UEENEEE083A establish and follow a competency development plan in an electro-technology engineering discipline (Electronics)

SELF STUDY PROFESSIONAL DEVELOPMENT ONLINE LEARNING RESOURCES
Outlines

KS01-EE083A Engineering competency development

Evidence shall show an understanding of engineering competency development to an extent indicated by the following aspects:

T1 Components of a competency development plan encompassing:

T2 Obligations and expectations under a competency development plan

T3 Scope for industry/enterprise policies and procedures

Policies and procedure related to safety, effective work outcomes, customer relations, conflict resolution and competency development.

The practice reports need to write for **one selected topic of your specialization** of the study materials included in the following outlines & resources (Please note that you do not need to study all resources. They are given to you for reference. Based on your specialization, write the competency demonstration report for one area of your choice .

The reports should include the followings:

Professional topics----- You need to select the topic such as building electrical wiring or power distribution etc

Fundamental of Engineering- What knowledge you got from the materials in your selected professional topic..

Engineering Management--- How will you manage the project / workforce to implement the engineering tasks by applying those knowledge in actual workplace project or simulated work place and project.

Rules Regulations, Standards & Specifications- You need to refer the relevant engineering rules, regulations, standards and specifications in the tasks expressed in your report.

Safety—How will you safeguard public safety in performing the engineering tasks?

Ethics--- How will you apply professional code of ethics in performing the engineering tasks?

FORMAT

Section (1) Introduction

Section (2) Work experiences in brief and highlight the major important projects

Section (3) to (10) , the following competency should be addressed

Apply engineering knowledge, methods and techniques

Use of engineering technology , tools and equipments

Safeguard public safety

Recognition the impacts of engineering on the environment , economy and society.

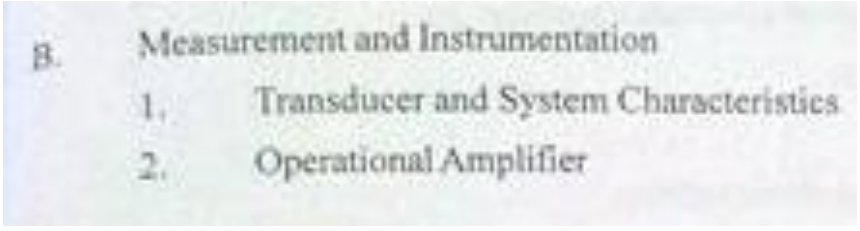
Manage engineering activities

Communicate engineering information.

Work collaboratively

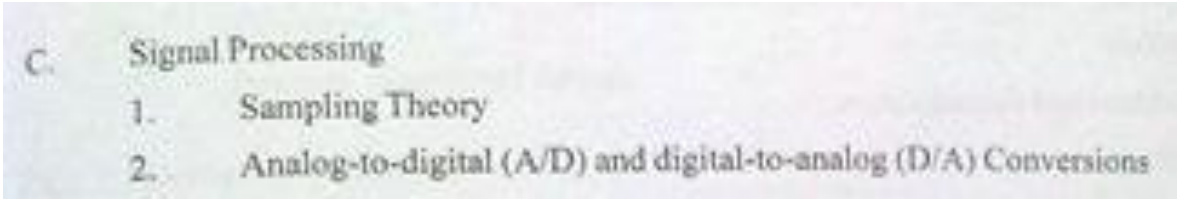
Main and enhance engineering skills and knowledge.

SPECIALIZED AREA (1) Instrumentation & Signal Processing



STUDY MATERIALS (Electrical Measurement)

EE 404 Electrical Measurement (1 pt)



Process control-I006+I008+I020.zip

http://www.filefactory.com/file/c0b7d9d/n/Process_control-I006_I008_I020.zip

I006

UEENEEI006B		Solve problems in process controllers, transmitters and converters
6032A	EA904	Control concepts
7761L	EA190	Electronic signals and systems

1.Process control transducer

2.Operational amplifier

3.Pnuematic

4.Digital control

5.PLC TL31

6.Encoder+Decoder

7.Digital signal processing

8.DAC+Flipflop+Sensor

9.Analogue to Digital Conversion

10.Temperature control

11.Industrial transducer

12.Control system evaluation

13.Proportional control

14.Electronic signal system

15.Types of transducers

16.Speed measurement

Stage 4 Part 18.zip
http://www.filefactory.com/file/c0cc793/n/Stage_4_Part_18.zip

Stage 4 Part 1A.zip
http://www.filefactory.com/file/c0cc226/n/Stage_4_Part_1A.zip

Advanced References

EE 403 Introduction to Electronic Engineering (1 pt)

EE 524 Introduction to Power Electronics (1 pt)

EE 524 Power Electronics

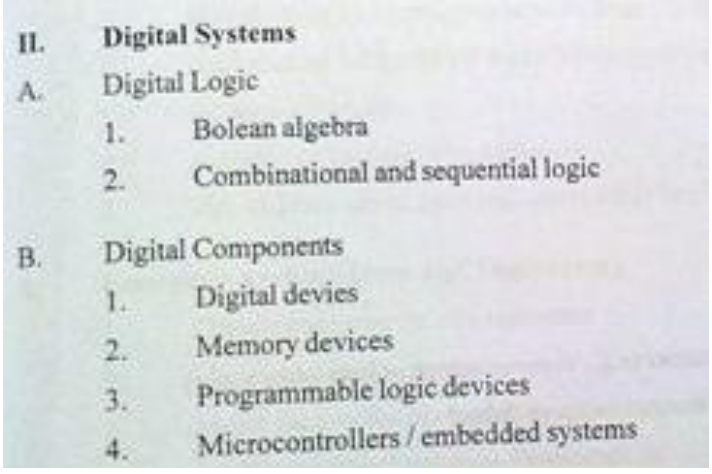
EE 524 Applied Electronics

Competency Demonstration Report Elective (1)

Reflect your experience in the work place , write the technical report of 10 pages & submit it.

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in instrumentation & signal processing system in above mentioned format & submit it to the assessor.
(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr

SPECIALIZED AREA (2) Digital System



II. **Digital Systems**

A. Digital Logic
   1. Bolean algebra
   2. Combinational and sequential logic

B. Digital Components
   1. Digital devies
   2. Memory devices
   3. Programmable logic devices
   4. Microcontrollers / embedded systems

Digital Electronics Notes

UEENEEH012B		Troubleshoot digital subsystems
UEENEEH043B		Diagnose and rectify faults in digital subsystems of electronic controls

http://kyawnaing325.zoomshare.com/files/6/DigitalElectronics.htm

http://kyawnaing325.zoomshare.com/files/6/7794CD-DigitalElectronics.htm

DE 1

Binary Number Binary_Number_Lesson.zip

D.A.C Encoder Multiplexer DAC-Encoder-Multiplexer.zip

Introduction to Digital Logic DE1-1.zip

Boolean Algebra DE1-2.zip

De Morgan Theorem DE1-3.zip

Karnaugh's Map DE1-5.zip

DE2

Timing Diagram + Operation of Discrete Equipments DE2-1_2_Notes.zip

7 Segments Display DE2-7_Segment_Display.zip

Logic Families Part 1 & Part 2 DE2_Logic_Families_Part_I_Part_II_Note_Exercise.zip

SR Flip Flop DE2-SR_Flip_Flop_Notes.zip

D J K Flip Flop DE2-D_J_K_Flip_Flop.zip

Data Transfer DE2-Data_Transfer_Note.zip

Encoder DE2-Encoder_Lesson.zip

Logic Level DE2-Logic_Level_Note_Exercise.zip

Logic Level + Totem Pole DE2-Logic_Level_TotemPole_Note_Exercise.zip

Multiplexer DE2-Multiplexer_Lesson.zip

Schmitt Trigger DE2-Schmitt_Trigger_Device_Exercise.zip

Shift Register DE2-Shift_Register.zip

ESD ESD_Review_Questions.zip

Digital Logic Simplification Digital_Logic_Simplification.zip

SR & D Latches **SRandDLatches.mht**

Simple Sequential **SimpleSequentialCircuit.mht**

Demorgan **DeMorganTheorm_0.mht**

Sequential State Diagram **SequentialCircuitStateDiagram.mht**

De Morgan Theorem **DeMorganTheorm.mht**

D & JK Flip Flop **DandJKFlipFlops_0.mht**

Basic Logic Gates **BasicLogicGates.mht**

Digital Electronics **DE.zip** **DE1.zip** **DE2Notes.zip**

Digital_logic_Simplification.zip

IC Reference

Digital_IC_Ref_1-Part_1.zip

Digital_IC_Ref_1-Part_2_0.zip

Digital_IC_Reference_2-Part_1.zip

Digital_IC_Reference_2-Part_2.zip

Digital Electronics Exercises

DE1 Exercise

DE1-1_Review_Question.zip

DE1-2Review_Questions.zip

DE1-3_Review_Question.zip

DE1-4_Review_Question.zip

ESD_Review_Questions.zip

Digital_Logic_Simplification.zip

DE2 Exercise

DE2-7_Segment_Display_Review_Q.zip

DE2_Shift_Register_Exercise.zip

DE2-Counter_Exercise.zip

DE2_SR_Flip_Flop_Q.zip

DE2-D_Flip_Flop_Q.zip

DE2-Data_Transfer_Q.zip

DE2-DecoderMultiplexer_Assignment.zip

Advanced References

BAE 408 Analogue & Digital Electronics

EE 405 Digital System (1 pt)

EE 405 Digital System (1 pt)

EE 526 Digital Signal Processing (1 pt)

EE 527 Digital Image Processing 1 (1 pt)

EE 527 Digital Image Processing 2

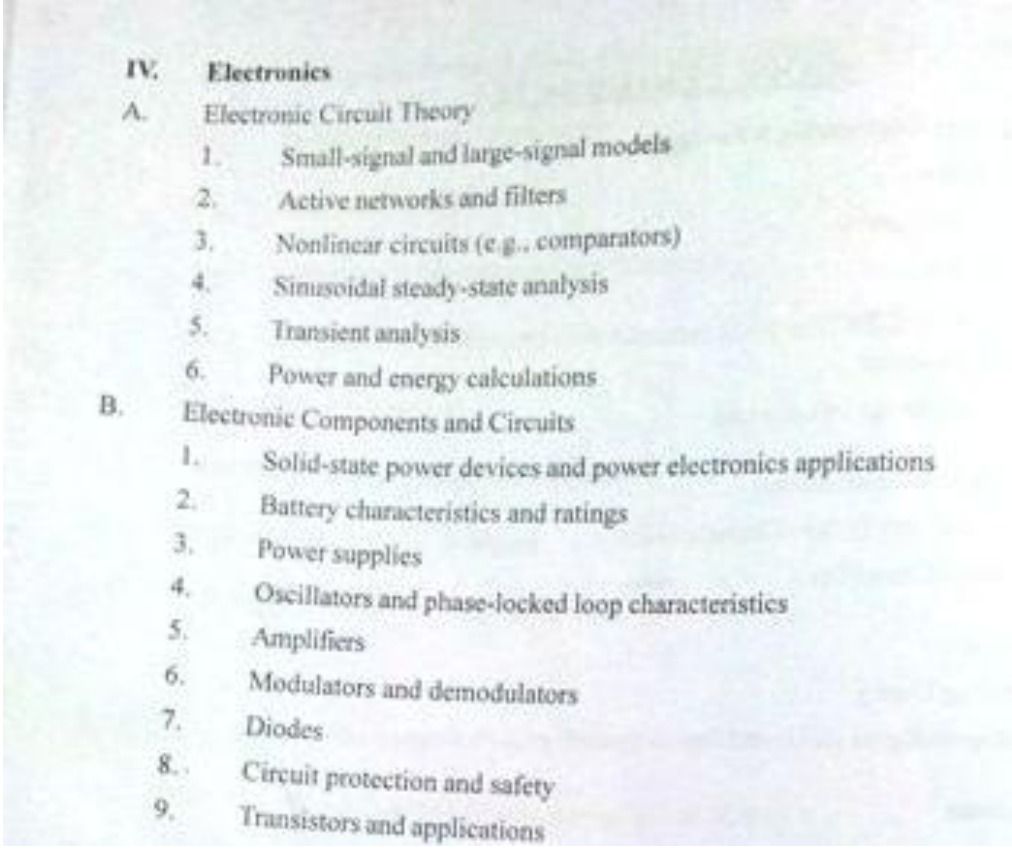
Competency Demonstration Report Elective (2)

Reflect your experience in the work place , write the technical report of 10 pages & submit it.

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in digital system in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr

SPECIALIZED AREA (3) Electronics



IV. **Electronics**

A. Electronic Circuit Theory
   1. Small-signal and large-signal models
   2. Active networks and filters
   3. Nonlinear circuits (e.g., comparators)
   4. Sinusoidal steady-state analysis
   5. Transient analysis
   6. Power and energy calculations

B. Electronic Components and Circuits
   1. Solid-state power devices and power electronics applications
   2. Battery characteristics and ratings
   3. Power supplies
   4. Oscillators and phase-locked loop characteristics
   5. Amplifiers
   6. Modulators and demodulators
   7. Diodes
   8. Circuit protection and safety
   9. Transistors and applications

H045+7761A

UEENEEH045		Develop solutions to analogue electronic problems
7761A	EA100	Analogue electronics 1

Analog1

Analog2

Assessment-Test + Assignment for flexible study students

Electronics_H045_Tutorials

H025

UEENEEH025		Provide solutions to single phase electronic power control problems
8273Z	NE064	Variable speed drives

H025_Operational_Amplifier

Assessment-Test + Assignment for flexible study students

Electronics_H025_Tutorials

H026

UEENEEH026		Provide solutions to polyphase electronic power control problems
8273Z	NE064	Variable speed drives

H026_3_Ph_Power_Control_Electronics_1

H026_3_Ph_Power_Control_Electronics_2

H026_3_Ph_Power_Control_Electronics_3

H026_3_Ph_Power_Control_Electronics_4

Assessment-Test + Assignment for flexible study students

UEENEEH026_Tutorials.doc

Stage 3 Part 2.zip

http://www.filefactory.com/file/c0ccdbc/n/Stage_3_Part_2.zip

BAE 408 Analogue & Digital Electronics

Part 2 Competency units of the subject

Advanced References

EE 403 Introduction to Electronic Engineering (1 pt)

EE 524 Introduction to Power Electronics (1 pt)

EE 524 Power Electronics

EE 524 Applied Electronics

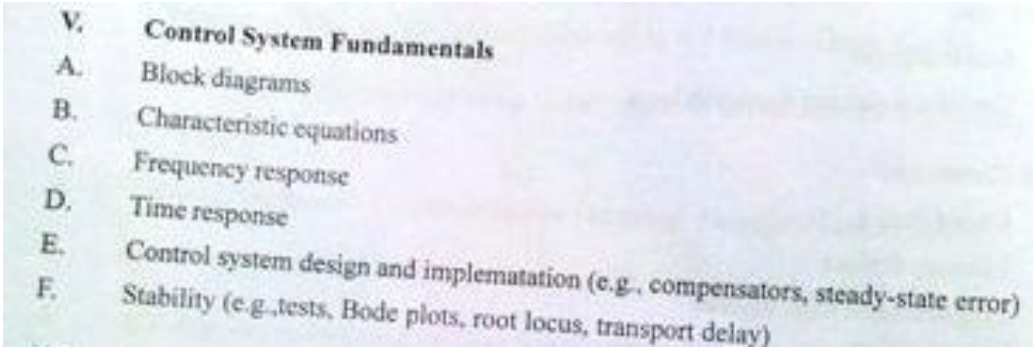
Competency Demonstration Report Elective (3)

Reflect your experience in the work place , write the technical report of 10 pages & submit it.

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in electronics in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr

SPECIALIZED AREA (4) Control system



V. **Control System Fundamentals**

A. Block diagrams

B. Characteristic equations

C. Frequency response

D. Time response

E. Control system design and implemetation (e.g., compensators, steady-state error)

F. Stability (e.g.,tests, Bode plots, root locus, transport delay)

I006

UEENEEI006B		Solve problems in process controllers, transmitters and converters
6032A	EA904	Control concepts
7761L	EA190	Electronic signals and systems

AnalogDigitalSignalConditioning

H085_66_I006_Note_1_Sensors 1

H085_66_I006_Note_2_Sensors_2

H085_66_I006_Note_3_Sensors_3

H085_66_I006_Note_4_Control_Concept1

H085_66_I006_Note_5_Control_Concept2

H085_66_I006_Note_6_Electronics_Signal

H085_66_I006_Note_8_Process_Control_1

H085_66_I006_Note_9_Process_Control_2

PLC_Textbook1

PLC_Textbook2

PLC_Textbook3

PLC

6487E.zip

PLC References

User_Manuals.zip

TRILOGI5-purdue

SetupTL6Edu

Installation

Installation_Instruction

F_Nano-Product_Sheets

PID (Proportional Integral Derivative) Control

PID.zip

Assessment

I006_Tutorials.zip

UEENEEI001B		Install and set up transducers and sensing devices
UEENEEI002B		Solve problems in pressure measurement systems
UEENEEI004B		Solve problems in flow measurement systems

UEENEEI005B		Solve problems in temperature measurement systems

I001

H085_66_I006_Note_1_Sensors 1

H085_66_I006_Note_2_Sensors_2

H085_66_I006_Note_3_Sensors_3

I002+I004

I002I004PressureFlowPnuematicReference.zip

I005

I005TemperatureMeasurement.zip

Process Control Practicals

PLC_Application_Assignment.zip

Control_Circuit_Boards.zip

PLC_Hardware_Notes_1.zip

PLC_Hardware_Notes_2.zip

PLC_Hardware_Notes_3.zip

PLC_Hardware_Notes_4.zip

PLC_Hardware_Notes_5.zip

PLC_Hardware_Notes_6.zip

PLC_Trilogy_Advanced_Programs.zip

PLC_SCADA_Project_Example_1.zip

PLC_SCADA_Project_Example_2.zip

PLC_SCADA_Project_Example_3.zip

Process_Control_Equipment_Setup_1.zip

Process_Control_Equipment_Setup_2.zip

SCADA_PLC_Project_1.zip

SCADA_PLC_Project_2.zip

SCADA_PLC_Project_3.zip

SCADA_PLC_Project_4.zip

SCADA_PLC_Project_5.zip

MACHINE REPAIR+PROCESS CONTROL

MachineControlCkt1.zip MachineControlCkt2.zip MachineControlCkt3.zip

ProcessControlCkt1.zip ProcessControlCkt2.zip ProcessControlCkt3.zip

Stage 4 Part 1A.zip

http://www.filefactory.com/file/c0cc226/n/Stage_4_Part_1A.zip

Advanced References

BAE 503 Control System

BAE 503 Control System Part 1

Part 2 Competency units of the subject

Linear System + Control System

EE 601 Non Linear Control Applications (1 pt)

EE 601 Control Engineering (1 pt)

EE 601 Feedback and Control System

EE 601 PID_Control

EE 601 Non Linear Control

EE 624 Process Control (1 pt)

http://www.filefactory.com/file/34ha7biln93z/EE_624_Process_Control.pdf

ME 534 Numerical Control Part 1 (1 pt)

ME 534 Numerical Control Part 2

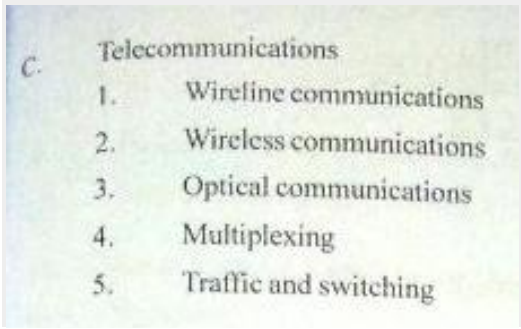
Competency Demonstration Report Elective (3)

Reflect your experience in the work place , write the technical report of 10 pages & submit it.

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in control system in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr

SPECIALIZED AREA (4) Telecommunication


C. Telecommunications
1. Wireline communications
2. Wireless communications
3. Optical communications
4. Multiplexing
5. Traffic and switching

H046 Telecommunication

UEENEEH046B		Solve fundamental problems in electronic communications system
7761AU	EA181	Communication fundamentals

H046TelecomNote1.zip

H046TelecomNote2.zip

H046TelecomNote3.zip

Stage 4 Part 16.zip

http://www.filefactory.com/file/c0cc703/n/Stage_4_Part_16.zip

Advanced References

BAE 604 Telecommunication Engineering

Part 2 Competency units of the subject

Electronics Communications

EE 525 Data Communication (1 pt)

EE 603 Electronics Telecommunication (1 pt)

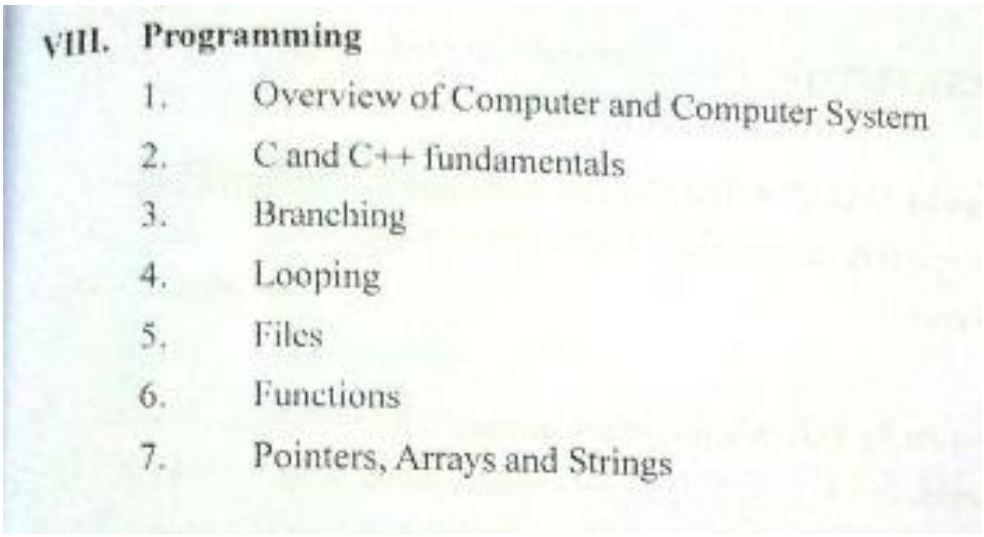
Competency Demonstration Report Elective (4)

Reflect your experience in the work place , write the technical report of 10 pages & submit it.

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in telecommunication system in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr

SPECIALIZED AREA (5) computer Programming



VIII. Programming

1. Overview of Computer and Computer System
2. C and C++ fundamentals
3. Branching
4. Looping
5. Files
6. Functions
7. Pointers, Arrays and Strings

BAE 601 Computer Programming

C++ Programming Part 1

C++ Programming Part 2

C++ Programming Part 3

C++ Programming Part 4

C++ Programming Part 5

C++ Programming Part 6

C # Programming

C # Programming

C++ & Java Programming Course

Speed_C_Programming.zip

Turbo_C.zip

C_Programming_1.zip

C_Programming_2.zip

C_Programming_3.zip

C_Programming_4.zip

C_Programming_5.zip

C_Programming_6.zip

C_Programming_7.zip

C_Programming_8.zip

Part 2 Competency units of the subject

IT + Programming 1

IT 401 Object Oriented Programming (1 pt)

IT 402 Structured Programming (1 pt)

IT 403 Visual Basic Programming (1 pt)

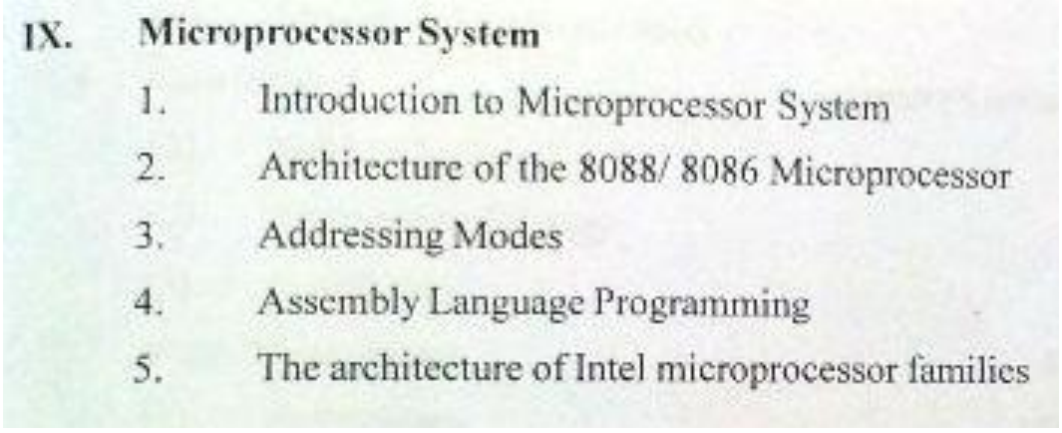
Competency Demonstration Report Elective (5)

Reflect your experience in the work place , write the technical report of 10 pages & submit it.

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in computer programming in above mentioned format & submit it to the assessor.

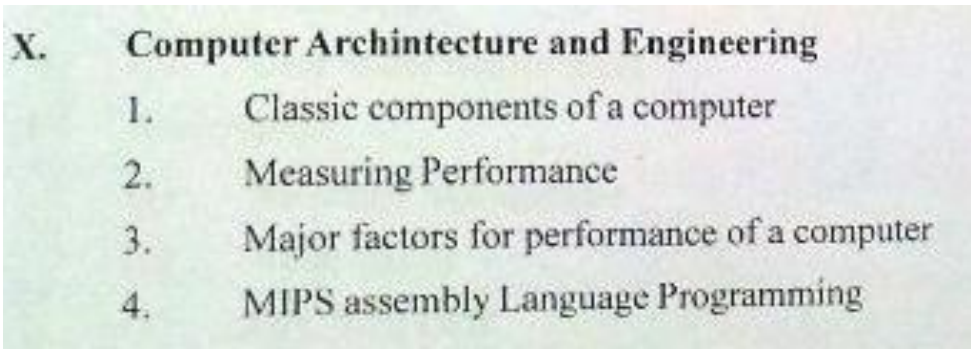
(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr

SPECIALIZED AREA (6) Microprocessor System



IX. Microprocessor System

1. Introduction to Microprocessor System
2. Architecture of the 8088/ 8086 Microprocessor
3. Addressing Modes
4. Assembly Language Programming
5. The architecture of Intel microprocessor families



X. Computer Archintecture and Engineering

1. Classic components of a computer
2. Measuring Performance
3. Major factors for performance of a computer
4. MIPS assembly Language Programming

Computer Programming

UEENEED027B	Develop structured programs for control sub systems to access external devices

UEENEED009B	Develop, enter and verify programs for industrial control systems using high level instruction

Microprocessor_Notes_upload.zip

Microprocessor_Textbook_to_upload.zip

Microprocessor_References_to_upload.zip

Speed_C_Programming.zip

Turbo_C.zip

C_Programming_1.zip

C_Programming_2.zip

C_Programming_3.zip

C_Programming_4.zip

C_Programming_5.zip

C_Programming_6.zip

C_Programming_7.zip

C_Programming_8.zip

MP LAB

33014K.pdf

DS-51317H.pdf

DS-51761B.pdf

MPLAB_Integrated_Development_Environment.doc

MPLAB_IDE_8_50_Release_Notes.zip

MPLAB_User_Guide_51519c.pdf

Stage 4 Part 5A.zip

http://www.filefactory.com/file/c0cc4a1/n/Stage_4_Part_5A.zip

Stage 4 Part 5B.zip

http://www.filefactory.com/file/c0c3a6e/n/Stage_4_Part_5B.zip

Competency Demonstration Report Elective (6)

Reflect your experience in the work place , write the technical report of 10 pages & submit it.

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in microprocessor system in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr