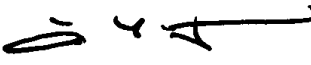


TESDA CIRCULAR

Subject: The Curricula for CAREER ENTRY COURSE FOR SOFTWARE DEVELOPERS NC IV using RPG under the PGMA Training for Work Scholarship		Page 1 of 1 No. <u>36</u> Series of 2007
Date issued: 13 September 2007	Effective: Immediately	Supersedes:
<p>Pursuant to the PGMA Training for Work Scholarship for the massive training of software developers, the attached curriculum is prescribed for CAREER ENTRY COURSE FOR SOFTWARE DEVELOPERS NC IV using RPG for two hundred forty (240) hours.</p> <p>The program for this curriculum shall be registered in UTPRAS as Non-Training Regulations (NTR) and this covers one (1) unit of competency.</p> <p>Wide dissemination and strict implementation of this Circular to all concerned is hereby enjoined.</p> <p style="text-align: center;"></p> <p style="text-align: center;">SECRETARY AUGUSTO BOBOY SYJUCO Director General</p>		

- COURSE TITLE** : **CAREER ENTRY COURSE FOR SOFTWARE DEVELOPERS – RPG**
- UNIT OF COMPETENCY** : **Develop and Maintain Applications Using AS/400 RPG and ILE RPG**
- NOMINAL DURATION** : **240 HOURS**
- COURSE DESCRIPTION** : CECSO – RPG should give participants a depth and breadth of knowledge needed by would-be developers to be industry-ready using the AS/400 RPG/400 and ILE RPG platform. The *AS/400 Basic Concepts and Utilities* module introduces the participants to the AS/400 environment. Participants will learn to create databases, screens, and report layouts on the AS/400.
- The Control Language Programming module is designed for programmers who need the functionality of CL commands in their projects. This course shows how programmers can write simple CL applications without the need for a high-level programming language.
- The *RPG/400 Fundamentals* module is designed for programmers who are new to RPG/400 (or RPG III). Students will learn how to design/write RPG/400 applications that incorporate database access and interactive screens.
- The *RPG/400 Advanced* module is designed for programmers who are already familiar with RPG/400. Participants will learn how to make use of subfiles and message subfiles in their applications.
- The *ILE RPG IV Fundamentals* module is designed for programmers who are new to ILE RPG IV. Students will learn how to design/write ILE RPG IV applications that incorporate database access and interactive screens.
- The *ILE RPG IV Advanced* module is designed for programmers who are already familiar with ILE RPG IV. Participants will learn how to make use of subfiles and message subfiles in their applications as well as advanced ILE concepts.

COURSE OUTCOMES:

Upon completion of the modules the trainees/students should be able to:

1. Identify, manage and use AS/400 basic concepts and utilities
2. Write and manage Control Language (CL) programs
3. Identify and write RPG/400 basic programs
4. Build RPG/400 advanced programs
5. Identify and write ILE RPG IV basic programs
6. Build ILE RPG IV advanced programs

TRAINEE ENTRY REQUIREMENT:

- College graduate, with aptitude for programming, analytical and communication skills;
- 18-55 years old
- Must pass assessment and profiling by the member companies;
- Must have no pending criminal and administrative case
- Must not have been previously employed as a software developer.

COURSE STRUCTURE:

Module 1 - Developing and Maintaining Applications Using AS/400 RPG and ILE RPG

- LO1. Identify, manage and use AS/400 basic concepts and utilities
- LO2. Write and manage Control Language (CL) programs
- LO3. Identify and write RPG/400 basic programs
- LO4. Build RPG/400 advanced programs
- LO5. Identify and write ILE RPG IV basic programs
- LO6. Build ILE RPG IV advanced programs

COURSE DELIVERY

1. Methodology:

- Theoretical exams
- Graded lab exercises

2. Resources:

The trainees must be provided with the following:

The trainees must be provided with the following:

- EQUIPMENT
 - AS/400
 - 1 AS/400 workstation per student
 - 1 AS/400 workstation for the trainor
- SOFTWARE
 - OS/400 V5R1M0
 - RPG compiler
 - ILE RPG compiler
- MATERIALS AND TOOLS
 - Student Manual
 - Whiteboard

3. Qualification of Instructor:

- College graduate
- At least 5 years working experience in AS/400 RPG/400 & ILE RPG environment

MODULE OF INSTRUCTION

LO 1 Identify, manage and use AS/400 basic concepts and utilities

ASSESSMENT CRITERIA:

1. AS/400 Objects are identified and differentiated according to instructions
2. Program Development Manager (PDM) are used
3. Source members are created/edited using the Source Entry Utility (SEU)
4. Physical and Logical Files are created using DDS
5. Physical and Logical files are managed with multiple members
6. Databases are updated using DFU
7. Screens layouts and menus are created using SDA
8. Report layouts are created using RLU
9. Queries are created and managed according to work instructions

CONTENT:

- Introduction to the AS/400
- Programming Development Manager
- Source Entry Utility
- AS/400 Files
- Data File Utility
- AS/400 Query Utilities
- Screen Design Aid
- Report Layout Utility

CONDITIONS:

The trainees must be provided with the following:

- EQUIPMENT
 - AS/400
 - 1 AS/400 workstation per student
 - 1 AS/400 workstation for the trainor
- SOFTWARE
 - OS/400 V5R1M0
 - RPG compiler
 - ILE RPG compiler
- MATERIALS AND TOOLS
 - Student Manual
 - Whiteboard

METHODOLOGY:

- Lecture and discussion
- Guided Lab exercises

ASSESSMENT METHOD:

- Graded lab exercises

LO 2 Write and manage Control Language (CL) programs

ASSESSMENT CRITERIA:

1. Structured CL programs are written according to work instruction
2. Error handling in a CL program are incorporated
3. Database and display files are used in a CL program
4. Data Areas are used in a CL program
5. Common message, job, library, and object commands are used in a CL program
6. Different AS/400 objects are managed in a CL program
7. Other programs are called in a CL program
8. Between date formats are converted using CVTDAT
9. Interactive and batch programs are created according to the program requirements

CONTENT:

- Introduction to Control Language
- Parts of a Control Language Program
- Constants and Variables
- Expressions
- Control Statements
- Built-in Functions
- Job Commands
- Data Areas
- File Handling
- Converting Dates
- Retrieving User Profile Information
- Coding Techniques

CONDITIONS:

The trainees must be provided with the following:

- **EQUIPMENT**
 - AS/400
 - 1 AS/400 workstation per student
 - 1 AS/400 workstation for the trainer
- **SOFTWARE**
 - OS/400 V5R1M0
 - RPG compiler
 - ILE RPG compiler
- **MATERIALS AND TOOLS**
 - Student Manual
 - Whiteboard

METHODOLOGY:

- Lecture and discussion
- Guided Lab exercises

ASSESSMENT METHOD:

- Graded lab exercises

LO 3 Identify and write RPG/400 basic program

ASSESSMENT CRITERIA:

1. Different RPG/400 specifications are identified according to instructions
2. Structured RPG/400 programs are written according to program requirements
3. Report generation programs are written in RPG/400
4. Simple data entry applications are written in RPG/400
5. Arrays and data structures are used according to program requirements

CONTENT:

- Introduction to RPG/400
- RPG/400 Keywords
- RPG/400 Indicators
- RPG/400 Specifications
- Arithmetic Operations
- Move Operations
- Compare Operations
- Subroutines
- Structured Programming
- Using printer files
- Call/Branching Operations
- Screen Handling Operations
- File Handling Operations
- Arrays and Tables

CONDITIONS:

The trainees must be provided with the following:

- **EQUIPMENT**
 - AS/400
 - 1 AS/400 workstation per student
 - 1 AS/400 workstation for the trainer
- **SOFTWARE**
 - OS/400 V5R1M0
 - RPG compiler
 - ILE RPG compiler
- **MATERIALS AND TOOLS**
 - Student Manual
 - Whiteboard

METHODOLOGY:

- Lecture and discussion
- Guided Lab exercises

ASSESSMENT METHOD:

- Graded lab exercises

LO 4 Build RPG/400 advanced programs

ASSESSMENT CRITERIA:

1. RPG/400 programs are written that make use of subfiles
2. RPG/400 programs that use subfile messages are written to display error messages
3. Data areas are used within an RPG/400 program
4. API's are called from an RPG/400 program

CONTENT:

- Creating Subfiles and Message Subfiles in SDA
- Subfile Control Record and Subfile Record
- Subfile Keywords
- Loading Subfiles
- Using Subfiles in an RPG/400 Program
- Subfile Message Control Record and Subfile Message Record
- Subfile Message Keywords
- Using Subfile Messages in an RPG/400 Program
- Using Data Areas
- Using API's (QCMDEXC)CONDITIONS:

CONDITION:

The trainees must be provided with the following:

- EQUIPMENT
 - AS/400
 - 1 AS/400 workstation per student
 - 1 AS/400 workstation for the trainor
- SOFTWARE
 - OS/400 V5R1M0
 - RPG compiler
 - ILE RPG compiler
- MATERIALS AND TOOLS
 - Student Manual
 - Whiteboard

METHODOLOGY:

- Lecture and discussion
- Guided Lab exercises

ASSESSMENT METHOD:

- Graded lab exercises

LO 5 Identify and write ILE RPG IV basic programs

ASSESSMENT CRITERIA:

1. Different ILE RPG IV specifications are identified according to work instructions
2. Structured ILE RPG IV programs are written according program requirements
3. Report generation programs in ILE RPG IV are written according to instructions
4. Simple data entry applications in ILE RPG IV are written according to the program requirements
5. Arrays and data structures are used according to the program requirements
6. Simple OS/400 APIs are used according to the program requirements

CONTENT:

- Introduction to ILE RPG IV
- ILE RPG IV Keywords
- ILE RPG IV Indicators
- ILE RPG IV Specifications
- Arithmetic Operations
- Move Operations
- Compare Operations
- Subroutines
- Structured Programming
- Using printer files
- Call/Branching Operations
- Screen Handling Operations
- File Handling Operations
- Arrays and Tables

CONDITIONS:

The trainees must be provided with the following:

- EQUIPMENT
 - AS/400
 - 1 AS/400 workstation per student
 - 1 AS/400 workstation for the trainer
- SOFTWARE
 - OS/400 V5R1M0
 - RPG compiler
 - ILE RPG compiler
- MATERIALS AND TOOLS
 - Student Manual
 - Whiteboard

METHODOLOGY:

- Lecture and discussion
- Guided Lab exercises

ASSESSMENT METHOD:

- Graded lab exercises

LO 6 Build ILE RPG IV advanced programs

ASSESSMENT CRITERIA:

1. ILE RPG IV programs that make use of subfiles are written according to program requirements
2. ILE RPG IV programs that use subfile messages are written to display error messages
3. ILE Objects like Modules and Service Programs are used according to instructions
4. Programs are created that make use of the ILE Model
5. Programs are created that make use of ILE Bindable API's

CONTENT:

- Creating Subfiles and Message Subfiles in SDA
- Subfile Control Record and Subfile Record
- Subfile Keywords
- Loading Subfiles
- Using Subfiles
- Subfile Message Control Record and Subfile Message Record
- Subfile Message Keywords
- Using Subfile Messages
- ILE Concepts

CONDITIONS:

The trainees must be provided with the following:

The trainees must be provided with the following:

- EQUIPMENT
 - AS/400
 - 1 AS/400 workstation per student
 - 1 AS/400 workstation for the trainor
- SOFTWARE
 - OS/400 V5R1M0
 - RPG compiler
 - ILE RPG compiler
- MATERIALS AND TOOLS
 - Student Manual
 - Whiteboard

METHODOLOGY:

- Lecture and discussion
- Guided Lab exercises

ASSESSMENT METHOD:

- Graded lab exercises