Course Title: **ICT in Education**

Course No.: Ed. 443 Nature of course: Theoretical + Practical

Level: B.Ed. Year: IV

Teaching Hour: 150 hours (60T+90P)

1. **Course Introduction**

ICTs integrated in education is pervasive in school education and higher education in 21st century. Professional teachers need to know about how ICTs integrated in education can enhance educational administration and delivery. This course thus is designed for the students in Bachelor Degree in education aimed to impart both the knowledge and skills of use of ICTs in education. This course is mainly a practical course that students have to learn things being in action - project works, laboratory works and assignments. Besides there are some theoretical discussion on the use of ICTs theory, philosophy and historical development of ICTs in education.

1. **General Objectives**
   1. Introduces the meaning of ICTs in education and practices in school education
   2. Provides competence in using ICT tools in classroom teaching and learning
   3. Acquaint to the different learning management system and able to use them in teaching and learning management
   4. Impart innovation and ICTs use in the field of education
2. **Course Outlines**

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| Specific Objectives | Contents |
| * Explain the difference of ICT and ICT education in terms of aims, contents and practices. * Sketch the historical development of ICT and ICT in education in the world. * Compare the ICT policy and practice in Nepalese education. | Unit I: ICT and ICT Education(5T)   1. Meaning of ICT and ICT education 2. ICT use in education in different countries a review (South Korea, Philippines and Sri Lanka) 3. ICT in education in Nepal: ICT policy, ICT in Education Master Plan and programs in Nepal 4. Practices of ICT in education in Nepal |
| * Describe the implication of learning theories in using different educational software and tools that are used in education. * Identify and select appropriate web sites for instructional support | Unit 2: Learning theories and ICT tools (5T)   1. Behaviorism, Cognitivism, Constructivism, Connectivism 2. Use of ICT tools for related learning theory principles 3. Learning through networking: Web 2.0 and E-learning 2.0 |
| * State the inclusion of ICTs in school curriculum in different subjects. * Explain the needs of ICT competencies for a teachers based on different professional standards | Unit 3: ICTs in Curriculum and Professional Standards (5T)   1. Review of the curriculum framework and professional standards of teachers in relation to ICT use for different subjects 2. ICT competencies in different professional standards (UNESCO and NCED Nepal). |
| * To enhanced the skill to operate the operating system * To handle ICT devices and use them in learning facilitation | Unit 4: Operating system and computer hardware (5T+20P)   1. Introduction to Computer System 2. Basic Component of Computer System 3. Computer hardware and their installation for use (printer, digital camera, scanner, projector, flash drive etc.) 4. Introduction to mobile devices. 5. Operating system (Desktop, file and folder management, user account and password protection, font installation). |
| * To work with basic text formatting skills in word processor * Design power points for different purpose of presentation for different subjects and issues * Design spreadsheet as per needs of teaching learning tasks | Unit 5: Basic Digital Literacy for Teachers – Word processor, spread sheet and presentation (5T+20P)   1. Working with word processor (Text formatting, page setting, table and object insert, review and citation on documentation) 2. Power point designing and use (Creating presentation, inserting pictures, charts, audio, video, formatting presentation, layout, animation, slide transition) 3. Designing and use of spread sheet (worksheet and workbook, cell referencing, basic functions and formula, Insert charts, Case: Analyze the students' achievement score) |
| * Create emails and use it for communication (using full features in email) * Use ICT gadgets and multimedia for creating contents for learning (audio, video, text etc) * Design blog and use in education | Unit 6: Communication tools, multi-media and their use in teaching and learning (5T+20P)   1. Use of Internet and email 2. User of Search engine 3. Use of Social Media 4. Use of cloud computing tools to store and share documents (Google Drive, One Drive) 5. Multimedia and its use (text, image, animation, audio and video) in teaching and learning. 6. Recording Audio, Video, (Audacity, Movie-Maker) for podcast and vodcast learning materials. 7. Video Conference and Webinar tools. 8. Blog and its use in education (Google/WordPress) |
| * Explain the cyber security laws and issues * Use ICTs with full ethical consideration * Create awareness programme for students in security, ethics and use and misuse of ICTs | Unit 7: Security and Ethical Consideration in ICT use (5T)   1. Computer system protection from malware and spyware 2. Information Security 3. Protection from Cyber security and Cyber Crime 4. Online safety methods. 5. Ethics in using digital documents, ICT use and communication 6. Use and misuse of ICTs |
| * To select content integrated appropriate learning resources from the web * To use subject specific tools to design learning resources | Unit8: ICT use across subject areas (5T+25P)   1. Science (phET, ChemDoodle, Science Apps, NSDL Teacher domain, Google sky) 2. Mathematics(GeoGebra, Microsoft Mathematics, MalMath, Math Apps, Mathematica) 3. Language (Answergarden, Crossword, Language Apps, Hello English, ABC teach) 4. Social Studies (Atlas, Globe, Google map, Google earth, PBS, Social Apps) 5. HPE (Sports, Anatomy, HPE Apps) |
| * Design VLE and use in education * Develop subject specific teaching materials | Unit 9: Project Work on Using ICTs in teaching (5T+20P)   1. Virtual learning Environments (VLE) and is use in education (Google Class/Moodle) 2. Development of subject specific teaching learning materials based on subject specific tools and communication tools. |

**4. Instructional Techniques**

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to particular units.

**4.1 General Techniques**

Reading materials will be provided to students in each unit. Lecture, Discussion, use of multi-media projector, brain storming is used in all units.

**4.2 Specific Instructional Techniques**

Demonstration and production of workshop are essential instructional technique for all units in this course during teaching learning process. Specifically, the units 4, 5, 6, 8, and 9 are for practical workshop sessions in ICT laboratory. The products created through the workshop will be demonstrated through seminars and presentation in class. The other units will need lecture, discussion, demonstration, small assignments for writing essays etc.

**4.3 Laboratory Work**

There shall be 20 exercises in minimum, as decided by the faculty. The exercises shall encompass a broad spectrum of real-life and integrated to class room learning environment with the integration of ICT tools. In general, the Laboratory Work must cover assignments and exercises from the following areas:

1. Operation of Computer System with use of operating system.
2. Handling of Computer Hardware such as desktop, laptop, mobile, projector, scanner, camera, digital board.
3. Use of Word Processor software for teaching learning like letter preparation, report writing, documentation and document printing.
4. Use of Spread sheet package to student record keeping, result publishing, data analysis and data presentation.
5. Use of Presentation package for presentation of teaching content with animation.
6. Use of Internet and email for teaching learning
7. Use of cloud storage tools for sharing document
8. Record the audio and video for learning purpose
9. Publish the content and multimedia contents in online platform
10. Use Antivirus and check the malware, spyware
11. Practices on information security on social media
12. Work on subject specific tools for math, science, language and health.
13. **Evaluation**

**5.1 Evaluation of Theory Part**

Students will be evaluated on the basis of the class test during academic session, classroom participation, presentation of the reports and other practical activities. The scores obtained will be used for feedback purposes. The students will be evaluated through the annual examination held by the Office of the Controller of Examinations on the basis of objective questions, short and long questions. The types and number of questions to be asked in the annual examination is mentioned below:

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| --- | --- | --- | --- |
| **Types of questions** | **Total questions to be asked** | **Number of questions to be answered and marks allocated** | **Total marks** |
| Group A: Multiple choice items | 14 questions | 14 x 1 mark | 14 |
| Group B: Short questions | 6 with 3 or questions | 6 x 7 marks | 42 |
| Group C: Long question | 2 with 1 or question | 2 x12 marks | 24 |
|  |  |  | 80 |

**5.2 Evaluation of Practical Part**

Students will be internally evaluated on the basis of the laboratory works. Instructor will be responsible to evaluate the final 20 marks based on the given task of laboratory work.

**Recommended Material**

A compendium of teaching learning material will be developed by FOE, Dean’s Office, Kirtipur specifying following components unit-wise.

* + - 1. Learning Contents
      2. Learning Objectives
      3. Learning Resources
      4. Learning Activities/Guided Activities
      5. Learning Assessment/Evaluation

**6. Reference**

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