
		3 years	4 years
Major (Core) Stream	Major stream gives students the opportunity of in-depth study of a particular subject or discipline. Advanced-level disciplinary /interdisciplinary courses, courses in research methodology, project/dissertation, seminar presentation, etc. are the main curricular components of the major stream.	60	80
Minor Stream	Students can choose a minor from among the disciplinary/interdisciplinary courses. Vocational Education and Training will fall within the 'minor' stream though it can be related to any major or minor discipline.	24	32
Multidisciplinary	Some broader curricular components which come under multidisciplinary courses according to CCFUP are: -"Natural and Physical Sciences, Mathematics, Statistics, and Computer Applications, Library, Information, and Media Sciences, Commerce and Management, Humanities and Social Sciences".	09	09
Ability Enhancement Courses (AEC)	The main components are Modern Indian Language (MIL) and English language.	08	08
Skill Enhancement Courses (SEC)	These courses emphasis on practical skills, hands-on- training, soft skills, etc. Institutions will design courses according to the availability of institutional resources and students' needs.	09	09
Value Added Courses common for all UG	Some broader components under these courses are:-Understanding India, Environmental science/education, Digital and technological solutions, Health & Wellness, Yoga education, sports, and fitness.	06-08	06-08
Summer Internship	Every student has to do an internship. For the internship, an opportunity will be given to go to a firm, local industry, local government organizations body, research lab, media organization, business organization, health and allied areas, etc. Also, it includes Community engagement and service, Field-based learning/minor projects, etc.	02-04	02-04
Research Project / Dissertation	In the 4th year i.e., 7th and 8th semesters, the students will work on a research project under the guidance of a faculty member and publish it in a peer-reviewed journal or present it in a conference/seminar.	-	12
Total		120	160

Notes: - 4- year UG degree (Honours) students will take 3 courses for 12 credits in lieu of research work (CCFUP,2022). For multidisciplinary courses, students will no longer be able to undertake the courses that they have read at the Higher Secondary Level and chosen under the Major and Minor Stream.

**Table 4. Level of courses and it's codes**

Code	Level
0- 99	Pre-requisite level courses
100- 199	Foundation or Introductory level courses
200- 299	Intermediate-level courses
300- 399	Higher-level courses
400- 499	Advanced level courses
500- 599	For the 1st year of 2- year master's degree programme
600- 699	For the 2nd year of 2- year master's or 1- year master's degree programme
700- 799 above	Doctoral level courses

Table 5. Semester-wise and broad course category-wise structure

Semester	Major (Core)	Minor	Multidisciplinary Courses	AEC (Language)	SEC/ Internship / Dissertation	CVAC	Total credits
I	100 level	100 level	(1 course)	(1 course)	(1 course)	(1 or 2 courses)	20
II	100 level	100 level	(1 course)	(1 course)	(1 course)	(1 or 2 courses)	20
	Students who will opt to exit after completing one year and secures 40 credits and additionally will do a 4 credits vocational course during the summer vacation of the first year will be considered as UG Certificate awardees.						40
III	200 level	200 & above	(1 course)	(1 course)	(1 course)	-	20
IV	200 level	200 & above	-	(1 course)	-	-	20
	Students who will opt to exit after completing two years and secures 40 credits and additionally will do a 4 credits vocational course during the summer vacation of the second year will be considered as UG Diploma awardees.						80
V	300 level	200 & above	-	-	Internship	-	20
VI	300 level	200 & above	-	-	-	-	20
	Students who will complete three years successfully with a major discipline and secure 120 credits will be considered as 3-year UG Degree awardees.						120
VII	400 level	300 & above	-	-	-	-	20
VIII	400 level	300 & above	-	-	Research project / Dissertation	-	20
	students who will work on a research project and secure 160 credits will be awarded a UG degree (Honours with research)						160

(AEC - Ability Enhancement Courses, SEC - Skill Enhancement Courses, CVAC - Common Value-Added Courses)

Also, in CCFUP, UG Degree Programmes with Double Major, Interdisciplinary UG Programmes, and Multidisciplinary UG Programmes are mentioned that will open new doors to students and will not have any rigidity for discipline choice.

**Relationship between activities and credit hours:** A course can be in a combination of any activities provided in the Table 2. For example, a 4 credits course consists of a 3 credits lecture and a 1-credit studio activity. In that case, there will be 3 lectures of 1 hour per week and 1 studio activity of 2 hours. According to CCFUP, a semester must be at least 15 weeks. So those 4 credits courses will have 45 hours of lectures and 30 hours of studio works in a complete semester. This CCFUP has very nicely illustrated the relationship of credit hours with various types of teaching-learning-related activities. This will be expected to guide the various Higher Education Institutions to maintain the relationship between activities and credit hours.

At present time the emphasis is on outcome-based learning. Several graduate attributes are discussed in the CCFUP. A graduate student will have in-depth knowledge in disciplinary/interdisciplinary areas of study and will be able to use this knowledge in more border aspects and link with various related fields. Also, complex problem-solving, critical thinking, creativity, communication skills, research-related skills, leadership quality, digital and technological skills, learning how to learn skills, values, ethics, empathy, environment awareness, etc. will be inculcated into an individual who goes through various undergraduate Programmes. Now the future will tell how much the courses described in the above table will help to fulfill all these outcome-based learning objectives. Semester-wise courses and credits distribution are very well presented in CCFUP. After 2 semesters students will have the flexibility to change their major. It states that 40% of the total credit a student can earn through online courses if those online courses are approved by the department and the institution. That is, an outline of blended mode learning can be seen here. Also, a student can come back within 3 years of exit and complete the UG programme within 7 years in total.

Students will have the flexibility to move from one institution to another. It has also been said to encourage students to enroll in NSS, NCC, etc. activities.

#### Some upcoming challenges for implementation

- **Physical Infrastructure:** - According to CCFUP, research project/dissertation work will be done in the fourth year of the undergraduate Programmes. But the percentage of universities, colleges, and stand-alone institutions having connectivity through the national knowledge network (NKN) is 55%, 23%, and 23% respectively (AISHE 2019-20,2020). High-speed internet and access to various journals are needed for research work. It is clear from the above statistics that these have not been developed yet. 85% of universities, 82% of colleges, and 93% of stand-alone institutions have laboratories. But in this case, a question remains how many laboratories have high-quality and various experiment research materials? The infrastructure of libraries, computer centers, etc. should be developed according to research work.
- **Human Resources:-** Education needs quality human resources to move forward. The CCFUP clearly states that for a 4-year UG degree (honours with research) HEIs required at least two faculty members who have experience in supervising Ph.D. students. Even if there are such faculty members in the universities, there are doubts about how many there are in the colleges. As a result, many students will be deprived of the opportunity to do research work at the undergraduate level. Besides, the workload on the faculty members of all the HEIs where this programme will run will increase. The Pupil-Teacher ratio (PTR) in colleges and universities in India is 28 for regular mode (AISHE 2019-20, 2020) which is higher than in many other developed countries. So, the lack of manpower may create a big obstacle in the implementation of this framework.
- **Awareness:-** Any new policy or framework implementation will be possible only when awareness is developed among all the stakeholders associated with it. If students are not made aware of CCFUP, they will not get benefit from it. It seems that proper implementation of

CCFUP will not be possible if the administrators of HEIs and those who will implement it at the ground level i.e., faculty members are not aware.

- **Financial Resources:-** 4.64% of GDP has been spent on education in the academic year 2020-21 (Analysis of Budgeted Expenditure on Education, 2022). According to the recommendations of NEP-2020 government should spend 6% of the GDP on education. If the government does not spend, then it will not be possible to provide proper facilities for various types of infrastructure such as libraries, computer centers, laboratories, inclusive institution buildings, ICT labs, high-speed internet, etc. As a result, the implementation of this Curriculum and Credit Framework may face problems.
- **Teacher Education: A missing aspect:-** If a country cannot develop quality teachers, then it will not be possible to move the country's education system forward in a healthy way. Emphasis on teacher education is very important to produce quality teachers. But the Curriculum and Credit Framework for Undergraduate Programmes published by UGC has not highlighted any undergraduate programmes related to teacher education. In this case, teacher education institutions will miss proper guidance for curriculum and credit framework implementation.
- **Hybrid mode of Education: A unclear vision:** - CCFUP gives a hint of earning 40% credit through online mode. Only 40% of universities, 22% of colleges, and 22% of stand-alone institutions have connected through NMEICT (AISHE 2019-20, 2020). Although the blended or hybrid mode of education is the future of India in the context of education, the existing digital divide in India will make the education system worse if India goes through with the blended mode (Pal, P., et al, 2022). So according to the path shown in this framework, HEIs can face many problems to start the blended mode of education.
- **Incomprehensibility of shifting Institutions:** - The flexibility given to move from one institution to another is a great initiative and students seem to get benefit from it. However, no guideline has been provided regarding how the students will move, how their admission process will be, and how the number of seats will be. As a result, higher education institutions will face a big challenge while implementing it.
- **Skill Enhancement Courses (SEC): A concern of uniformity:-** Skills enhancement courses (SEC) of 9 credits have been mentioned for UG Programmes in CCFUP through which the students will impart various skills and enhance their employability. Institutions may design the courses according to their own resources and students' needs. As a result, it is believed that different institutions in different parts of India will launch different courses like their own. So, the possibility of seeing uniformity in these courses in the whole country is less. If an institution does not have proper resources, it seems that it will be difficult to design courses according to the needs of students.
- **Summer internship and some obstacles:-** Prior to this, internship programmes are running for various professional courses. But now it is said to introduce internships for all UG programmes on a large scale which is expected to bring a very good change in the education sector. But when it is launched on large scale, more external organizations such as industries, firms, business organizations, research labs, media organizations, local govt. organization, health and allied areas, etc. may be added to this programme. According to CCFUP an expert from the external entity may supervise this internship programme. Now the government has to be sure whether these external entities are aware of it, whether they want to take responsibility, and whether they can give enough time for this programme otherwise HEIs will face enough obstacles to implementing the internship programme.

Options of multiple entry and exit, moving from one institution to another institution, moving from one discipline of study to another discipline of study, the option of an alternative mode of learning, etc. have been discussed in CCFUP, through which the students will get benefit a lot. The effort given by this framework for beautifully linking general education with vocational education must be applauded. However, this type of framework is in place in India for various 4-year professional programmes such as B. Tech, but if it is to be introduced for all UG programmes, initially several challenges will have to be faced. Regular seminars, conferences, etc. should be organized in the institutions to increase awareness among the various stakeholders of education. There will be special attention needs to be given to improving the infrastructure of libraries, laboratories, computer centers, ICT labs, internet services, etc. Also, as per the NEP-2020 recommendation, 6% of the GDP should be spent on education as soon as possible. A separate curriculum and credit framework for teacher education should be published soon so that teacher education institutions can get a proper guide to run various undergraduate programmes successfully. As soon as all the challenges are overcome and proper implementation is done, the education system of the country will improve and some of the problems related to education will be solved soon. Implementation of this Curriculum and Credit Framework is necessary for India to take a step further toward becoming a global knowledge superpower (*Vishwa guru*).

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## CONCLUSION

Flexibility is the main feature of this Curriculum and Credit Framework for Undergraduate Programmes.