DSC 8 (III.2) Emerging Trends in Learning Outcome Based Assessment and Evaluation
Discipline Specific Core

1. Credit Distribution of the course

Course title & Code DSC 8 (III.2)	Credits	Credit distribution of the course		Eligibility criteria	Pre-requisite of the course (if any)
	Lecture	Tutorial	Practical/ Practice		
Emerging Trends in Learning Outcome Based Assessment and Evaluation	4	3	0	1	Undergraduate	NIL

2. Learning Objectives

The course aims to develop a critical understanding of learning outcome-based assessment, and evaluation within the educational landscape focusing on how changing theories, technologies, and global practices shape the evaluation perspectives of learning. It goes beyond conventional testing methods to investigate learner centric assessment processes that support, evaluate, and enhance personalized learning. Additionally, the course experience will emphasize the importance of students as partners in the assessment process and how it influences the NEP 2020 aligned principles of equity, inclusion, and excellence. Learners will gain practical experiences of both classroom assessment strategies, systemic innovations, AI integrated adaptive assessment, examining how feedback, analytics, and culturally responsive practices can foster learning and promote a culture of learner centric assessment.

3. Learning Outcomes ·

- Distinguish between assessment & evaluation and using assessment dossiers for personalized learning;
- Explain the concept of assessment with special focus on holistic assessment, learning outcomes & competency-based assessment, continuous & comprehensive assessment, assessment of/for/by learning;
- Design, evaluate, and use assessment rubrics for evidence-based decision-making and learning improvement;

- Critically examine innovations and global trends in assessment practices and its relevance in Indian context;
- Integrate NEP aligned assessment principles of fairness, validity, reliability, and inclusivity in assessment design.

4. Syllabus **[45 hours]**

Unit 1 Assessment, Evaluation, and Beyond: Changing Paradigms - Evolution of assessment, evaluation, and measurement; Assessment for learning, of learning, and through learning; Assessment as evidence of what is learned vs what is not learned (learning deficit model), Marks/grades-based assessment vs learning outcomes based evaluation, Emerging paradigms: Authentic assessment, diagnostic assessment , performance based assessment, culturally responsive and social context-sensitive assessment practices. **[12 hours]**

Unit II Learner Engagement, Teacher Agency, and Ethical Frameworks in Assessment - Key Stakeholders in Assessment; Functions of students, teachers, institutional leaders, and policy systems in designing, interpreting, and using assessment outcomes; learner's role as an active participant in assessment through self-assessment, peer-feedback, and reflective practices, Academic integrity, ethical code of conduct and challenges of plagiarism; Fairness, transparency, and authenticity in teacher-led assessment. **[12 hours]**

Unit III Strategies and Innovations in Assessment - Assessment strategies: formative, diagnostic, summative, and authentic approaches; Innovations in assessment: e-assessment, AI-based adaptative assessment, learning analytics, portfolios, and gamification; Reliability, validity, and quality assurance in assessment results; Standardized testing and grading; Achieving and scaling learning improvement through evidence-based assessment; Assessment insights for teachers, schools and policymakers. **[12 hours]**

Unit IV Assessment for Improvement, Equity, and Global Comparability - Using assessment data for learning improvement and accountability; Addressing learning gaps, inclusion, and excellence; NEP aligned assessment principles for inclusivity, fairness, and responsibility, Issues of misuse of test data, consequences of high-stakes testing, and the ethics of AI-based evaluation systems; Global and comparative perspectives and assessment reforms (OECD, PISA, TIMSS, NAEP); Meta-trends in assessment research. **[9 hours]**

5. Practical **[30 hours]**

- Analyse assessment systems across two boards (CBSE/IB/Cambridge).
- Construct and validate a feedback questionnaire and implement it with a small group of math students. Prepare a summary report.
- Develop a prototype of a digital or performance-based assessment tool for secondary grade math students.
- Examine how formative assessment improved learning outcomes. Use classroom observation details.

- Evaluate a standardized assessment instrument for bias and cultural sensitivity; suggest modifications for inclusivity.
- Design a holistic assessment plan for primary grade students.
- Prepare an assessment blueprint for assessment for/of/through learning for any math unit of your choice.
- Design a mathematical game as an assessment tool. Develop a rubric for evaluation.
- Design a diagnostic assessment tool for any math topic of your choice.

6. Essential Readings

- Brookhart, S. (2013). *How to Create and Use Rubrics for Formative Assessment and Grading.* ASCD.
- Richard, J.S. (2014). *Revolutionize Assessment (Ed. 1)*. Corwin Press.
- Earl, L. (2013). *Assessment as Learning.* Corwin Press.
- Black, P. & Wiliam, D. (1998). *Inside the Black Box: Raising Standards Through Classroom Assessment.* United Kingdom: GL Assessment.

7. Suggestive Readings

- OECD (2020). *The Future of Education and Skills 2030: Assessment for Learning.*
- Secolsky, C. & Denison, B.D. (2018). *Handbook on Measurement, Assessment, and Evaluation in Higher Education.* Routledge.
- Black, P. & William, D. (1998). *Assessment and Classroom Learning*. Assessment in Education: Principles, Policy & Practice, 5(1), 7-74. https://doi.org/10.1080/0969595980050102

Discipline Specific Electives (DSE): 04 Credits

DSE (III.3.1) ICT in Mathematics Education
Discipline Specific Elective

1. Credit Distribution of the Course

Course title & Code DSE (III.3.1)	Credits		Credit distribution of the course		Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
ICT in Mathematics Education	4	3	1	0	Undergraduate	NIL

2. Learning Objectives

ICT has a transformative impact on teaching learning practices and education administration. Blended learning is no more a choice but a norm. This course focuses on reviewing contemporary knowledge on this broad area of research. The course focuses on developing rigorous understanding of pros and cons of all aspects of ICT, impact of ICT in education in general and its impact on Mathematics Education in particular.

3. Learning Outcomes

- Scope and impact of emerging ICT in education
- Means of ICT
- ICT tools in teaching
- ICT for inclusive classroom
- Safety, security, misuse and psychological concerns of ICT usage

4. Syllabus **[45 hours]**

Unit I ICT in Curriculum and Pedagogy - TPCK framework. Instrumental Orchestration. Place and purpose of ICT in the curriculum, Means of ICT. ICT embedded pedagogy. Digital resources. Content planning and curriculum designing using ICT. Role of ICT in content differentiation. Models of Blended learning. ICT and self-paced learning. ICT for inclusive classrooms. **[12 hours]**

Unit II ICT Tools and Classroom Discourse - Augmenting teaching-learning process using social networks, blogs, discussion forums etc. Online teaching and learning. ICT tools for