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 workplace 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**

![Image of Measurement and Instrumentation](image)

**STUDY MATERIALS (Electrical Measurement)**

**EE 404 Electrical Measurement (1 pt)**

**Process control-l006+l008+l020.zip**

[http://www.filefactory.com/file/c0b7d9d/n/Process_control-l006_l008_l020.zip](http://www.filefactory.com/file/c0b7d9d/n/Process_control-l006_l008_l020.zip)

**I006**

<table>
<thead>
<tr>
<th>UEEENEEI006B</th>
<th>UEENEEI006B</th>
<th>UEENEEI006B</th>
<th>UEENEEI006B</th>
</tr>
</thead>
</table>
| 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

Digital Electronics Notes

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UEEEN012B</td>
<td>Troubleshoot digital subsystems</td>
</tr>
<tr>
<td>UEEEN043B</td>
<td>Diagnose and rectify faults in digital subsystems of electronic controls</td>
</tr>
</tbody>
</table>


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
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

H045+7761A

<table>
<thead>
<tr>
<th>UEENEEH045</th>
<th>EA100</th>
</tr>
</thead>
<tbody>
<tr>
<td>7761A</td>
<td>Analogue electronics 1</td>
</tr>
</tbody>
</table>

Analog1
Analog2

Assessment-Test + Assignment for flexible study students

Electronics_H045_Tutorials

H025

<table>
<thead>
<tr>
<th>UEENEEH025</th>
<th>NE064</th>
</tr>
</thead>
<tbody>
<tr>
<td>8273Z</td>
<td>Variable speed drives</td>
</tr>
</tbody>
</table>

H025_Operational_Amplifier

Assessment-Test + Assignment for flexible study students
Provide solutions to polyphase electronic power control problems

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/c0cdfe/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

<table>
<thead>
<tr>
<th>UEENEE006B</th>
<th>Solve problems in process controllers, transmitters and converters</th>
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</thead>
<tbody>
<tr>
<td>6032A</td>
<td>EA904</td>
</tr>
<tr>
<td>7761L</td>
<td>EA190</td>
</tr>
</tbody>
</table>

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
### PID (Proportional Integral Derivative) Control

**PID.zip**

**Assessment**

**I006 Tutoriais.zip**

<table>
<thead>
<tr>
<th>UEENEEI001B</th>
<th>Install and set up transducers and sensing devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>UEENEEI002B</td>
<td>Solve problems in pressure measurement systems</td>
</tr>
<tr>
<td>UEENEEI004B</td>
<td>Solve problems in flow measurement systems</td>
</tr>
<tr>
<td>UEENEEI005B</td>
<td>Solve problems in temperature measurement systems</td>
</tr>
</tbody>
</table>

**I001**

- H085 66 I006 Note 1 Sensors
- H085 66 I006 Note 2 Sensors
- H085 66 I006 Note 3 Sensors

**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
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 get 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

H046 Telecommunication

<table>
<thead>
<tr>
<th>UEENEEH046B</th>
<th>Solve fundamental problems in electronic communications system</th>
</tr>
</thead>
<tbody>
<tr>
<td>7761AU</td>
<td>EA181 Communication fundamentals</td>
</tr>
</tbody>
</table>

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

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
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 Architecture 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

| UEE NEED027B | Develop structured programs for control sub systems to access external devices |

| UEE NEED09B | 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
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)