

JSS STU Curriculum Design, Development & Deployment Policy-2021

STU/IQAC/CDP/2021/21

JSS Mahavidyapeetha
JSS Science and Technology University
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Policy Details

Title	JSS STU- Curriculum Design, Development and Deployment Policy-2021
Document Number	STU/IQAC/CDP/2021/21
Original / Revision Number	Ver. 1
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Approved By	Registrar
BoM Approval - reference and date:	19-01-2021
Effective Date:	19-01-2021
Next Review date:	19-01-2026

Policy review and amendment History

Date	Version	Brief Description of the review/ amendments made	Reference to amendments
19-01-2021	Ver 1.0	-	-

Index

1. **Preamble**
2. **Introduction**
3. **Policy Statement**
4. **Definition/Statement**
5. **Purpose**
6. **Objectives**
7. **Scope**
8. **Key aspects**
9. **Current Best Practices**
10. **Policy Revisions**

1.0 Preamble

The curriculum of an educational institution plays a crucial role in shaping the university rich in knowledge. Curriculum should be dynamic, adaptable, and inclusive, allowing for imaginative combinations of various disciplines and fostering a lifelong passion for learning. At JSS Science and Technology University the curriculum is aligned with the vision of NEP-2020. The curriculum is designed such that it will go beyond Science, Mathematics and Engineering subjects, incorporating humanities, sports, languages, culture, and values enabling holistic development of student fraternity aiming at fulfilling the requirements of the stakeholders. This comprehensive approach aims to develop learners with critical thinking, problem-solving skills, creativity, adaptability, and receptiveness to new knowledge in evolving fields.

In this forward-looking curriculum, the emphasis is not solely on rote memorization but on cultivating analytical thinking, problem-solving abilities, finding solution to complex problems and addressing local societal problems. It encourages students to approach challenges with creativity and innovation, fostering an environment where they can adopt to new and emerging fields with ease.

To bring this vision to life, it is imperative that the curriculum is consistently reviewed and updated to align with evolving societal needs and technological advancements. By incorporating these principles into graduate attributes, course outcomes, content selection, teaching methods, assessment criteria, and learning resources, the university will truly become the catalysts for building a knowledge-rich, globally competitive, and socially responsible institute.

2.0 Policy Statement:

JSS Science and Technology University curriculum design, development, and deployment follow a systematic and coherent approach, ensuring a consistent achievement of teaching and learning objectives. This approach establishes a transparent framework for assessing student progress throughout different academic levels. The policy has been formulated using evidence-based teaching strategies and is in harmony with established assessment and reporting standards.

3.0 Definition:

The term "curriculum" refers to a structured set of educational experiences and activities designed to achieve specific learning outcomes or goals. It encompasses a planned and organized sequence of courses, lessons, and instructional materials that guide the teaching and learning process within an educational institution or program.

A curriculum typically includes the following components:

- a) **Objectives and Goals:** Clearly defined statements of what students are expected to know, understand, and be able to do upon completing the curriculum.
- b) **Content:** The subject matter or topics covered in the curriculum. This may include specific academic subjects, skills, and knowledge.
- c) **Instructional Methods:** The strategies and approaches used to facilitate learning, such as lectures, discussions, hands-on activities, projects, and assessments.
- d) **Assessment and Evaluation:** Methods for measuring and assessing students' progress and understanding. This may involve tests, exams, projects, and other forms of evaluation.
- e) **Materials and Resources:** The educational materials, textbooks, resources, and technologies used to support the teaching and learning process.
- f) **Sequence and Structure:** The organized arrangement of content and activities over time. This includes the order in which topics are presented and the overall structure of the educational program.
- g) **Adaptations and Flexibility:** The ability to adjust the curriculum to meet the diverse needs of students and accommodate changes in educational goals or priorities.

4.0 Purpose:

The purpose of curriculum design and development is to create a structured and purposeful framework for delivering education. This process is essential for achieving educational goals, fostering effective teaching and learning, and preparing students for success in their academic and professional pursuits. Further the curriculum design and development is multi-faceted and aligned with the specific goals and characteristics of institutions focused on science and technology education.

The purpose of developing a comprehensive curriculum is as follows:

- **Relevance to Industry and Technology Trends:** To ensure that the curriculum reflects the latest advancements and trends in science and technology, preparing students to meet the evolving needs of industries.
- **Skill Development for Technological Proficiency:** Curriculum is designed such that it cultivates a strong foundation in scientific principles and technological skills, enabling students to excel in their chosen fields.
- **Innovation and Research Focus:** Foster an environment that promotes innovation, research, and development, encouraging students to engage in cutting-edge projects and contribute to scientific advancements.
- **Interdisciplinary Integration:** Facilitate interdisciplinary connections between science, technology, engineering, and other related fields, providing students with a holistic understanding and preparing them for interdisciplinary challenges.
- **Adoption of Outcome-Based Education (OBE):** Outcome-Based Education (OBE) is implemented to clearly define learning outcomes and ensure that graduates possess the skills and knowledge expected by employers and the industry.
- **Application of Cutting-Edge Technologies:** Incorporate the latest technologies and tools into the curriculum, allowing students to work with state-of-the-art equipment and software relevant to their fields.
- **Global Perspectives in Science and Technology:** Integrate global perspectives into the curriculum to prepare students for international collaboration and competition in the science and technology sectors.
- **Entrepreneurial and Problem-Solving Skills:** Cultivate entrepreneurial skills and a problem-solving mindset, enabling graduates to innovate, create, and address real-world challenges.
- **Continuous Adaptation to Technological Changes:** Establish a curriculum development process that allows for continuous adaptation to rapid technological changes, ensuring graduates are adaptable and can embrace emerging technologies.
- **Responsible Citizenship:** Teaching ethical principles encourages students to become responsible and ethical citizens who contribute positively to their communities.

The purpose of curriculum development at JSS Science and Technology University is to create a dynamic, relevant, and forward-looking educational experience that prepares students to excel in scientific and technological fields, contribute to innovation, and meet the challenges of a rapidly evolving global landscape.

5.0 Objectives:

The development of a curriculum involves careful planning and consideration of several important objectives to ensure that the educational program meets the needs of students, aligns with educational goals, and provides a meaningful learning experience.

The specific objectives of developing a curriculum are:

a) **Define Learning Goals and Outcomes:**

The curriculum clearly articulates what students are expected to learn and achieve by the end of the course. Curriculum establishes a measurable learning outcomes that reflect the knowledge, skills, and attitudes students should acquire.

b) Promote Consistency:

The curriculum ensures consistency in content, instructional methods, and assessment practices across different courses or units within the curriculum/syllabus. Curriculum provides a cohesive and integrated learning experience for students.

c) Align with Educational Standards:

The curriculum aligns with relevant educational standards, guidelines, and requirements at the local, state, or national levels. The curriculum reflects current best practices in education.

d) Address Diverse Learner Needs:

A well-defined curriculum considers the diverse needs, backgrounds, and learning styles for the students. It also includes strategies for accommodating different learning abilities and providing opportunities for all students to succeed.

e) Foster Critical Thinking and Problem-Solving:

Curriculum will help Design learning activities that encourage critical thinking, problem-solving, and application of knowledge. Curriculum also promotes the development of analytical and creative skills.

f) Integrate Relevant Technologies:

The Curriculum incorporates appropriate technologies to enhance the learning experience and keep up with advancements in educational technology and integrate them effectively into the learning system.

g) Promote Lifelong Learning:

Curriculum developed must instill a love for learning and curiosity in students and foster skills and attitudes that support lifelong learning and adaptability.

h) Encourage Active Engagement:

A well Designed curriculum will have interactive and engaging learning experiences that encourage active participation and student involvement. Curriculum incorporates hands-on activities, projects, and real-world applications.

i) Assess and Improve:

Establishes mechanisms for ongoing assessment and evaluation of the curriculum's effectiveness. Uses feedback from students, educators, and other stakeholders to make continuous improvements.

j) Facilitate Professional Development:

Support professional development opportunities for educators to enhance their teaching skills and stay current with educational trends.

k) Ensure Real-World Relevance:

Ensuring real-world relevance in a curriculum is a critical objective that aims to connect classroom learning to practical applications in the world beyond academia.

6.0 Scope:

At JSS Science and Technology University the scope of curriculum development encompasses a comprehensive range of activities and considerations related to the planning, creation, implementation, and evaluation of educational programs.

Needs Assessment:

Involves identifying the educational needs of learners and the community. Analyzing societal, economic, and technological trends that impact education.

Educational Goals and Objectives:

Defining the overarching goals and specific objectives of the educational program. Aligning goals with the mission and vision of the University (educational institution).

Content and Subject Matter:

Selecting and organizing the content and subject matter that aligns with the educational goals. Ensuring relevance, accuracy of the content.

Pedagogical Approaches:

Choosing effective teaching and learning methods. Incorporating diverse instructional strategies to address different learning styles.

Assessment and Evaluation:

Developing methods for assessing student learning. Designing evaluation tools and criteria to measure the attainment of learning outcomes.

Integration of Technology:

Incorporating appropriate technologies to enhance teaching and learning. Ensuring technology integration throughout the curriculum.

Interdisciplinary Connections:

Identifying opportunities for interdisciplinary collaboration and integration. Fostering connections between different subjects for a holistic educational experience.

Cultural and Global Perspectives:

Infusing cultural diversity and global perspectives into the curriculum. Promoting an understanding of global issues and intercultural competence.

Feedback and Continuous Improvement:

Establishing mechanisms for gathering feedback from students, faculty, and stakeholders. Implementing a continuous improvement process to adapt the curriculum to changing needs.

Professional Development:

Providing opportunities for faculty development to enhance teaching skills. Staying current with educational research and best practices.

Legal and Ethical Considerations:

Adhering to legal requirements and ethical standards in curriculum design. Ensuring inclusivity and accessibility for all learners.

Flexibility and Adaptability:

Designing a curriculum that allows for flexibility and adaptability to accommodate changes in educational trends and requirements.

JSS Science and Technology University considers curriculum development as a dynamic activity, requiring a thoughtful and strategic approach to meet the evolving needs of learners and society. The curriculum is developed involving the collaboration among educators, administrators, and stakeholders to create a meaningful and effective educational experience.

7.0 Key Aspects:

1. The comprehensive policy for curriculum design, development, and deployment addresses key aspects to ensure effectiveness, consistency, and adaptability. The key components that the policy includes are philosophy and objectives, stakeholder involvement, needs assessment, curriculum development process, alignment with standards, flexibility and adaptability, interdisciplinary integration, technology integration, assessment and evaluation, feedback mechanisms, professional development, resources allocation, ethical considerations, continuous improvement, implementation and transition, monitoring and evaluation.
2. The designed curriculum shall be consistent with the vision, mission and goals of the institution while complying with the various policies and standards including NEP, UNESCO competencies for SDGs, model curricula of statutory and regulatory bodies, accreditation bodies and professional bodies.
3. The curriculum shall also be outcome based and align with program and course outcomes adhering to the policy revisions at national and international level.
4. 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.

5. The curriculum shall also be based on the stake holder's feedback and industry association interactions viz CII, NASSCOMc SME etc.
6. The above mentioned needs assessment and analysis shall be vital component in the design and development of curriculum.
7. The curricula developed shall have the essential aspects as mentioned in UGC and AICTE curriculum framework while meeting the standards set by accreditation bodies like NBA, ABET etc in order to maintain the quality of education.
8. The curricula developed shall also comply with professional bodies like IEEE, ASCE , ASME, etc.
9. The curricula developed shall have flexibility and mobility enabling diverse students to choose their courses and experiences from same programmes or different programmes.
10. Curriculum design and development shall be made by committees identified by competent authority as per the statutory body norms and governing body norms like, DAB, BOS, AC, etc.

8.0 Current Best Practices:

I. Adoption of Outcome-Based Education (OBE) Approach:

The university has embraced the Outcome-Based Education Approach, defining clear Program Outcomes (POs) and Course Outcomes (COs) for all offered programs and courses. These outcomes are systematically implemented and dynamically managed.

II. Alignment of Course Content with POs and COs:

All program and course content is intricately mapped to the defined POs and COs. Learning outcomes encompass cognitive, psychomotor, and affective domains, and they are written and aligned with teaching, learning, and assessment methods.

III. Student-Centered Curriculum Implementation:

The curriculum implementation is centered on students, drawing insights from global practices in health professional education. This approach ensures a holistic and effective learning experience.

IV. Faculty Development in Innovative Teaching Methods:

Faculty development initiatives focus on equipping educators with innovative teaching methods, e-content development skills, and proficiency in newer assessment approaches. This strategic approach supports the successful implementation of the curriculum and is consistently planned and executed.

V. Regular and Documented Curriculum Implementation:

Both the implementation and monitoring of the curriculum are well-documented processes. Regular analysis of these documents provides valuable insights for continuous improvement in curriculum design, implementation, and the achievement of desired outcomes.

These best practices collectively contribute to a dynamic and student-focused educational environment. The Outcome-Based Education Approach, alignment of content with outcomes, faculty development, and systematic documentation all work cohesively to ensure a curriculum that is responsive to global standards and continuously evolving to meet the needs of learners effectively.

9.0 Curriculum Enrichment

At JSS Science and Technology University the central focus lies in nurturing the holistic development of students and equipping them with skills directly applicable to real-life scenarios. The curriculum enrichment process includes collaborative accomplishments like group projects, hands-on practical experiences, attending workshops, hackathons, conference, seminars, encouraging creative activities, involvement in research activities, and facilitating peer to peer learning. These varied approaches have the potential to redefine the learning abilities of the students resulting in knowledge acquisition, providing a refreshing perspective.

Successful implementation of curriculum enrichment serves as a catalyst, not only in encouraging improved academic performance but also sustaining students' motivation. The objective of curriculum enrichment is to elevate students to perform better in their academic endeavor, guiding them towards becoming self-sustained in gaining knowledge, involve in innovative activities and fostering a mindset of lifelong learning.

The goal of enrichment shall be to enhance the learning experience by offering better opportunities for students to take more onto subjects, develop critical thinking skills, and explore areas of interest beyond the basic requirements.

The curriculum enrichment shall focus on holistic development of students, encourages diversity of Learning Experiences, provides critical thinking and creativity, helps develop global awareness, and facilitates life skills and encourages lifelong learning.

JSS STU shall Allocate resources, including funding and faculty support, to facilitate the successful implementation of the curriculum enrichment policy.

The design and development of curriculum shall focus on enrichment of not only academic knowledge but also social, emotional, and practical skills. As such, the curriculum shall focus on

1. applicability of knowledge and skills to real-life situations, preparing students for challenges beyond the classroom.
2. diverse and stimulating learning experiences, such as hands-on projects, collaborative activities, and real-world applications.
3. emphasizing skills such as communication, teamwork, adaptability, and problem-solving
4. providing opportunities for students to explore, experiment, and generate new ideas.
5. understanding of global issues and perspectives, promoting cultural awareness and preparing students to participate in an interconnected world
6. enhance learning experiences, foster digital literacy, and prepare students for a technology-driven world.
7. fostering a sense of social responsibility and civic awareness
8. fosters to the needs of including the latest topics and ensures the relevance of learning.
9. Adopting diverse instructional strategies, such as project-based learning, experiential learning, and collaborative activities, peer to peer learning, quiz, can enhance student engagement in teaching learning process
10. Including interdisciplinary and multidisciplinary and value-added courses/add on courses and courses on cross cutting issues while Providing Adequate flexibility in selecting Major (Core & Discipline Specific Elective)/ Minor/Generic electives /Skill enhancement courses

(vocational courses).

11. Study tours and field trips to be organised by all departments to help students connect their academic learning to real-world applications.
12. Experiential Learning participative learning, cooperative learning, research based learning, project based learning, technology enabled learning.
13. Updating and adapting the curriculum to include the latest advancements in science and technology, ensuring that students are exposed to current trends and emerging technologies.

10. Policy Revisions:

The curriculum design and development policy is revised from time to time based on the requirement and a fixed time line is fixed to revise the policy and is done once in every three years. The following are taken in to consideration while reviewing the policy they are examining the existing curriculum design, development, and deployment policy. Identify strengths, weaknesses, and areas for improvement and gather feedback from teachers, administrators, students, parents, and other relevant stakeholders.

Appellate Authority:

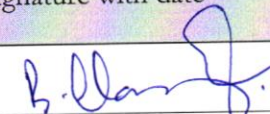
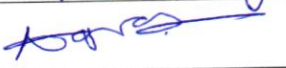
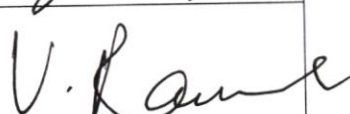
- For all difficulties pertaining to this policy, the power to remove difficulties rests with the Vice Chancellor.

Disclaimer:

Contact Us

- If you have any queries in relation to this policy, please contact:

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