

SEMESTER – IV

Instructional hours per Subject : 90 (Theoretical Discourses – 60 & CE – 30 hours)

Perspectives in Education/Core Subjects:

EDU-14 : Advanced Studies : Perspectives in Education.

Curriculum and Pedagogic courses/Optional subjects:

EDU-15. 1-13 : Advanced Studies : Curriculum and Pedagogic Courses inEducation.

CE – Preparation of MCQ test battery.

EDU – 14 : ADVANCED STUDIES: PERSPECTIVES IN EDUCATION.

Objectives

To enable the student teachers:

- To synthesise acquired knowledge and skills for professional competency
- To equip student teachers to meet the challenges in classrooms
- To preserve the culture and values of nation
- To develop managerial skills to maintain an effective institutional climate
- To apply the modern trends in assessment and evaluation in education
- To integrate the knowledge of ICT in curriculum transaction

Content

- Commissions and reports in Education- Kothari commission, NEP 1986,
- Professional ethics of teacher – with respect to students, institution and society- Eclectic tendencies in education
- Social issues and strategies to curb them with special reference to corruption, terrorism, violence against women and drug abuse- Significance of conscientisation programme
- Constitutional provisions related to education with special reference to Right to education act 2009.
- Learning in constructivist classrooms- theories of learning with special reference to constructivism- application of the theories of Piaget, Bruner and Vygotsky- classroom strategies and role of teacher. Comparison of behaviourism and constructivism.
- Inclusive education- strategies for inclusive classroom- Differently abled learners – characteristics- National policies and acts- special education and integrated education
- Adolescent issues- developmental needs and characteristics- psychosocial problems of secondary school students and remedial measures- guidance and counselling for adolescents- teacher as a counsellor
- Classroom management- role of Psychology, Philosophy and Technology in Assessment and evaluation in education- Current practices in assessment and evaluation –CCE- concept, need and relevance, Grading system- concept, types-absolute grading, direct grading and relative grading, merits and demerits. Tools of Assessment- tests, checklist, rating scale, cumulative record, questionnaire, inventory,

schedule, anecdotal record- concept, merits, demerits - relevance in the field of research. Characteristics of a good evaluation tool, Norm-referenced tests and Criterion-referenced tests.

- Basic statistics for analyzing/ assessment of data- Role and importance of statistics in analyzing assessment data, Population and Sample, Data, Types of Data- Primary & Secondary, Quantitative & Qualitative, Scales of Measurement-Nominal, Ordinal, Interval and Ratio scales. Classification of Data, Graphical Representation of Data- need and importance, Representing data using Graphs and Diagrams, Interpretation of graphical representations.
- Action Research- Need, scope, nature, characteristics, steps involved, advantages and limitations of action research, Integrating action research practices in different areas.
- Research hypothesis - Meaning, relevance, role/functions and types. Stating the research hypotheses, forms of hypothesis- null form, prediction form, question form and statement form.
- Sustainable development : Concept and meaning, need for sustainable development, measures to achieve sustainable development, role of teachers in creating awareness about sustainable development.
- Environmental ethics- Environmental laws and rights , articles related to environmental protection
- Eco-friendly life style – Changing life style and its impact on environment, measures of eco friendly living.
- Disaster management- Concept, steps and phases
- Entrepreneurial Education- Entrepreneurial opportunities for students
- First Aid –Definition, Aims and Principles, Management of fracture, Dislocation, Wounds, Sprain, Strain, Cramp,Fainting, Burns, Bleeding through nose, etc.
- Understanding Nutrition - -Macro and Micro Nutrients , Carbohydrates, Protein, Fat, Vitamins (Fat soluble and water soluble) , Minerals,Water&Fibre ,Balanced diet, Vitamin deficiency diseases
- Virtual classroom &E-learning- computer simulation, web based classrooms. Cloud computing. E-learning- concept, types- synchronous, asynchronous –merits, demerits. Learning management system.

EDU – 15.1 : ADVANCED STUDIES: CURRICULUM AND PEDAGOGIC COURSES IN MALAYALAM EDUCATION.

Objectives

- To familiarize with emerging areas in teaching and learning
- To develop an awareness of modern assessment strategies for Malayalam language teaching
- To explore avenues available for professional development

Unit -1 : Emerging areas in teaching and learning

- M-learning in Malayalam language teaching
- Neuro linguistic Programming
- Resource Mapping
- Reflective Practice and teacher learning
- Learner centeredness and learner needs
- Online tutoring
- Social and community involvement activities
- Formal and Informal learning contexts
- Concept of e- resources and IT enabled instructional resources
- Modern instructional strategies and approaches for Malayalam instruction: Instructional strategies – Co operative and collaborative learning strategies, Scaffolding strategies, Virtual learning and Blended learning, Experiential learning
- Strategies to deal with Children with Special Needs (CWSN) - differently able,
- Strategies for slow learners, gifted students

Unit -2 Assessment

- Focus on communicative properties of tests
- Quantitative and Qualitative Assessment in Malayalam language teaching - Diagnostic test, Achievement test, Performance test, Language Proficiency test, Reflective assessment - Portfolio Assessment, Rubrics, Self reflection, Peer evaluation, Teacher evaluation

- Evaluation—Formative and Summative, continuous and comprehensive evaluation
- Online tests and assessment, Computer adaptive tests

Unit -3 Research

- Trends in research in language and Malayalam language learning
- Research in Internet-based teaching and learning
- Linguistics and language learning, multimodal learning.
- Educational entrepreneurship

Unit -4 Professional Development

- Continuing professional development (CPD)-conceptual Analysis : **personal and professional qualities,**
- **empowerment, skills and practise**
- Online professional development courses
- TKT(Teaching Knowledge Test)
- Online Malayalam language proficiency test

EDU – 15.2 : Advanced Studies: Curriculum and Pedagogic Courses in English Education.

Objectives:

- To familiarize with emerging areas in teaching and learning
- Develop an awareness of modern assessment strategies for English.
- Identify recent research trends in ELT.
- Explore avenues available for own professional development.

Unit I: Emerging areas in teaching and learning

- Modern trends-Whole language; Neurolinguistic Programming; Competency based language teaching;
- Post Methods era
- “there never was and never will be a method for all”-David Nunan.
- “apostmethod pedagogy must (a) facilitate the advancement of a context-sensitive language education; (b) rupture the reified role relationship between theorists and practitioners;(c) tap the sociopolitical consciousness that participants bring with them.” -B.Kumaravadivel.
- Online tutoring
- Reflective Practice and teacher learning.
- Learner centredness and learner needs.
- Diagnosis based on situational needs followed by treatment.
- Interlanguage development for second language learners.
- Criticism of published materials.
- Computer corpora
- Resource Mapping
- M-learning in ELT

Unit II: Assessment

- Replacing testing philosophy that ‘one size fits all’ with different assessment batteries that cover both production and comprehension skills.
- Focus on communicative properties of tests.
- Tests and assessment both formative and summative

- Computer adaptive tests

Unit III: Research

- Trends in research in language and language learning; learner corpora; Linguistics and language learning; multimodal learning
- Research in Internet-based teaching and learning- Blended learning; e-learning etc.

Unit IV: Professional Development

- Perceiving Continuing Professional Development as a **planned, continuous and lifelong process whereby teachers try to develop their personal and professional qualities, and to improve their knowledge, skills and practice, leading to their empowerment, the improvement of their agency and the development of their organization and their pupils.**
- Online professional development courses
- TKT(Teaching Knowledge Test)
- CELTA(Certificate of Teaching English to Speakers of Other Languages)
- IELTS (International English Language Testing System)

EDU – 15.3 : ADVANCED STUDIES : CURRICULUM AND PEDAGOGIC COURSES IN HINDI EDUCATION.

Objectives :

- To familiarize with emerging areas in teaching and learning
- To develop an awareness of modern assessment strategies for Hindi language teaching
- To identify recent research trends in language teaching
- To explore avenues available for professional development

Unit -1 : Emerging areas in teaching and learning

- Neuro linguistic Programming
- Online tutoring
- M-learning in Hindi language teaching
- Resource Mapping
- Reflective Practice and teacher learning
- Learner centeredness and learner needs
- Social and community involvement activities
- Formal and Informal learning contexts
- Concept of e- resources and IT enabled instructional resources
- Modern instructional strategies and approaches for Hindi instruction: Instructional strategies – Co operative and collaborative learning strategies, Scaffolding strategies, Virtual learning and Blended learning, Experiential learning
- Strategies to deal with Children with Special Needs (CWSN) - differently able,
- Strategies for slow learners, gifted students

Unit -2 Assessment

- Focus on communicative properties of tests
- Quantitative and Qualitative Assessment in Hindi language teaching - Diagnostic test, Achievement test, Performance test, Language Proficiency test, Reflective assessment - Portfolio Assessment, Rubrics, Self reflection, Peer evaluation, Teacher evaluation
- Evaluation—Formative and Summative, continuous and comprehensive evaluation
- Online tests and assessment, Computer adaptive tests

Unit -3 Research

- Trends in research in language and Hindi language learning
- Research in Internet-based teaching and learning
- Linguistics and language learning, multimodal learning
- Educational entrepreneurship

Unit -4 Professional Development

- Continuing professional development (CPD)-conceptual Analysis : **personal and professional qualities, empowerment, skills and practise**
- Online professional development courses
- TKT(Teaching Knowledge Test)
- Online Hindi language proficiency test

EDU – 15.4 : ADVANCED STUDIES : CURRICULUM AND PEDAGOGIC COURSES IN SANSKRIT EDUCATION

Objectives

- To understand and develop the advanced studies in curriculum and pedagogic courses.
- To familiarize with emerging areas in teaching and learning.
- To develop an awareness of modern assessment strategies for Sanskrit.
- To identify recent research trends in Sanskrit.
- To identify the avenues available for own Professional Development.

UNIT-I EMERGING AREAS IN TEACHING AND LEARNING.

- Neuro linguistic programming.
- On-line tutoring.
- M learning in Sanskrit language teaching.
- Resource mapping.
- Reflective practice and teacher learning.
- Learner centeredness and Learner needs.
- Social and community involvement activities.
- Formal and informal learning contexts.
- Concept of e-resources and IT enabled instructional resources.
- Modern instructional strategies and approaches for Sanskrit instruction .Instructional strategies-co operative and collaborative learning
- Strategies, scaffolding strategies, virtual learning and blended learning , experiential learning.
- Strategies to deal children with special needs (CWSN)-differently able.
- Strategies for slow learners , gifted students.

UNIT II ASSESMENT

- Focus on communicative properties on tests
- Quantitative and qualitative assessment in Sanskrit language teaching , diagnostics test , achievement test, performance test ,

- Language proficiency test, reflective assessment – port folio assessment , rubrics ,self reflection , peer evaluation , teacher evaluation
- Evaluation – formative and summative – continues and comprehensive evaluation .
- Online test and assessment , computer adaptive test

UNIT III RESEARCH

- Trends in research in language and Sanskrit language learning
- Research in internet based teaching and learning
- Linguistics and language learning , multi model learning.
- Educational entrepreneurship.

UNIT IV PROFESSIONAL DEVELOPMENT

- Teacher transformation and Continuous Professional Development[CPD]
- Teacher Vision and Mission-Teacher and Professional growth-Ways and means of professional competency-Academic and Professional Qualification-Teacher as a reflective practitioner –Social Resource promote human attitudes-values-Nationalism.
- On line professional development courses.
- TKT [Teaching knowledge test]

EDU – 15.5 : ADVANCED STUDIES : CURRICULUM AND PEDAGOGIC COURSES IN ARABIC EDUCATION

Objectives

- To understand and develop the advanced studies in curriculum and pedagogic courses.
- To familiarize with emerging areas in teaching and learning.
- To develop an awareness of modern assessment strategies for Arabic.
- To identify recent research trends in Arabic
- To identify the avenues available for own Professional Development

Contents

Unit 1: Language and Language Learning:

- Language and its functions
- Cultural context of Language
- Language Skills
- Language Acquisition
- Psychological Principles of Language Learning
- Aims & Objectives of Teaching Arabic Language

Unit II : Methods & Strategies of Teaching Arabic Language:

- Approach, Method & Techniques
- Traditional & Modern Methods
- Various Methods, Approaches & Techniques used in Arabic Language Teaching

Unit III: Pedagogic Analysis :

- Interdependence of Content Knowledge , Pedagogic Knowledge and Technological Knowledge
- Techno Pedagogic Content Knowledge Analysis(TPCKA)
- Arabic Curriculum in State Schools of Kerala

Unit IV : Planning

- Various Levels of Planning
- Steps Involved in Planning
- Use of various Resources and Aids in Teaching Arabic language

Unit V : Assessing Learner Achievement

- Tools and Types of Evaluation
- Formative and Summative Evaluation
- Developing achievements and diagnostic tests
- Assessment Rubrics

References:

- ThatweeruAdai -al Muallim; kifayathuthaaleemwathahleel al muthawasila : HashimUwaidha, Dar al Ilm al Malayeen , Labanan
- Al Muallim al Najih:, Dr. Abdullah al Amiri, Dar Usama li -nashirwathouzeea'
- Thaaaleemu al lugha al arabiyyabainanadriyyawathathbeeq: DrHasan Al Shahatha, Dar Misriyawallubnaniya
- MushkilathuthaaleemullughalArbiyya: Abbas Mahmood ; Dar alsaqafa, Qatar
- ThareeqathuThadreesiWastrateejyathuhu: DrMuhammedMahmmmod al Haila, Dar Al Kitab Al Jamia, Al ain, UAE
- Al Mawajjah Al FanniLiMudarirsee al Lughal Al Arabiyya: Abdul Aleem Ibrahim; Dar al maarif, Al qahira
- Thaaaleem al lugha al Arabiya lighairi al nathiqeenabiha : Makthab al tharbiyya al Arabiliduwal al Khaleej
- Thuruquthadrees al lugha al Arabiyyalilmadaris al muthawassithawathanaiyya : HasanMullaUthman ; Dar alam al Kuthublithbaawannashshrwathouzeea, Riyadh, KSA
- Thaqlolojiya al Thaaaleem; Al wasail al thaaaleemiyyawathaqlniyyath al thaaluum: Dr. Muhammed Assam Tharbay , Dar Hammurabi lilynashriwathouzeea
- AsaleebWaThuruqu al-Thadrees al Hadeesa : Dr. Muhammed Assam Tharbaya; Dar Hammurabi lilynashriwathouzeea
- Providing teachers effective strategies for using technology techrends: Brown B&Henscheid
- The systematic Design for Instruction: Dick,W& L(1990)
- IstheeratheejiyyathwaMaharah al Tharees :Kamal al Jundi; Dar al Jumhooriyalilthibaa
- Wasaail al Ithisalwathaknologyafithaaaleem :DrAbd al hafiz muhammedsalama ,Dar al Fjkar
- Al thadreeswaIadad al Muallim: Dr.SAbdulrahmanqindeel Dar al Nashr al Duwali

- Murshid al Muallim: Richard D. C ; Aalam al Kutub al Qahira
- Al Thadrees Ahdafuhu wasasuhu wa Asaleebuhu Thaqweemu Nathaijuhu wa Thathbeeqathuhu: Dr Fikri Hasan Rayan, Aalam al kutub , al qahira
- Madkhal ila Tharbiya al muthamayyizeenawa Mauhooben, Dar al fikar al thibaawa Nashr
- Thaqniyyath al thaaleem(Mafhoomuhawadouruha fi thahseeniamaliyyath al thaaleemwathaallum: Badar Salih
- Kuthub al Mudariseen il madaris al thanawiyya: Majli al wilayalilbuhuzuthabaviyyawathadreeb
- Al tharbiyawathuruquthadrees: Salih Abdul Azeed & Abdul Azeed Abdul Majeed; Dar al Maarif, Al Qahira
- Kaifa Thulqi Darsak: Yabhasu fi usooli al tharbiyathwathadrees, Dar al IlmlilMalayeen ,Bairut.
- Al Muwajjah al Amali li Mudariseen al Lughah Al Arabiyya: Abid Thoufeeq al Hashmi; Al Risala publishing House, Bairoot

EDU – 15.6 : ADVANCED STUDIES: CURRICULUM AND PEDAGOGIC COURSES IN TAMIL EDUCATION.

Objectives

- To familiarize with emerging areas in teaching and learning
- To develop an awareness of modern assessment strategies for Tamil language teaching
- To explore avenues available for professional development

Unit -1 : Emerging areas in teaching and learning

- M-learning in Tamil language teaching
- Neuro linguistic Programming
- Resource Mapping
- Reflective Practice and teacher learning
- Learner centeredness and learner needs
- Online tutoring
- Social and community involvement activities
- Formal and Informal learning contexts
- Concept of e- resources and IT enabled instructional resources
- Modern instructional strategies and approaches for Malayalam instruction: Instructional strategies – Co operative and collaborative learning strategies, Scaffolding strategies, Virtual learning and Blended learning, Experiential learning
- Strategies to deal with Children with Special Needs (CWSN) - differently able, Strategies for slow learners, gifted students

Unit -2 Assessment

- Focus on communicative properties of tests
- Quantitative and Qualitative Assessment in Tamil language teaching - Diagnostic test, Achievement test, Performance test, Language Proficiency test, Reflective assessment - Portfolio Assessment, Rubrics, Self reflection, Peer evaluation, Teacher evaluation
- Evaluation—Formative and Summative, continuous and comprehensive evaluation
- Online tests and assessment, Computer adaptive tests

Unit -3 Research

- Trends in research in language and Tamil language learning
- Research in Internet-based teaching and learning
- Linguistics and language learning, multimodal learning.
- Educational entrepreneurship

Unit -4 Professional Development

- Continuing professional development (CPD)-conceptual Analysis : **personal and professional qualities,empowerment, skills and practise**
- Online professional development courses
- TKT(Teaching Knowledge Test)
- Online Tamil language proficiency test

EDU – 15.7 :ADVANCED STUDIES : CURRICULUM AND PEDAGOGIC COURSES IN MATHEMATICS EDUCATION

OBJECTIVES : Enable the student teachers to :

- understand the concept of teaching- learning process.
- understand and develop skill in selecting appropriate aims and objectives for teaching Mathematics.
- To identify the changing roles of the teacher
- familiarize and apply the instructional management strategies of teaching Mathematics.
- understand and apply online assessment and competency enhancement avenues.
- identify net working as a means of personal and professional growth
- develop skill in the preparation of different types of schedules and matrix for assessing performance.
- To understand and practice various models of teaching in classrooms
- prepare different types of test items for assessment.
- To understand and practice modern methods of assessment
- Develop skill in constructing and administering Achievement test & Diagnostic tests.
- familiarize & understand about Modern Trends in Evaluation like Continuous comprehensive evaluation& Rubrics designing
- To understand the meaning of reflective practices to prepare tools for evaluation of
- reflective practices

CONTENTS:

Unit: I – Nature and Scope of Teaching and learning in Mathematics

Unit: II – Methods, Strategies and Models of Teaching

Unit: III – Curriculum and Modern Instructional Resources

Unit: IV – Modern Developments in Mathematics Education

UNIT: I – NATURE AND SCOPE OF TEACHING AND LEARNING IN MATHEMATICS

- **History of mathematics -Contributions of great Mathematicians** (Pythagoras, Rene Descartes, C.F.Gauss, Aryabhata, -Bhaskaracharya, Brahmagupta, SreenivasaRamanuja and Newton,)
- **Values of learning Mathematics:** - Utilitarian, - Disciplinary, -Cultural, Aesthetic, Social, Moral, International etc.

- **Teacher as a professional:** Teacher qualities and competencies, Role of Teacher as a Knowledge manager, Facilitator, Scaffolder, Mentor, Social Engineer, Reflective practitioner
- **Changing concept of classroom environment:** conducive, learner friendly, inclusive and Virtual learning environment (VLE).
- **Teaching-Learning process:** Maxims of teaching. Phases of teaching, theories of learning(Piaget, Bruner, Gagne and Vygotsky)
- **Taxonomy of Instructional Objectives-**Origin, Bloom's Taxonomy of Instructional Objectives (1956) , Classification by NCERT, Technology Integrated Taxonomy –Peck & Wilson (1999) , Revised Blooms Taxonomy by Anderson and Krathwohl (2001).
- **Aims & Objectives of teaching Mathematics with respect to NCF (2005) and KCF.(2007)**

UNIT: II – METHODS, STRATEGIES AND MODELS OF TEACHING

- **Methods and approaches:** Inductive Deductive method, Analytic -Synthetic method, Laboratory method, Project method, Problem solving method, Heuristic approach
- **Techniques for individualising instruction:** Assignments, Homogeneous grouping, Supervised study, Drill work, Dalton plan,
- **Self Instructional Strategies** Programmed Instruction (Linear, branching), Modular Instruction and CMI
- **Models of Teaching:** Detailed study and practice on Concept Attainment Model , Inquiry Training Model, Constructivist Model, Discovery Model etc.
- **Motivation:**Role of motivation in mathematics learning. Techniques of motivating a mathematics classroom

UNIT: III – CURRICULUM AND MODERN INSTRUCTIONAL RESOURCES

- **New approaches to curriculum Construction:** Critical Pedagogy, Problem Based Learning, Constructivist Learning, Reflective learning, Experiential learning,
- **Modern trends in curriculum construction:**
- **Principles of Curriculum organisation**
- **Resources for Learning Mathematics:** Mathematics laboratory, Mathematics library, Mathematics Club, Informal learning contexts such as Mathematics exhibitions, Fair, Field Trip etc.
- **e- resources/ Digital resources-**CD, DVD, Websites, digital text books, Web 2.0 tools, Hot Potatoes, Teacher Tube, Edublog, Online Resources Learning management systems, m-learning, ICT and Multimedia in the teaching of Mathematics
- **Competitive Examinations for teachers** - KTET, NTET, TET.
- **Educational entrepreneurship** - Career possibilities for trained graduate and post graduate science students.

UNIT: IV – MODERN DEVELOPMENTS IN MATHEMATICS EDUCATION

- **Techno-pedagogy:** _ Role of teacher as a techno-pedagogue, Concept of TPCK, Interrelationship of Content knowledge, pedagogic knowledge and technological knowledge , Scope and challenges of TPCK
- **Preparation Assessment tools:** Types of test items – Objective type, short answer type and Essay type tests: Achievement Test., -Diagnostic tests & Remedial Teaching.
- **Modern Trends in Evaluation.:** Objective based evaluation, Continuous comprehensive evaluation, Rubrics for assessing of Assignments, Projects, Debates, etc
- **Reflection and feedback:** _ Concept of reflective practices, Teacher as a reflective Fractioned _ Designing and development of tools for reflection by student teacher, Peer Evaluation
- **Research in Mathematics Education:** Types of Research, Thrust areas of researches in mathematics education

References

- Aggarwal, J.C. (2001). *Principles, Methods & Techniques of Teaching (2nd ed.)*. New Delhi: Vikas Publishing House Pvt. Ltd.
- Anderson, W. Lorin., and Krathwohl, David. R., *A Revision of Bloom's Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives Complete (Edn.)*
- Bode, H. B. (1927). *Modern educational theories*. New York: Macmillan.
- Ediger, M. & Rao, D. B. (2000). *Teaching Mathematics Successfully*. New Delhi: Discovery Publishing House.
- James, A. (2005). *Teaching of Mathematics*. New Delhi: Neelkamal Publications, Pvt. Ltd.
- James, A. (2006). *Techniques of Teaching Mathematics*. New Delhi: Neelkamal Publications Pvt. Ltd.
- Joyce, B., Weil, M. & Calhoun, E. (2009). *Models of Teaching (8th ed.)*. New Delhi: PHI Learning Private Limited.
- Kulshreshtha, A. K. (2008). *Teaching of Mathematics*. Meerut: R.Lall Books Depot.
- Mustafa, M. (2005). *Teaching of Mathematics*. New Delhi: Deep and Deep Publications Pvt. Ltd.
- Orton, A. (2007). *Learning Mathematics. (3rd ed.)*. London: Continuum
- Siddiqui, H.S. & Khan, M.S. (2004). *Models of Teaching - Theory and Research*. New Delhi: Ashish Publishing House.
- Siddiqui, M. H. (2007). *Teaching of Mathematics*. New Delhi: APH Publishing Corporation.
- Wadhwa, S. (2000). *Modern Methods of Teaching Mathematics*. New Delhi: Sarup & Sons.
- Rao, D.B. & Pushpalatha, D. (1995). *Achievement in Mathematics*. New Delhi: Discovery Publishing House.
- Mangal, S.K. *Teaching of Mathematics*. Ludhiana: Prakash Brothers Educational Publishers.
- Kumar, S. & Ratnalikar, D.N. (2003). *Teaching of Mathematics*. New Delhi: Anmol Publications Pvt. Ltd.

- Soman, K. *Ganithasasthrabodhanam*. Thiruvananthapuram: Kerala Bhasha Institute.

INTERNET RESOURCES

- http://en.wikipedia.org/wiki/Technological_Pedagogical_Content_Knowledge
- <http://www.citejournal.org/articles/v9i1general1.pdf>
- <http://www.ttf.edu.au/what-is-tpack/what-is-tpack.html>
- <http://www.csun.edu/science/biology/index.htm>
- http://archive.org/stream/modernmethodsand029422mbp/modernmethodsand029422mbp_djvu.txt
- http://books.google.com/books/about/Modern_Methods_and_Mater...
- <http://www.amazon.com/Teaching-Secondary-School-Science-Stra...>
- http://www.ncert.nic.in/new_ncert/ncert/rightside/links/pdf/...
- http://www.ncert.nic.in/right_side/links/pdf/framework/english/nf2005.pdf
- <http://www.ssamis.com/web/downloads/KCF%202007.pdf>
- https://golem.ph.utexas.edu/.../new_teaching_method_improves_m.html

EDU – 15.8 :ADVANCED STUDIES : CURRICULUM AND PEDAGOGIC COURSES IN PHYSICAL SCIENCE EDUCATION

(Theory hours-60, Marks -50, Related practical for CE-hours 30, marks –25)

OBJECTIVES

Enable the student teachers to

- Understand the concept of teaching- learning process.
- Understand and develop skill in selecting appropriate aims and objectives for teaching physical science.
- Familiarize and apply the instructional management strategies of teaching physical science.
- Understand and apply online assessment and competency enhancement avenues.
- Identify net working as a means of personal and professional growth
- Develop skill in the preparation of different types of schedules and matrix for assessing performance.
- Prepare different types of test items.
- Administer oral and open book examination.
- Develop a skill in constructing and administering achievement test & diagnostic tests.
- Familiarize & understand about Modern Trends in Evaluation like Continuous comprehensive evaluation& Rubrics designing

CONTENT

1. **Development of science education in India**
2. **Networking in science classrooms**
3. **Instructional Management – Traditional to digital - ICT and Multimedia as technology enhanced communication devises in the teaching of physical science**
4. **Online Assessment And Competency Enhancement avenues**
5. **Global trends in curriculum construction-** recent changes in curriculum construction, learner centered & participatory approaches.
5. **Competitive examinations for secondary school students and science teachers**
6. **Educational entrepreneurship – career possibilities of trained graduate and post graduate science students**
7. **Assessment in Physical science Education.**
 - 7.1 Objective based evaluation.

7.2 Preparation Assessment & Evaluation tools

7.2.1 Preparation of Question Bank with different test items (HOT, LOT Questions),

7.2.2 Preparation of Achievement Test.

7.2.3 Preparation of Diagnostic tests & Remedial Teaching.

7.3 Modern Trends in Evaluation.

7.3.1 Continuous comprehensive evaluation.

7.3.2 Rubrics for assessing of Assignments, Projects, Debates, Seminars and Discussions.

8. Reflective Reading and Teacher competencies.

Relevance and scope of Reflective reading.

Teacher competencies for Science learning

Standards for Teacher Competence in Educational Assessment of Students.

EDU – 15.9 :ADVANCED STUDIES : CURRICULUM AND PEDAGOGIC COURSES IN NATURAL SCIENCE EDUCATION

OBJECTIVES :Enable the student teachers to:

- Understand the concept of teaching- learning process.
- Understand and develop skill in selecting appropriate aims and objectives for teaching natural science.
- Develop skill in the preparation of various instructional materials for enhancing the effectiveness of instruction and remediation.
- Familiarize and apply the instructional management strategies of teaching natural science.
- Understand and apply online assessment and competency enhancement avenues.
- Identify net working as a means of personal and professional growth.
- Develop skill in the preparation of different types of schedules and matrix for assessing performance.
- Develop a skill in constructing and administering achievement test & diagnostic tests.
- Familiarize & understand about Modern Trends in Evaluation like Continuous comprehensive evaluation& Rubrics designing.

CONTENTS:

Multiple taxonomies of Instructional objectives

- Origin, Bloom's Taxonomy of Instructional Objectives (1956) ,
- Classification by NCERT,
- Mc Cormack and Yagar's classification,
- Technology Integrated Taxonomy –Peck & Wilson (1999) ,
- Revised Blooms Taxonomy by Anderson and Krathwohl (2001).

Instructional Management: Traditional to Digital.

- Teacher initiated methods- Lecture method, Lecture cum Demonstration, Biographical
- Student initiated methods- Problem solving, Project method, Guided discovery, Experimental and heuristic method.
- Approaches- Inductive-Deductive, Multimedia, Interdisciplinary and Constructivist approaches.
- Techniques- Seminar, Group discussion, Debate, Brain storming, peer tutoring, team teaching, concept mapping.
- ICT and Multimedia as technology enhanced communication devises in the teaching of life science
- Web 2.0 tools

- Networking- meaning and scope of Net working in science learning.
- M. learning
- Meaning and importance of planning, Types of planning – Year plan, Unit plan, lesson plan and Resource Unit
- lesson plans based on following approaches and Models of teaching- Herbartian Approach, Constructivist Approach, Concept attainment model(CAM), Inquiry Training Model(ITM), 5E Model
- Teaching skills –Definition, Core teaching skills, Components of teaching skills, Teaching skills specially required for Biology teacher.
- Curriculum-Meaning-functions and, Principles of curriculum construction,
- Approaches to curriculum organization’
- Critical analysis of the prevailing secondary school biology syllabus.
- Curriculum reforms in India(NCERT) & abroad (BSCS).

Evolving Assessment Practices in Natural Sciences.

- Reflection and feedback- Assessment of student’s performance.
- Objective based evaluation.
- Assessment &Evaluation tools
- Question Bank with different testitems (HOT, LOT Questions),
- Achievement Test.
- Diagnostic tests &Remedial Teaching.
- Modern Trends in Evaluation.
- Continuous comprehensive evaluation.
- Rubrics for assessing of Assignments, Projects, Debates, Seminars and Discussions.

Reflective Reading and Teacher competencies.

- Relevance and scope of Reflective reading.
- Teacher competencies for Science learning
- Standards for Teacher Competence in Educational Assessment of Students.

REFERANCES

- Blooms, B.S. (Ed.), *Taxonomy of Educational Objectives: The Classification of Educational Goals, Handbook I: Cognitive Domain*, McKay, New York, 1956.
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EDU – 15.10 : Advanced Studies : Curriculum and Pedagogic Courses in Social Science Education.

Contents ;

- **Social Science teaching in digital era-** need and significance of technological changes in teaching learning process
- **Virtual learning and Blended learning in Social Science-** Scope of virtual learning in Social science and the nature and scope of Blended learning in the present learning environment
- **Behaviourist and constructivist approaches in teaching Social Science-** how the approaches differ in planning and transactional modalities.
- **Global trends in curriculum construction-** recent changes in curriculum construction, learner centered & participatory approaches.
- **Innovative techniques and strategies of teaching Social Science-** modern instructional strategies with constructivist approaches and technological advancement
- **Need of research in teaching learning process-** Action research and its outcomes, recent research findings in the teaching learning process of Social Science
- **Role of Social science in National and international perspective-** Challenges to Nationalism, need and significance of international understandings, role of Social Science teaching to promote National and International perspectives.
- **Comparison of Community resources and e-resources-** important community resource items and e-resources, comparison of its availability and utilization in class room situation
- **Trends and developments in Evaluation-** modern trends in evaluation, CCE, fixing of rubrics and the scope of grading.

EDU – 15.11 : Advanced Studies : Curriculum and Pedagogic Courses in Geography Education.

Objectives : To enable the student-teacher to :

- Understand the concept of teaching- learning process.
- Develop skill in the preparation of various instructional materials for enhancing the effectiveness of instruction and remediation.
- Understand and develop skill in selecting appropriate aims and objectives for teaching the subject.
- Familiarize and apply the instructional management strategies of teaching geography.
- Understand and apply online assessment and competency enhancement avenues.
- Identify net working as a means of personal and professional growth.
- Develop skill in the preparation of different types of schedules and matrix for assessing performance.
- Develop a skill in constructing and administering achievement test & diagnostic tests.
- Familiarize & understand about Modern Trends in Evaluation like Continuous comprehensive evaluation & Rubrics designing

Contents ;

- **Teaching of Geography in the digital era-** need and significance of technological changes in teaching learning process
- **Virtual learning and Blended learning in Geography /Social Sciences-** Scope of virtual learning in Social science and the nature and scope of Blended learning in the present learning environment
- **Behaviourist and constructivist approaches in teaching of Geography-** how the approaches differ in planning and transactional modalities.
- **Global trends in curriculum construction-** recent changes in curriculum construction, learner centered & participatory approaches.
- **Innovative techniques and strategies of teaching Geography-** modern instructional strategies with constructivist approaches and technological advancement
- **Need of research in teaching learning process-** Action research and its outcomes, recent research findings in the teaching learning process of Social Science
- **Role of Social sciences in the National and international perspective-** Challenges to Nationalism, need and significance of international understandings, role of teaching of Social Sciences in promoting National and International integration.
- **Comparison of Community resources and e-resources-** important community resource items and e-resources, comparison of its availability, sources and utilization in class room situation
- **Trends and developments in Evaluation-** modern trends in evaluation, CCE, fixing of rubrics and the scope of grading.

(References : Semester I, II & III)

EDU – 15.12 : ADVANCED STUDIES: CURRICULUM AND PEDAGOGIC COURSES IN COMMERCE EDUCATION.

Objectives :

- To mould the prospective teacher educators to uphold the professional spirit in diverse angles.
- To familiarize with the modern instructional strategies pertaining to teaching of commerce.
- To make the prospective teachers in commerce as competent in applying various instructional strategies and approaches.
- To get acquainted with modern principles and trends in the designing and organization of commerce curriculum.
- To generate a broad perspectives of e-resources in instructional practices and to develop skill in retrieving and transacting commerce curriculum through e-resources.
- To analyze the global trends in commerce education through comparison between India with other countries.
- To get acquainted with the principles and practices of feedback mechanisms and to become capable of designing and implementing various assessment tools and techniques.

CONTENTS :

Unit 1: Teaching of commerce in technological era

Unit 2: Modern instructional strategies, models and approaches for commerce education

Unit 3: Curriculum Designing and Modern Instructional Resources

Unit 4 Global Trends and Assessment in Commerce Education

Unit 1: Teaching of commerce in modern era.

- Teacher, Teacher as professional; Continuing Professional Development (CPD), Teacher responsibilities; multifarious roles: facilitator, scaffolder, mentor, social engineer, counsellor, reflective practitioner and digital migrant.
- Scope of commerce in nation's prosperity, Modernization of commerce through technological advancement and LPG.
- Values attained through commerce education.

Unit 2: Modern instructional strategies, models and approaches for commerce education.

- Instructional strategies – Co operative learning strategies, Collaborative learning strategies, Scaffolding strategies, Virtual learning and Blended learning, Experiential learning, blended learning, contract learning, problem based learning, teaching thinking skills, graphic organizer. Strategies to deal with Children with Special Needs (CWSN) - differently able, slow learner, gifted students in higher secondary classroom.
- Approaches of teaching book keeping and accountancy including computerized accounting.
- Models of teaching – Introduction, Operational Heart, Different families - Concept Attainment Model, Inquiry Training Model, Group Investigation Model, Cognitive Apprenticeship Model.

Unit 3: Curriculum Designing and Modern Instructional Resources.

- Curriculum – Concept, Principles of designing commerce curriculum, Global trends in designing commerce curriculum, Brief outline about NCF (2005) KCF (2007) and its relevance in vocational education.
- Curriculum transaction: meaning and modes – Face to face mode and ICT enabled mode, Experience with curriculum designs-Design digital texts and e-content development.
- Concept of e- resources and IT enabled instructional resources, Educational blogs, e-journals, pod casting, e-learning, m- learning, web based learning, learning management system (LMS) in teaching learning of commerce education.

Unit 4: Global Trends and Assessment in Commerce Education.

- Global trends in commerce education, Commerce education with India and USA, Entrepreneurship Education – India V/S Japan. Research Trends in Commerce Education, Analysis of Research outcomes in Commerce education both teaching and learning.
- Inter relationship between Technology, Pedagogy and Content, Teacher as Techno-Pedagogue, Scope and purpose of Techno-Pedagogic Content Knowledge Analysis.
- Quantitative and Qualitative Assessment in Commerce education - Diagnostic test, Achievement test, Performance test, Reflective assessment - Portfolio Assessment, Rubrics, Self reflection, Peer evaluation.

EDU – 15.13 :ADVANCED STUDIES : CURRICULUM AND PEDAGOGIC COURSES IN HOME SCIENCE EDUCATION

OBJECTIVES :Enable the student teachers to:

- Understand the concept of teaching- learning process.
- Understand and develop skill in selecting appropriate aims and objectives for teaching natural science.
- Familiarize and apply the instructional management strategies of teaching natural science.
- Understand and apply online assessment and competency enhancement avenues.
- Identify net working as a means of personal and professional growth
- Develop skill in the preparation of different types of schedules and matrix for assessing performance.
- Develop a skill in constructing and administering achievement test & diagnostic tests.
- Familiarize & understand about Modern Trends in Evaluation like Continuous comprehensive evaluation& Rubrics designing

CONTENTS :

Multiple taxonomies of Instructional objectives

- Origin, Bloom's Taxonomy of Instructional Objectives (1956) ,
- Classification by NCERT,
- Mc Cormack and Yagar's classification,
- Technology Integrated Taxonomy –Peck & Wilson (1999) ,
- Revised Blooms Taxonomy by Anderson and Krathwohl (2001).

Instructional Management: Traditional to Digital.

- Teacher initiated methods- Lecture method, Lecture cum Demonstration, Biographical
- Student initiated methods- Problem solving, Project method, Guided discovery, Experimental and heuristic method.
- Approaches- Inductive-Deductive, Multimedia, Interdisciplinary and Constructivist approaches.
- Techniques- Seminar, Group discussion, Debate, Brain storming, peer tutoring, team teaching, concept mapping.
- ICT and Multimedia as technology enhanced communication devises in the teaching of life science
- Web 2.0 tools

- Networking- meaning and scope of Net working in science learning.
- M. learning
- Meaning and importance of planning, Types of planning – Year plan, Unit plan, lesson plan and Resource Unit
- lesson plans based on following approaches and Models of teaching- Herbartian Approach, Constructivist Approach, Concept attainment model(CAM), Inquiry Training Model(ITM), 5E Model
- Teaching skills –Definition, Core teaching skills, Components of teaching skills, Teaching skills specially required for Biology/Home Science teacher.
- Curriculum-Meaning-functions and, Principles of curriculum construction,
- Approaches to curriculum organization’
- Critical analysis of the prevailing secondary school biology syllabus.
- Curriculum reforms in India(NCERT) & abroad (BSCS).

Evolving Assessment Practices in Natural Sciences.

- Reflection and feedback- Assessment of student’s performance.
- Objective based evaluation.
- Assessment &Evaluation tools
- Question Bank with different testitems (HOT, LOT Questions),
- Achievement Test.
- Diagnostic tests &Remedial Teaching.
- Modern Trends in Evaluation.
- Continuous comprehensive evaluation.
- Rubrics for assessing of Assignments, Projects, Debates, Seminars and Discussions.

Reflective Reading and Teacher competencies.

- Relevance and scope of Reflective reading.
- Teacher competencies for Science learning
- Standards for Teacher Competence in Educational Assessment of Students.

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