

**SHORTWOOD TEACHERS' COLLEGE
EDUCATION DEPARTMENT
SEMESTER 2**

COURSE: T.I.E. 2 – Computers and Multimedia Tools in Education

CREDITS: 45 Hours (3 Credits)

COURSE DESCRIPTION:

This course focuses on the roles of information and communication technologies in educational processes, in particular on the pivotal role that computers can play in accessing, generating, evaluating and utilizing information in multimedia learning environments. The course also exposes trainee teachers to other useful communications means and devices that can enhance the delivery of education. In this course the trainee teacher is expected to assess the role and impact of computers and other communication technologies in society and business, and to apply suggested tools and strategies to access, organize and manage/use communication networks and web-based resources to enhance education and instructional activities.

STANDARDS:

This course is designed to prepare the trainee teacher to meet the following standards of performance:

- STD. 2.1: Demonstrate sound knowledge of the basic concepts, components, and functions of computers & related communication technologies, particularly those applicable to education and instruction.

- STD. 2.2: Demonstrate knowledge and ability to use computer systems and peripheral devices in multimedia teaching/learning environments for information processing/production/presentation and publishing.

- STD. 2.3: Demonstrate ability to use computers, peripheral devices, and multimedia equipment as combined or integrated productivity tools to enhance instructional presentations.

- STD. 2.4: Demonstrate essential knowledge, skills and attitudes in using communication networks and tools/devices to navigate, explore, organize and use educational resources through online methods and facilities such as the World Wide Web and the Internet.

- STD. 2.5: Demonstrate continual growth in knowledge and skills that will enable the professional teacher to keep abreast of current and emerging technologies applicable to education and instruction.

STD. 2.6: Demonstrate the ability to integrate computer technology into specific subject areas of a school curriculum and effectively manage the related learning conditions.

OBJECTIVES:

- 2A: Define, describe, and use basic concepts, components and functions of computers for educational purposes and instructional applications.
- 2B: Manipulate computers and related peripheral devices such as: printers, digital cameras, scanners, and other communication devices to generate information in print, graphic, and image forms for instructional purposes.
- 2C: Learn, understand, and use basic functions of computers and other communication technologies to conduct research, generate information and instructional materials for teaching purposes.
- 2D: Use computer productivity tools, presentation tools, and other software to design, develop, and enhance instructional presentations and educational delivery.
- 2E: Research, access, organize and evaluate web-based resources for use in instruction and to address learners needs and interests.
- 2F: Examine, describe, develop, and use criteria, procedures, and strategies in evaluating technology software and instructional materials for integration into curriculum and instruction.

STRUCTURE & METHOD:

Objective	Content Specification/Topics	Examples of Activities
2A: Define, describe, & use basic concepts, components, and functions of computers	<ul style="list-style-type: none"> • Introduction to computer related terms such as: CPU, Input/Output Devices, Keyboard, LAN, WAN, Monitor, Printer, RAM, RPM, VGA, Networks, etc. • Functions of computing: e.g. WP, Save, Print, etc. 	Use reference materials: research activities and PC computers or laboratory facilities & resources
2B: Manipulate computers and peripheral devices to generate information	<ul style="list-style-type: none"> • Using computer/keyboard and data input devices. • Using word processing & spreadsheet software. • Databases, data generation management & uses. • Simple desktop publishing to produce materials. 	Use reference materials and practical demonstrations in classrooms and learning laboratories.

2C: Learn, understand and use computers & other technologies to conduct research and generate information & materials.	<ul style="list-style-type: none"> • Research capacities & functions with computers. • Simple procedures for accessing information. • Format and style of computer generated materials. • Producing basic teaching aids with the computer. 	Conduct demonstrations of simple procedures, and create examples. Allow for practices and creative uses of computer resources.
2D: Use productivity tools & software to enhance instructional delivery.	<ul style="list-style-type: none"> • Methods of instructional presentation for teaching. • Uses of demonstrations, simulations, and games. • Discovery learning, tutorials, & problem solving. 	Conduct/guide demonstrations of teaching; and uses of instructional approaches.
2E: Research, assess, organize & evaluate web-based resources.	<ul style="list-style-type: none"> • Using browsers, search engines, & other facilities to access and organize web-based resources for instruction. 	Use reference materials, provide & suggest strategies for research & evaluation.
2F: Evaluation of software to be integrated into Classroom instruction & learning activities.	<ul style="list-style-type: none"> • Examination of software evaluation criteria/instruments. • Review & assessment of sample instructional software. • Discussion on appropriate uses/applications of software. 	Use available commercially produced software from existing college or web-based resources.

ASSESSMENT STRATEGY:

It is proposed that students' performance in this course be assessed by course assignments, administered at the college level and moderated with direct inputs from the external examiner.

Sample Course Work

Assignment Type	Specification of Examples	Scores
A). Research & Presentation	Research report with annotated bibliography of five (5) publications on computer-related educational issues and an assessment of the relevance or impact on educational developments/methods.	10 marks
Assignment Type	Specification of Examples	Scores
B). Production & Display	Production of Power Point Presentation enhanced by the creative use of word processing, graphics & pictures; and presented in a multimedia-learning environment.	30 marks

C). Software Evaluation	Evaluation report of assessment conducted on a selected piece/package of instructional software – (CAI, or ILS). Report must feature: i) Technical quality; ii) Instructional Quality and relevance; iii) Possible learning applications, and iv) Relative value and utility	20 marks
D). Problem Solving Scenario/Case	For this assignment the student-teacher is required to identify: A current performance decrement problem in a school for example, one visited during teaching practice); and develop a technological solution to address the problem.	40 marks

Assessment Procedure

1. Specifications of assignment (A – D) with performance criteria; rubrics/scoring and schedule of their administration must be presented by the college lecturer/tutor to the external examiner prior to or at the JBTE scheduled vetting session.
2. Assessment specifications, criteria, rubrics & scoring should be agreed on at the JBTE scheduled vetting session.
3. Approved assignments/items should be developed, placed in an item bank, and reviewed periodically by the Board of Studies; Proposed revisions should be documented and immediately presented to the JBTE Secretariat for the records.

Moderation of Grades

For the purpose of presenting final grades (from internal/coursework assessment to external moderation), each college should provide the external examiner with a sampling of the assignment pieces for moderation along with the record of internal assessment.

Unless otherwise notified, moderation of grades will be done at the time normally scheduled by the JBTE. The external examiner will then present the moderated/agreed grades to the JBTE Secretariat as the FINAL assessment for the course.

RECOMMENDED RESOURCES

The following are recommended resources/reference materials: but are subject to annual review: RECOMMENDED BOOKS:

- i) Teaching & Learning with technology. Duffy, L. & McDowell, J. (2003). Boston, Allyn & Beacon.
- ii) Instructional Media and Technologies for Learning. 7th Edition. Heinich, R., Molenda, M., Russell, J., Smaldin, S. (2002). Merrill Prentice Hall.

- iii) Teachers discovery & integrating Microsoft Office Essential Concepts. Shelly, G., Cashman, T. & Gunter, R. (2002). Thompson Course Technology.
- iv) Using Technology in Classroom. Gary & Melisa Bitter (2002). Boston, Alleyne & Beacon.
- v) Instructional Technology for Teaching and Learning. Newby, Stepich, Lehman, & Russell. (1998).
- vi) Computers in the Classroom: Mindtools for Critical Thinking, David, J. (1996)
- vii) Hackbarth, S. (1996). The Educational Technology handbook: A comprehensive guide: Process and products of learning. Englewood Cliffs, NJ: Educational Technology Publications.
- viii) Flagg, B. (1990). Formative Evaluation of Educational Technologies. Hi (Dale, NJ: Lawrence Erlbaum
- ix) Instructional Technology Foundations: Edited by Robert Gagne 1987

RECOMMENED TECHNOLOGY RELATED WEBSITES:

- (a) <http://www.iste.org/>
- (b) <http://www.iteaconnect.org/>
- (c) <http://www.k12station.com/>
- (d) http://www.education-world.com/a_tech/
- (e) <http://www.techlearning.com/>

Note: This list of selected resource materials is to be further developed or increased based on the availability of new materials in the field as identified through collaborative efforts within and across the colleges.