JOINT BOARD OF TEACHER EDUCATION (JBTE)
In Association with the University of the West Indies

THREE YEAR DIPLOMA IN TEACHER EDUCATION

COURSES:
TIE. I: Instructional Technology, Media, & Methods
TIE. II: Computers & Multimedia Tools in Education

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T. I. E. Board of Studies
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INTRODUCTION:

One of the primary objectives Information and Communication Technology (ICT) in Education, as stated by the Ministry of Education Youth & Culture in its ICT Policy for Education, is to: “create a teaching force in which all practitioners possess the critical requisite skills and competencies to use ICT as a tool in enhancing the teaching/learning process”. In WHITE PAPER I, the Ministry of Education Youth and Culture further declared one of its seven strategic objectives is: “to enhance student learning by the greater use of information and communication technology as preparation for life in the national and global communities”. Against this background, it is considered critical that the revision of the teacher preparation programme in teachers colleges should include a set of courses to expose teachers in training to ICT skills and strategies.

The two new technology-related courses to be introduced into the teacher preparation programme are as follows:

1. Technology in Education I: Instructional Technologies, Media, and Methods.
2. Technology in Education II: Computers and Multimedia Tools in Education

RATIONALE:

In this information age, dominated by computers and communication technologies, the field of instructional technology has new opportunities for enhancing the delivery of instruction. Today’s classroom and learning environments are having more and more access to new technologies. The preparation of teachers to manage in the technologically enhanced learning situations must therefore include (in additional to use of traditional print & display media) new knowledge, techniques & procedures of modern technologies (message-carrying/processing devices such as computers, digital camera, interactive video, television, sound recorders, etc.) to provide new scope for enhancing teaching/learning experiences and improving instructional communication strategies.

PURPOSE:

The primary purpose of these courses is to provide teachers with technology-oriented training in the knowledge, development and management of new learning tools, strategies, and conditions necessary to enhance their teaching/learning activities. The exposure will involve competencies for creative instructional presentations; and for overall improvement of the teacher’s professional knowledge, skills and abilities to apply technology to structuring and managing learning experiences. The ultimate aim is to encourage and ensure professional uses of a wide range of technological resources in teaching; and the ultimate goals are:

- Improved teacher planning and designing of effective learning experiences supported by appropriate technologies.
- More creative and effective uses of communication devices/aids by teachers in instructional delivery.
- Systematic evaluation of technological resources before adoption and integration in classroom.
- Improved positive attitudes of teachers toward technology uses that support student learning.
- Continual professional growth of teachers to keep abreast of current and emerging technologies.
COURSE: T.I.E. I - Instructional Technologies, Media and Methods
CREDITS: 30 Hours (2 Credits)

DESCRIPTION:

This course provides introductory knowledge, skills and insights to trainee teachers on concepts, principles, procedures, and practices of technology in education; and exposes them to basic functions and creative uses of the modes and forms of instructional technologies to enhance instruction. The trainee-teacher will also get opportunities for evaluating, designing, developing, using samples of instructional media materials in preparation for practical uses of such materials with student-learners. The course also involves planning instructional activities supported by technology, and methods of technology integration in the curriculum.

STANDARDS:

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

STD. 1.1: Demonstrate knowledge, skills, and attitudes for working with basic concepts related to modes & forms of instructional technologies that may be used in teaching/learning activities.

STD. 1.2: Demonstrate understanding of current instructional principles & practices related to the use of technologies in planning, delivery and assessment of school curriculum.

STD. 1.3: Demonstrate appropriate knowledge, skills, and attitudes in evaluating, and selecting various technologies for use in activities of general education and classroom instruction.

STD. 1.4: Demonstrate ability to construct simple but creative and appropriate instructional media for classroom use.

STD. 1.5: Demonstrate ability to plan student learning activities that encourage creative uses of modern technologies; and foster collaborative, equitable, ethical & legal uses of technology by students.

STD. 1.6: Demonstrate the ability to integrate technology, media & methods into specific subject areas of a school curriculum; and effectively manage the related learning conditions.

OBJECTIVES:

1A: Define, describe, and use terms related to technology in education such as: Media; Instructional Technology; Instructional Design; Technology Integration; Instructional Approaches; Interactive and Collaborative Learning.

1B: Examine, describe, and illustrate procedures & processes in the selection, evaluation and integration of technologies in teaching, learning and assessment activities.

1C: Describe, create and use examples of modes & categories of instructional media such as: print, graphic, display, audio/visual, three-dimensional objects; models, etc.

1D: Describe and use techniques/methods & strategies of instructional approaches such as: Demonstration, Discovery, Instructional Games & Simulations, Problem Solving, etc.

1E: Design instructional plans and activities that utilize a variety of instructional media to enhance delivery of instruction; and demonstrate ability to manage such instruction.
**STRUCTURE & METHOD:**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Content Specification</th>
<th>Examples of Activities</th>
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</thead>
<tbody>
<tr>
<td>1A:</td>
<td>Terms/concepts such as: Instructional media; Instructional technology; Instructional design; Interactive learning; Instructional computing; etc.</td>
<td>Use reference materials; research activities; and Internet resources.</td>
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<tr>
<td>1B:</td>
<td>Selection criteria for instructional media/software. Procedures for selection &amp; evaluation of media; Practical applications of media in instruction.</td>
<td>Provide draft of selection criteria and involve users in discussions &amp; applications.</td>
</tr>
<tr>
<td>1C:</td>
<td>Types, categories and forms of instructional media. Preparing instructional media of various forms. Using print, visual, audio, displays, software, etc.</td>
<td>Involve trainee-teachers in (hands-on) creations of the various types of media.</td>
</tr>
<tr>
<td>1D:</td>
<td>Methods of instructional presentation for teaching. Uses of demonstrations, simulations, and games. Discovery learning, tutorials, &amp; problem solving.</td>
<td>Conduct/guide demonstrations of teaching; and uses of instructional approaches.</td>
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<tr>
<td>1E:</td>
<td>Introduction of events of instruction and planning Framework, tools, resources and sample plans Essentials of instructional management strategies.</td>
<td>Use reference materials; research, planning activities; and Internet resources.</td>
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**ASSESSMENT STRATEGY:**

It is proposed that students' performance in this course be assessed by course work. Selection of coursework assignments must be from one of the following combinations: (A, B, & D; or A, C, & D).

<table>
<thead>
<tr>
<th>Assignment Type</th>
<th>Specification of Examples</th>
<th>Scores</th>
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</thead>
<tbody>
<tr>
<td>A) Research &amp; Knowledge/Skills Presentations.</td>
<td>Documentary review-type research conducted from journal articles or online resources on selected topics related to technology in education. Knowledge &amp; skills test based on instructional technology (media and methods).</td>
<td>Research/Review = 10 Knowledge Test = 20 (Total =30)</td>
</tr>
<tr>
<td>B) Instructional Media/Material Production and Display.</td>
<td>Production of one piece of instructional media/material or aid, with specific objectives and focus on a particular target user/learner. Display of the media should involve more than one instructional mode.</td>
<td>Media Production = 20 Display/Present = 10 (Total = 30)</td>
</tr>
<tr>
<td>C) Technology Problem Solving from Scenario or Case Study.</td>
<td>Two scenarios or case studies involving modern technology-related classroom problems or issues for which the trainee-teacher should develop practical solutions.</td>
<td>Presentation = 20 Quality of Solution = 10 (Total = 30)</td>
</tr>
<tr>
<td>D) Demonstration / Micro-Teaching with Technology Integrated.</td>
<td>Demonstration of the use of selected technology / media or method in a real or contrived classroom setting.</td>
<td>Demonstration (Micro-Teaching) = 40</td>
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Assessment Procedure:

1. Each college should select the combination of assignments that will apply in any given semester. Performance criteria, assessment rubrics, scoring scheme and a schedule of assessment should be presented by the college lecturer and sent to the external examiner prior to the time normally set by the JBTE for vetting of assessment activities.

2. Assessment specifications, criteria, rubrics & scoring may be agreed on by all colleges, at the vetting session. However, minor variations in assessment may also be agreed on with the external examiner.

3. Proposed tests and approved assignments should be developed, placed in an item bank, and reviewed periodically by the Board of Studies. 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.
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 & 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 & 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:**

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<th>Content Specification / Topics</th>
<th>Examples of Activities</th>
</tr>
</thead>
</table>
| 2A: Define, describe, & use basic concepts, components, and functions of computers | - Introduction to computer related terms such as: CPU, Input/Output Devices, Keyboard, LAN, WAN, Monitor, Printer, RAM, ROM, 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. | - 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. | - 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 | - 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. | - Using browsers, search engines, & other facilities to access and organize web-based resources.
- Evaluation of 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. | - 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 Assignments:

<table>
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<th>Score</th>
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<tbody>
<tr>
<td>A). Research &amp; Presentation</td>
<td>Research report with annotated bibliography of five (5) publications on computer-related educational issues and an assessments of the relevance or impact on educational developments/methods.</td>
<td>10 marks</td>
</tr>
<tr>
<td>B). Production &amp; Display</td>
<td>Production of Power Point presentation, enhanced by the creative use of word processing, graphics &amp; pictures; and presented in a multimedia learning environment.</td>
<td>30 marks</td>
</tr>
<tr>
<td>C). Software Evaluation</td>
<td>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.</td>
<td>20 marks</td>
</tr>
<tr>
<td>D) Problem Solving Scenario/Case</td>
<td>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 this problem. Criteria: 1. The problem must be clearly delineated &amp; shown relevant 2. The solution must be practical &amp; applicable to classroom. 3. It solution must be technology-driven &amp; technically sound. 4. The proposed solution must directly address the problem.</td>
<td>40 marks</td>
</tr>
</tbody>
</table>

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 resource/reference materials; but are subject to annual review:

RECOMMENDED BOOKS:


RECOMMENDED TECHNOLOGY-RELATED WEB SITES:

a)  http://www.iste.org

b)  http://www.iteaconnect.org

c)  http://www.ed.gov/technology

d)  http://www.nea.org/cet/

e)  http://www.sri.com/policy/ctl/

f)  http://www.aace.org

g)  http://www.cue.org

h)  http://www.aect.org

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.