GOVT. HOLKAR (MODEL AUTONOMOUS) SCIENCE COLLEGE, INDORE

(An ISO 9001:2015 & ISO 14001:2015 Certified Instituion)

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B. Emancipation of Digital Transformation of Education : Blending Pedagogy with Technology

I - Curriculum Development & Enrichment Policy

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Curriculum Development & Enrichment Policy

Content

Govt. Holkar (Model, Autonomous) Science College, Indore

CURRICULUM

DESIGN, DEVELOPMENT AND IMPLEMENTATION

POLICY

Reviewed By:

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Previewed By:

IQAC

Govt. Holkar (Model, Autonomous) College, Indore

Govt. Holkar (Model, Autonomous) Science College, Indore

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FOREWORD

Curriculum design, development, and implementation are critical aspects of education that determine the quality and effectiveness of teaching and learning. A well-designed and implemented curriculum can enhance student learning outcomes, promote critical thinking, and foster creativity and innovation.

This manual on curriculum design, development, and implementation aims to provide a comprehensive guide for educators, curriculum developers, and policymakers seeking to create effective curricula. It covers a broad range of topics, including the principles of curriculum design, the process of curriculum development, and the strategies for curriculum implementation and evaluation.

The manual also explores the practical implications of curriculum design, development, and implementation in various educational contexts, such as K-12, higher education, vocational education, and adult education. It provides practical tools and case studies to help readers apply the principles and strategies of curriculum design and development in their own educational settings.

It is our hope that this manual will serve as a valuable resource for educators, curriculum developers, and policymakers seeking to improve the quality and relevance of education. By creating effective curricula, we can equip students with the knowledge, skills, and values they need to succeed in a rapidly changing and complex world.

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Principal

Govt. Holkar (Model, Autonomous) Science College, Indore

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Curriculum Design and Development Policy

Government Holkar Science College makes an effort to provide curricula and activities that are consistent with the institution's values, objectives, and mission. Students have a great opportunity to study, realise, and maximise their academic potential. This strategy also gives students the chance to "co-create" the learning experience, maintaining acceptable academic standards. By using modern and innovative methods of curriculum design, we hope to constantly monitor and enhance the academic excellence in view of the latest requirements as envisaged in the light of NEP-2020. The fundamental principle of the students' holistic development is followed by the policy for developing the curriculum.

1. Introduction

The term "curriculum" typically refers to the knowledge and abilities that students are anticipated to learn through conversations, experiences, scheduled and unscheduled activities, and events. It is focused on both the process and the content. What is required of learners to study is referred to as content. Process is the organisation of the teaching materials given to the students. In addition to the books, reading materials, and ICT based materials provided in a course, the process also includes the units and lessons that teachers teach, the assignments and projects that students are given, and the many assessment techniques used to gauge student learning. This needs to be structured so that students learn new information and concepts, acquire new abilities, and change their attitudes.

The method through which a curriculum helps students meet their learning objectives is called curriculum delivery. Teaching, learning support, counsel, direction, engagement, mentorship, participatory and collaborative learning are all processes that go hand in hand into delivering a curriculum. Feedback, assessment, and counselling are further different procedures included in curriculum delivery along with the development of thinking abilities. With their involvement in workshops for syllabus revision and as members of academic councils, boards of studies, and committees on syllabi, our faculties actively participate in curriculum creation. The institution's policy and procedure were created with the goal of implementing institutional curriculum for student learning with following parameters: learner-centric, 2. constructively aligned for knowledge, skills and capabilities, 3. reflective of threshold standards 4. Inclusivity focussed 5. future aligned.

2. Policy Statement

The curriculum design, development, and delivery at Govt. Holkar (Model, Autonomous) Science college, Indore, are based on a logical, sequential approach that guarantees consistent teaching and learning outcomes and provides a clear framework for evaluating student progress across year levels. The policy was created using evidence-based teaching strategies, and it is aligned with assessment and reporting standards.

3. What is Curriculum Design & Development?

The planned, deliberate, and intentional arranging of the instructional units of a curriculum inside a class or course is referred to as curriculum design. To put it another way, it's a system for teachers to set up their lesson plans. As teachers design a curriculum, they determine what will be done, who will execute it, and what schedule to follow.

Curriculum development is the methodical process used to create better curricula for an Institution. As the world continues to evolve, it is essential to incorporate new discoveries into educational curricula. Also being created are innovative teaching techniques and initiatives to improve students' educational experiences. Active learning and blended learning are two examples of this. So, an institution has to have a roadmap plan in place for identifying these changes and having the ability to include them in the college curriculum.

Every curriculum is developed with a specific educational goal in mind. Although improving student learning is the primary goal of curriculum design, but equally important is to ensure that learning objectives are coordinated and build upon one another from one level to the next. If an advanced level curriculum is developed without taking into account prior foundation knowledge of the topic, the students may encounter major challenges.

4. Purpose of Curriculum Design and Development

The collection of tasks, exams, and academic material used in a classroom to convey knowledge is referred to as a curriculum. For a curriculum design to be practical for use, it must meet the following requirements:

- **Statement of Purpose:** What driving force led to the development of the curriculum?
- **Outcome Statement:** How will students use the knowledge they learn from the curriculum?

- **Key Resources:** What instructional tools will the instructor utilise to help students grasp the concept?
- **Framework for the Strategy:** What instructional strategy will be used in the classroom?
- **Verification Technique**: How can the efficiency of instruction be evaluated?
- **Course Syllabus:** What is to be taught during the course duration and by when the curriculum will be completed?
- **Credibility outside campus:** How will the students demonstrate what they have learnt in class in through their projects /internship?

  These elements ought to be included in every curriculum, for thorough education.

5. Models of Curriculum Design and Development

Curriculum design refers to the structure or organization of the curriculum, and curriculum development includes the planning, implementation, and evaluation processes of the curriculum. Curriculum models guide these processes.

What are the Three Models of Curriculum Design?

The three models of curriculum design are - subject-centered, learner-centered, and problem-centered design.

A. Subject-Centered Design

A curriculum that is subject-centered places an emphasis on a particular subject or area, such as biotechnology, Chemistry, or mathematics. This method of curriculum design typically prioritises the subject over the learner. It is the type of standardised curriculum that institutions employ most frequently.

Teachers create lists of subjects or specific topics and how they should be studied. Higher education institutions like universities and colleges typically use this method of instruction, where professors focus on a particular subject or discipline.

This form of curriculum design's only drawback is that it is not student-centered and gives less consideration to personal learning preferences. Students who are not attentive risk falling behind, which may have an impact on their engagement and drive.

B. Learner-Centered Curriculum Design

On the other hand, learner-centered curriculum design considers each learner's requirements, interests, and ambitions. In other words, it takes into account the uniqueness of each student and adapts to meet their needs. Giving students authority over their education and giving them the flexibility to make decisions about it is the aim of learner-centered curriculum design.

The lesson plans in a learner-centric curriculum are diversified and give students the freedom to choose their own projects, lessons, and activities. As a result, students could feel motivated and prodded to continue being engaged in the lessons they are studying.

The varied nature of content creation of this form of curriculum development presents a challenge. It is the duty of the instructor to devise differentiated instruction that meets the needs of each student's learning and/or to select resources that aid in that education. Teachers has to develop innovative pedagogies that makes the curriculum delivery inclusive in nature in order to make it learner-centeric.

C. Problem-Centered Curriculum Design

Like learner-centered design, problem-centered curriculum design is a subset of student-centered design. A problem-centered curriculum's major objective is to teach learners how to assess a situation and come up with a solution. As a result, they are exposed to issues from the real world, which helps them acquire transferable skills.

By problem-centered curriculum design, which also promotes innovation and creativity in the students, the relevance of the curriculum is increased. The problem with this approach to curriculum creation is that learning styles aren't usually taken into consideration.

6. Nurturing Graduate Attributes:

We focus on graduates:

- Who are globally and socially responsible, culturally aware and understand the ethical impact of decision making.
- Nurture graduates who are resilient, intellectually curious and critically reflective lifelong learners. Graduates who can employ analytical, creative and evaluative skills to investigate problems and propose viable solutions.
- Who can work in groups and communicate effectively to a range of audiences.
- who have high degrees of digital capability to responsibly create, communicate and collaborate online.

Our graduates should have the knowledge, skills and attitudes as we collaborate closely with industry and other stakeholders. Therefore we want them to enrich them with the attributes to succeed in their profession and become leaders in their specific fields.

6.1. Academic Excellence

- In-depth and extensive knowledge, understanding and skills in their chosen discipline and understanding of the interconnectedness of different disciplines.
- Attempt to contribute in the creation of new knowledge and understanding through research and inquiry.
- Ability to apply knowledge to the real world problems.
- Ability to work with others in a group setting and solve new challenges.
- Employ up-to-date and appropriate knowledge and skills.
- Solve theoretical and practical problems by applying creativity, critical thinking, analysis, and research abilities.
- Work as a team, negotiate, and settle disputes;
- Show initiative and drive, and use organisation abilities to schedule and manage their workload.
- Take pride in their moral character, both within and outside of work.

6.2. Communication Skills

- Ability to participate in fruitful discussions and debates;
- Ability to develop suitable communication style, methods, and resources;
- Ability to communicate successfully for various reasons and in various situations.

6.3. Leadership Qualities and Personality Development

- Understanding one's own strengths and weaknesses
- A capacity for self-reflection, self-discovery, and personal growth.
- A conscious use of self-control in both daily life and work.
- Comfortable taking risks and tackling problems
- The capacity to start and carry out positive change in their professions, workplaces, and communities;
- The capacity to participate in significant public dialogue with a keen knowledge of community needs.

6.4. Global Outlook

We support students to gain the knowledge and confidence to be global citizens. We try to inculcate in them:

• An understanding of social and civic responsibilities and readiness to accept them.
• An awareness and appreciation of social and cultural diversity and secularism.
• An awareness and appreciation of human rights, equity and ethics.

Thus the graduates from our institute can:
• Think comprehensively about issues in their profession.
• Implement a balanced approach across professional and international boundaries.
• Understand issues in their profession from the perspective of other cultures.
• Communicate effectively in diverse cultural and common settings.
• Make resourceful use of technology in their learning and professional lives.
• Imbibe moral and ethical behavior in their professional and personal lives.

7. Curriculum Design and Development Strategies

Following framework has been introduced from the academic year 2021-2022 under NEP-2020 for UG in the curriculum design.

Table : Structure for Undergraduate Programme (Ordinance 14(A) NEP-2020): UGC CBCS System for Govt. Holkar (Model Autonomous) Science College, Indore

		Main Faculty (As per pre-requisite)			Any Faculty	Skill Enhancement Course (SEC)	Ability Enhancement Course (AEC)	Field Project / Internship / Apprenticeship / Community engagement and service	Credits	Qualification Title (Credit Requirement)
		Subject I		Subject II	Subject III					
Level	Semester	Major		Minor	Generic Elective	Vocational Course		# Inter / Intra Faculty		
		Core	DSE							
Level 5	1	1 (6 Credits)		1 (6Credits)	1 (4 Credits)		1 (4 Credits)		6+6+4+4=20	(40) Undergraduate Cetrificate in Main Faculty
	2	1 (6 Credits)		1 (6Credits)	1 (4 Credits)		1 (4 Credits)		6+6+4+4=20	
Level 6	3	1 (6 Credits)		1 (6Credits)	1 (4 Credits)	1 (4 Credits)			6+6+4+4=20	(80) Undergraduate Diploma in Main Faculty
	4	1 (6 Credits)		1 (6Credits)	1 (4 Credits)	1 (4 Credits)			6+6+4+4=20	
Level 7	5	1 (6 Credits)	1 (4 Credits)			1 (4 Credits)		1 Field Project / Internship / Apprenticeship (6 Credits)	6+4+4+6=20	(120) Bachelor Degree in Main Faculty
	6	1 (6 Credits)	2 (4 Credits) + (4 Credits)					1 Field Project / Internship / Apprenticeship (6 Credits)	6+4+4+6=20	
Level 8	7	1 (6 Credits)	1 (4 Credits)	1 Research Methodology (4 Credits)				1 Field Project / Internship / Apprenticeship (6 Credits)	6+4+4+6=20	(160) Bachelor Degree (Honours) in Main Faculty Bachelor Degree (Research) in Main Faculty
	8	1 (6 Credits)		1 (4 Credits)				1 Field Project / Internship / Apprenticeship (10 Credits)	6+4+10=20	
Total		48 Credits	16 Credits	32 Credits	16 Credits	12 Credits	08 Credits	28 Credits	160 Credits	

The curriculum design & development in imparting quality education is unsurmountable. Systematic & meticulous curriculum design is the first step towards quality education. This has been the motto of the HEI right from the

start. This is evident from the fact that the HEI implemented learning outcome-based curriculum framework in 2018 itself and is further enriched & updated through the analysis of feedback obtained from the stakeholders, especially the learners. The curriculum is designed to cater to the local/national/ regional/global developmental needs. To identify the needs, feedback from the stakeholders like students, parents, employers, teachers and alumni is sought through interaction, field study, expert opinions, industry-academia interface meetings, and the alumni feedback and analysed. It includes interdisciplinary and multidisciplinary and value-added courses. Adequate flexibility in selecting Major (Core & Discipline Specific Elective)/ Minor/Generic electives /Skill enhancement courses (vocational courses)/ Ability enhancement Courses at UG level and electives at PG level by offering a good number of courses is given. The HEI course structure ensures the guidelines of the CBCS system. No. of hours for each unit are well distributed as per norms of UGC.

The HEI plans its credit distribution specific to the disciplines and type of courses. The structure of each program is so designed to ensure distribution of credits as per the content of the course. The programme learning outcomes and course learning outcomes are predefined for all the programs and courses and is prepared by the Departmental Curriculum Development Committees (CDC). Thereafter the approval is sought from the Board of Studies and Academic Council. The course-wise learning outcomes are designed in such a way as to reflect the outcomes of the programme. The unit-wise distribution of teaching hours is planned according to the credits of the courses. Annual updation of contents of the curriculum as per the latest developments in the associated areas are carried out & additional references and suggested readings are provided accordingly. The HEI focuses on learner centric pedagogy with special emphasis on experiential, participative and problem-solving techniques using both ICT as well as conventional modes encompassing Revised Bloom's Taxonomy and Sustainable Development Goals -2030. Impetus is laid on incorporation of 21st century skills in the teaching pedagogy.

Evaluation criteria is prepared for different types of courses like theory, skill-based, Value based, practical, dissertation, internship and field trip. The learning outcomes of each course is monitored and assessed through a continuous and comprehensive formative evaluation system and summative e end-semester examination. Now, the efforts will be made to provide training to implement digital pedagogy and digital evaluation tools. Digital creative tools are being included in the curriculum to meet the challenge of digital era.

Teaching through cooperative and collaborative approaches are being included in the present curriculum.

The features of the GHSC's curriculum design are as follows:

I. **Learner Centric Methodology:** The syllabus is designed such that the learner's practical knowledge foundation is strengthened. It will give students practical skills and industry expertise in addition to theoretical understanding. Promoting "True Learning" while discouraging "Rot Learning" is the institution's preferred aim. The use of tutorials, assignments, debates, quizzes, presentations, case studies, projects, practical assessments, viva-voice, and many other contemporary tools helps students quickly increase their learning capacity.

II. **Industry-oriented Syllabus:** Syllabus is designed with compulsory internship options or industrial/educational Tours with focus to promote awareness related to industrial procedures and work cultures in order to improve their employability potential. In-house theory and practical classrooms and laboratories. They are more equipped for their career chances after completing their studies thanks to this practise. Such industry-integrated curriculum increases their chances of finding employment.

III. **Precise statement of learning objectives:** To ensure that the students are fully aware of the programme and course learning objectives, they are stated at the beginning of the semester. The students are made aware of how they will learn throughout the course, what will be its outcome, and what they will be able to do once the course is over. From the very first day, these questions are the focus. The institution also gives option to students for change of programme/course based on availability after admission, if after some time student wants to shift to a course that matches their skills and interests. So, during the orientation sessions, the newcomers are briefed about various learning objectives on which the science college puts its thrust on. During beginning of various courses, teachers discuss the benefits of particular courses for the future and the learning process.

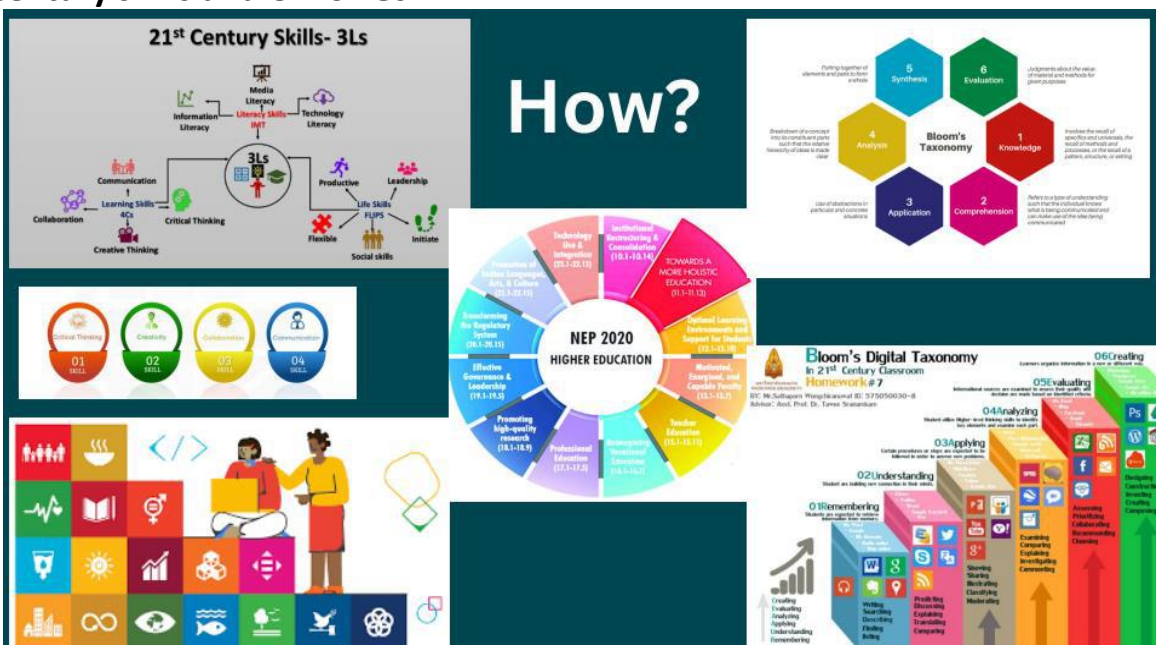
IV. **Research Oriented Syllabus Design:** The essence of learning is research. The institution places a lot of emphasis on research and encourages staff members and students to engage in it. Every programme as well as group of learners has various learning demands and challenges. Thus, the institution promotes

research-oriented activities and builds a syllabus that should also be centred on recent findings and best practises in the field.

V. **"Learn by Doing" Approach:** The institution encourages students to "Learn by Doing" in order to build a strong foundation of practicum expertise and a provides its students hands-on learning opportunities with the help of well-equipped labs and infrastructure.

VI. **Holistic Approach:** The idea of providing “Holistic Development" to the students serves as the driving element for creating the syllabus. With incorporating NEP-2020 from the session 2021-2022, the institution constantly works to promote co-curricular as well as extra-curricular activities among students in addition to academic development. As envisaged by **His Highness Maharaja Shivaji Rao Holkar** during forwarding the proposal of The Holkar College in 1891, it was quoted that, **For the better encouragement of liberal education in Central India, there shall be established at Indore, a college to be styled “The Holkar College”.**

Figure: Curriculum delivery inclusive of NEP-2020, Bloom’s Taxonomy, 21st Century skills and UN-SDGs



VII. **Continuous revision and upgradation:** The curriculum is continually revised in light of input from respected academicians, industry experts, and other stakeholders. This makes it easier to spread the present transformative trend. The design of the syllabus is closely correlated with the needs of the industry.

VIII. **Future Focused:** A future focussed curriculum enables students to develop their employability readiness and to develop the knowledge, skills and qualities needed to make a positive contribution to sustainability in local and global communities. It also embeds the UN Sustainable Development Goals through its various activities to promote ethical and environmental responsibility, including an understanding of sustainability in its holistic concept.

IX. **Inclusivity focussed:** An inclusive curriculum provides all students, regardless of background, are provided with an equal opportunity to achieve the learning outcomes of their course, and positively values diversity.

8. Curriculum Delivery Strategies

The formal method for achieving targeted educational goals is the curriculum. Equally important is its implementation, thus a proper coordination between the people who developed the programme and those in responsibility of implementing it is very crucial. The successful implementation of the curricular programme depends on the cooperation and participation of all faculty. The institution has a precise, sequential framework for delivering the curriculum that guarantees uniformity in the teaching, learning, and assessment processes and provides a defined benchmark for assessing student progress. Teachers, students, the principal, and other stakeholders are among those mentioned.

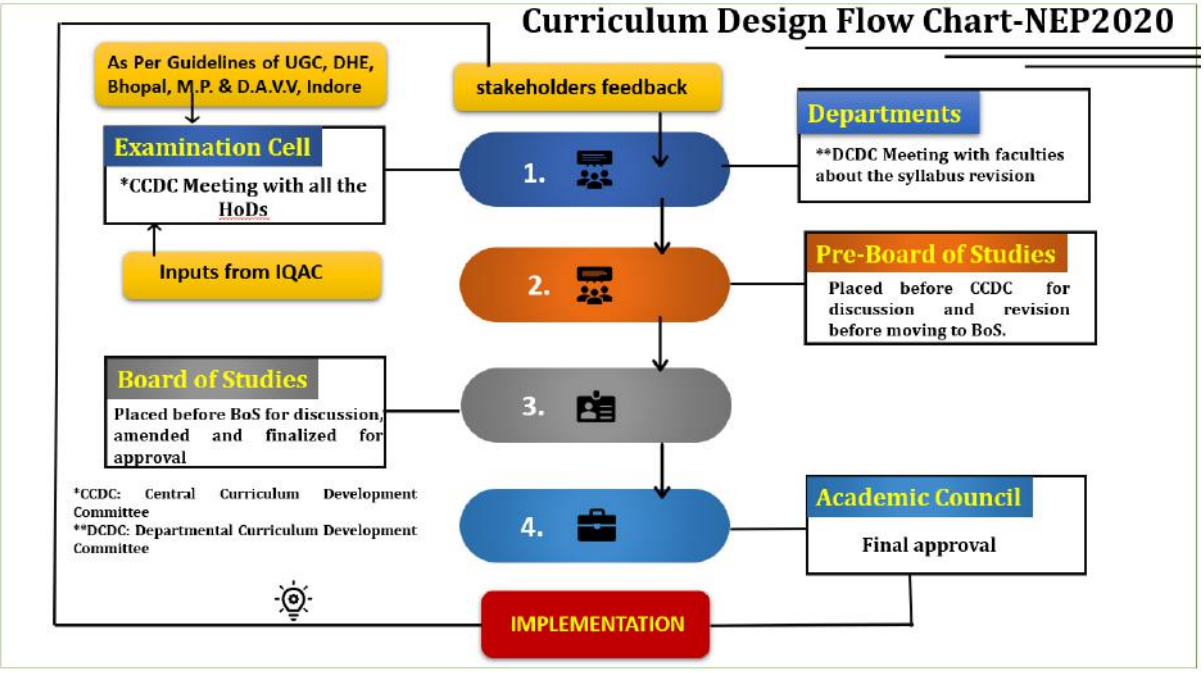
The following actions are made to speed up the implementation procedure:

8.1. Academic Planning:

a) **Staff Council Meetings:** The complete teaching staff gathers for staff council meetings and engages in discussion. This offers a priceless chance to improve the students' capacity for learning. Each session's first faculty meeting is organised by the principal. By facilitating talks, he or she directs the gathering and encourages involvement from all teachers. The academic calendar, any curriculum revisions, workload distribution, and the steps to be followed for the curricula's efficient implementation are all covered in depth during such meetings. Critical decisions may call for input from the whole college fraternity. Faculty members and department heads are permitted to express their opinions. They provide useful suggestions, which are integrated into the planning. The first meeting of the first semester facilitates the distribution of committees among staff members. Through these discussions, the college gains a clear understanding of the changes to the curricula, and as a result, the

principal offers the librarian directions for the library's expansion in relation to the curricula.

Figure: Curriculum Design Flow Chart



b) **<u>Meeting of Examination department with all HoDs (Central Currriculum Development Committee):</u>** Examination Department conducts meeting with all the HoDs and issues directives regarding syllabus framing and all the changes that has to be incorporated regarding assessment and evaluation methods. Examination department in association with IQAC, and integrating the feedback received from various stakeholders, releases the academic calendar of the institution and secure principal approval.

c) **<u>Departmental Meetings (Departmental Currriculum Development Committee):</u>** Departmental faculty meetings are arranged by heads of departments. Before meetings of BoS, the head discusses in details regarding the syllabus and required revision as per the latest trends and requirements. These discussions also cover workload distribution and how to carry it out efficiently. The principal and the timetable committee both receive a report on the workload distribution. The department's head and faculties have regular discussions. During these conversations, strategies are also chosen to achieve both course and program outcomes and the same is communicated to IQAC.

d) **Pre-board of Studies Meetings:** Pre-board of Studies meetings involve identification of new programmes and courses based on local, regional and global needs and monitors for the implementation of various guidelines before moving to Board of studies.

e) **Board of Studies Meetings:** Board of Studies call meetings regularly of all the programmes/courses is planned and accordingly agenda is prepared. The curricula is discussed in detail with external experts and various feedbacks. Summative as well as modes of formative assessment are finalized and finally sent to Academic Council for final nod.

f) **Final Approval by Academic Council**: The Academic council finally approves the curriculum finalized by the BoS for further implementation.

g) **Time-Table:** A college's timetable is a crucial tool for effective operation. It is representative of the college's overall educational curriculum. A timetable offers the structure for how the college's work is done. It serves as the vehicle by which the college's mission is carried out. A good schedule aids in the following:

- It makes sure that academic activities run smoothly and in order. Both teachers and students are aware of their responsibilities and the allotted amounts of time for each task in advance.
- The schedule directs students and teachers as to what needs to be done at a specific time, preventing time and energy waste. It aids both the student and the teacher in avoiding work-related misunderstandings, repetition, overlap, and redundancy.
- The timetable assists in allocating each teacher's workload in accordance with standards. The Principal can monitor each teacher's work with the use of the timetable.
- The schedule makes it easier for colleges to modify their curricula to meet the demands of their pupils. This helps students to schedule their academics as well as their activities.
- The schedule makes sure that time is distributed fairly among the many tasks and activities.
- The timeline significantly contributes to college discipline.

  College has a timetable committee to plan out good schedules, so that the college can handle the academic programme smoothly and effectively throughout the year.

  Timetable committee responsibilities:

- compile data about the courses, classes, and number of lectures assigned to each course.
- Get information from the department head regarding the teaching load of each faculty member.
- Prepares consolidated timetable for the whole college and also distribute classrooms and study spaces in accordance with the time table.
- Make the best use possible of the infrastructure needed for curriculum delivery.
- Create the schedules for each faculty member's classes and labs using the class schedules.
- Post the class schedules on the notice board for the benefit of the students.
- Provide a signed copy of the individual faculty and lab timetables to the HOD, Principal, and the relevant faculty member.
- Verify that the college is operating in accordance with the schedule.

h) **Induction Meeting:** The principal's address is organised for new students by faculty. In this speech, the college's principal discusses the college's vision and mission, the policies and procedures for delivering the curriculum, and the facilities that are offered there. Additionally, he encourages students to take part in the co-curricular and extracurricular events that the college organises each year. The administrative officer informs the attendees about the various student welfare measures that are available to students as well as how to apply for them. The IQAC Coordinator briefs the students about the programme and course outcomes.

8.2. Role of Teacher:

Teachers have a key role in converting the curriculum into particular learning experiences. The instructor incorporates a variety of different elements into the teaching process. The level of intelligence, content understanding, communication competence, and experience are significant aspects of instructor. The teacher's decisions about verbal and nonverbal communication behaviours during instruction are influenced by all of these factors.

Any two teachers may not always express themselves in the same way. The way teachers communicate with students causes a great deal of variation in the learning environment. Teachers provide students a constant stream of messages through their words and nonverbal actions that influence the meanings they recreate in their minds. Students can usually observe the constant communication patterns that individual professors have. Before enrolling in a particular class with a teacher, students occasionally already have

opinions on that teacher. The perception may be based on information gained from other sources. Yet, as soon as learners are exposed to a teacher, they will start to form opinions on them. Although initially naive and stereotypical, these perceptions develop through time and become more accurate. The teacher's vocal and nonverbal behaviours will typically be the main basis for these perceptions.

The institution advices teachers to make its students aware of the value of feedback, encouraging group work among them, planning extracurricular events, and use technology in instructional exchanges.

8.3. Initiatives taken by the Institution

Being an Autonomous institution, GHSC meticulously plans not only for design and development of the curricula, but also strives for effective delivery of curricula and pedagogies. Following initiatives are taken:

- By permitting them to join FDP, Orientation, and Refresher Courses, the college encourages the faculty to update themselves.
- Faculties are promoted to use innovative pedagogical method based teaching to make learning more effective.
- In order to update them with the new syllabi, the college encourages the faculty to participate in Syllabus Revision Workshops offered by the Department of Higher Education, Government of M.P.
- The institution also hosts expert talks by bringing professionals from other fields to share their knowledge with the students, in addition to the normal academic classes.
- Study tours and field trips are organised by all departments to help students connect their academic learning to real-world applications.
- For effective curriculum delivery, the college has acquired the provision of special/ remedial teaching for slow learners.
- ICT use by faculty members is encouraged for efficient instruction.
- The input from the students is gathered by feedback, and the required actions are done to help the teachers deliver better instruction to the students.
- Assignments and projects are undertaken to encourage self-learning.

To fulfil these initiatives for efficient curriculum delivery, the institution has made available all the required resources such as:

- A library with a good selection of books, e-journals, periodicals, and facilities for N-list & DELNET.
- Computers with Internet access and the necessary software in every department.
- Language Lab for English.
- Smart Classrooms & state of the art Computer Labs.

- Well maintained discipline specific laboratories.
- The institution offers funds to teachers for attending workshops, seminars, conferences, and symposiums.
- Regularly held teacher training programmes in ICT where the faculty received training in designing ICT teaching materials.

8.4. Various Teaching Approaches

Students from various socioeconomic and educational backgrounds come together in the classroom, which is a dynamic setting. The skills and personalities of these students vary. Innovative and inventive teaching methods that cater to each student's needs must be used if students are to learn effectively. Thus, Teaching learning approaches are based on following parameters:

- Student learning capabilities
- Teaching proficiency
- Teacher's thinking and acting
- Instructional media and methods adopted
- Assessment & Evaluation

Following teaching learning methods are generally adopted:

8.4.1. **Traditional Lecture Methods:** The focus of a typical lecture is to transmit the course material, with the lecturer's delivery of the subject taking centre stage. In this scenario, students are passive learners. Teachers are recommended to make these lectures effective by engaging students in conversation as they listen to them while lecturing. Teachers are urged to develop both their verbal and nonverbal skills for this reason. This will alter how students view their teachers and add interest to lectures.

8.4.2. **Experiential Learning:** In the process of "learning by doing" and reflecting on the experience, students engage in experiential learning. Kolb (1984) asserts that a learner will gain genuine experience when he or she possesses the following four skills:

the ability to reflect on the experience; the ability to use analytical skills to conceptualise the experience; and the ability to use new ideas gained from the experience by making decisions and solving problems.

The activities listed below are some of those used in the college for experiential learning:

- workshops, visits to museums and botanical gardens, etc.

- visits to nearby locations for the purpose of performing community service or to visit scientific institutions.
- Events like field trips, projects, visits to scientific locations, and exhibitions.

8.4.3. **Participative Learning:** The method of instruction known as "participatory learning" encourages and empowers students to discuss, analyse, and improve their understanding of their lives and circumstances as well as to act, plan, monitor, and reflect. This comprises a variety of activities that let students participate actively and have an impact on choices that have an impact on their learning. The following events are planned by the institution for active learning:

- sports and games events, entrepreneurship workshops, annual gatherings, visit to NGOs and other social activities. These events' planned activities are based on their curriculum. Students contribute to activities and take part in them;
- projects are displayed at science exhibitions organised for them.
- Seminars are planned for them;
- Expert talks by subject experts on various curricular themes are scheduled.
- Students are inspired to prepare PowerPoint presentations on various topics of courses.

8.4.4. **Cooperative Learning:** The method of organising classroom activities into academic and social learning experiences is called cooperative learning (Robyn, 2016). In this type of instruction, groups of learner with varying degrees of aptitude are created. These groups receive activities and rewards based on the success of the group as a whole rather than the success of a single member.
The college offers the following cooperative learning opportunities:

- A classroom activity that make students to depend on one another to complete the activity.
- Collaborative assignments that promote decision-making in groups;
- Group activities involving laboratory or experiment assignments.

8.4.5. **Research-based Learning:** Inquiry-based learning is a type of active learning where learners are given questions, issues, or scenarios to solve rather than being given pre-established facts or being shown a straightforward path to knowledge. This gives students the chance to build on their prior learning, put their abilities to use, and share their knowledge and ideas—habits of lifelong learners.
The activities used in inquiry-based learning at the college are as follows:

- Case studies that encourage students to learn and ask questions.
- Research initiatives
- Field work, Internship, project-based learning.

8.4.6. **Technology enabled Learning:** Using technology in the classroom and laboratories has made learning more student-centered. Following initiatives were taken for promoting technology enabled learning.

- Internet and computer access for downloading educational materials.
- Projectors, smart boards, visualizers are used for explaining academic concepts by displaying images and films during presentations.
- Students have access to educational applications such as virtual labs, Language Lab.
- Students can communicate through email, Google Classroom, WhatsApp, LMS to send online feedback, distribute study material, presentations, etc.
- Teachers, students, and researchers have access to e-resources such INFLIBNET and DELNET.
- Teachers can interact with students through WhatsApp groups as well as LMS.

9.0 Support provided to Teachers and Students:

The institution provides following support to faculty and students.

9.1. Support provided to Teachers:

- Faculty meetings are used to direct the teachers. For the proper implementation of the curricula, the issues surrounding workload distribution, programme organisation, workshop planning, and student activities are taken into consideration.
- Teaching methods to be used are seriously reviewed while taking into account the outcomes of the previous tests and the academic standing of the newly enrolled learners. Guest lectures, remedial classes, and counselling are some of the important measures taken to enrich academic activities.
- According to the demands of the syllabus, the institution purchases new text books, reference materials, and laboratory equipment.
- The college's timetable committee creates a master schedule with an appropriate amount of lectures and practicals for each course or programme.
- Teachers are given access to teacher diaries so they can create lesson plans and implement relevant pedagogies and keep track of their academic, research, and extracurricular activities.
- Institution provides e-classrooms, seminar halls, computers, internet facility to the teachers.
- The institution encourages teachers to participate in the orientation/ refresher courses/workshops/ seminars to update their knowledge and to improve their teaching practices.
- The institution regularly upgrades its laboratory and library facilities.

9.2. Support provided to Students: The institution provides support to students so that that the curriculum's stated objectives are met during its implementation. The college follows these procedures:

- The college hosts seminars, workshops, industry visits, field trips, study tours, and other activities that are monitored by the heads of the departments in order to promote students develop better communication, technical, laboratory, field, and other skills as well as their proficiency in the relevant subjects.
- Students are encouraged to perform additional practicals, projects, etc. in order to increase their capacity for self-learning.
- Students are encouraged to read research papers and analyse and write a brief according to their understanding.
- The faculty attempts to address the students' issues by changing the contents after conducting class quizzes, tutorials, and student seminars to identify the students' challenges and problem areas.
- There is remedial instruction set up for slow learners and higher order thinking skills(HOTS) instruction for advanced learners.
- Teachers and students have access to ICT teaching-learning resources.
- Students have access to a reading room, rich library and e-library facilities.
- A mentor system exists at the college. Each faculty member has been tasked with mentoring a certain number of students in order to keep track of the students' overall performance. The mentor keeps track of each student's profile, including their engagement in all activities, academic performance, and other initiatives. For any academic or non-academic support, students can get in touch with their mentor. In reality, a faculty or staff mentor's job is to nurture and assist a student.

10. Assessment & Evaluation Strategy: Assessment of student learning enables teachers to identify learners' strengths and weaknesses. It also helps to determine the kinds of information students need to bridge their knowledge gaps and misconceptions. We firmly believe that assessment is much more than grades. It allows us to gather information to enhance teaching strategies and direct pupils to take an active role in their own learning.
Internal assessment aids in giving students feedback on their progress, is a crucial component of effective learning.

10.1 Purpose of assessment:

The teaching/learning process is facilitated by the use of a variety of assessment strategies. These strategies also help teachers plan and/or revise

educational activities for the students, identify interventions the college administration needs to make, and identify areas of a student's learning strengths and weaknesses.

10.2 Procedure of assessment:

For successful implementation of the action plan for the curriculum's , following procedure is deployed. Continuous and Comprehensive Evaluation or formative assessment in the form of tests, assignments, tutorials, semester/term-ending examination or summative examination, viva-voce, or observation of performing work. These tests are analysed after being screened. The student's strengths and weaknesses are reflected in the assessment findings. These evaluation techniques aid teachers in determining the precise skills and abilities of each student. A remedial instruction programme is carried out for the students based on the analysis. Homework assignments are offered to the students on a variety of syllabus themes. Seminars for students are designed to assess their communication skills. The internal assessment is determined by the programme and course outcomes.

10.3 Evaluation by Feedback: Evaluations of the curriculum's efficacy from students, academic peers, employers, and alumni are crucial. All of these stakeholders provide important inputs for further quality enhancement. The relevant departments analyse the feedback on the relevant courses and programmes and are conveyed to Board of Studies.

11. Conclusions:

The learner-centric approach in curriculum design and delivery from teaching, learning, and assessment (TLA) is a commitment of Holkar science College and it certainly offers assistance and direction for moving forward with employment or higher education. The curriculum design and delivery ensures everyone has an equal opportunity and the learners are empowered appropriately to meet curricular requirements and realise their own potential. This is accomplished through faculty members giving clear, straightforward, and impartial advice and assistance while also evaluating each student's abilities, knowledge, objectives, and potential. Customized teaching, learning and assessment techniques enriched with coaching, and academic support helps learner move towards effective progress in achieving their own goals. It is ensured that students are given a curriculum of study that best meets their needs both now and in the future. Assessment to determine how well students are doing by regularly using a variety of reliable, adequate, and fair assessment techniques that form formative and summative approaches. These assessment

methods serve as learners' starting points to determine the best tactics for both slow and advanced learners. Also, a framework for constructive assessment feedback allows teachers to determine whether or not learning objectives were met. Based on feedbacks of students the effective direction they need to advance their knowledge, competence, and professional abilities in order to facilitate independent learning. Maintaining thorough and accurate evaluation records facilitate delivery planning and progress reporting for students and other stakeholders.

Pedagogy is at the heart of teaching-learning. Preparing young people as life-long learners with the deep knowledge of subject matter and a broad set of social skills requires a better understanding of how pedagogy influences learning.

(Panigua & Istance, 2018)

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[Vasudhaiva Kutumbakam]

Our SDG-2030 Goals Tree

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