AREA IX
LABORATORIES

I.1. The institution implements the special provisions as listed in the CMO.

ARTICLE II
AUTHORITY TO OPERATE

Section 2 Government Recognition

All Higher Education Institutions (HEIs) including private HEIs, State Universities and Colleges (SUCs), and Local Universities and Colleges (LUCs) intending to offer BSCS, BSIS, and BSIT must first secure proper authority from the Commission in accordance with this PSG. All HEIs with existing BSCS, BSIS, and/or BSIT programs are required to shift to outcomes-based approach pursuant to this PSG and must inform the Commission of such shift. SUCs and LUCs should likewise strictly adhere to the provisions in these policies, standards and guidelines.

ARTICLE III
GENERAL PROVISIONS

Section 3 The succeeding articles provide minimum standards and other requirements and prescriptions. The minimum standards for each program are expressed as minimum sets of desired program outcomes which are given in Article IV Section 6. The Commission designed **sample** curricula to attain such outcomes and these are shown in Article V Section 9. The total number of units for each program is here prescribed as the "minimum unit requirement" under Section 13 of RA 7722. In designing the curricula, the Commission employed curriculum maps which are shown in Article V Section 10 as **sample** curriculum map.

Using a learner-centered/outcomes-based approach, the Commission provided sample curricula delivery methods shown in Article V Section 11. The sample course syllabi given in Article V Section 12 show some of these methods.

Based on the curricula and the means of their delivery, the Commission determined the physical resource requirements for the library, laboratories and other facilities and the human resource requirements in terms of administration and faculty, as indicated in Article VI.

Section 4 The HEIs are allowed to design curricula suited to their own contexts and missions provided that they can demonstrate that the same leads to the attainment of the required minimum set of outcomes, albeit by a different route. In the same vein, they have latitude in terms of curriculum delivery and in terms of specification and deployment of human and physical resources as long as they can show that the attainment of the program outcomes and satisfaction of program educational objectives can be assured by the alternative means they propose.

The HEIs can use the **CHED Implementation Handbook for Outcomes-Based Education (OBE) and the Institutional Sustainability Assessment (ISA)** as a guide in complying with Sections 16, 17 and 22 of Article VII, hereof.

15.2.6 The library facilities may be augmented by providing Learning Commons.

15.3 Space Requirements. - The library should have a seating capacity of at least five percent (5%) of the total students enrolled and a minimum floor area of at least two (2) sqm per seat. This may include spaces provided as Learning Commons.

Section 16 Laboratory and Physical Facilities

16.1 **Classroom Requirements**. There should be at least one classroom per one hundred fifty (150) students enrolled. Preferably, there should be no more than 50 students in a class. In case of large classes with more than 50 students, preferably, there should be separate discussion classes with at most 50 students each.

16.2 **Laboratory Requirements**. The number of terminals dedicated for computing students should be at least 1/5 of the total number of computing students. This is to allow each student to have enough individual hands-on computer time per week. The computer-to-student ratio in a laboratory class should be 1:1.

In addition to teaching facilities, the HEI must provide internet access for the students and faculty members. All computer laboratories must have Internet Access. The minimum dedicated bandwidth must be at least 4Mbps. There should be at least 4Mbps per 500 students. Students must also have access to wifi and to a learning management system.

The required computer hardware and software should be able to respond to the objectives of the courses in the curriculum. They should conform to generally accepted industry standards and be capable of providing training in multiple platforms. There should also be equipment for courses that require specific hardware such as routers and switches. Only licensed software, including free and open source software, may be installed.

16.3 **Audio Visual Facilities.** Every laboratory must be equipped with projection equipment or large display to demonstrate digital content. In addition, projectors must also be available for use in lecture rooms. Large lecture halls must be equipped with sound systems.

ARTICLE VII
COMPLIANCE OF HEIs

Using the **CHED Implementation Handbook for OBE and ISA** as reference, a HEI shall develop the following items which will be submitted to CHED when they apply for a permit for a new program or the approval of the transformation of existing programs to outcomes-based framework:

Section 17 The complete set of program outcomes, including its proposed additional program outcomes.

Section 18 Its proposed **curriculum** and its justification including a curriculum map.

Section 19 Proposed **performance indicators** for each outcome. Proposed measurement system for the level of attainment of each indicator.

College of Engineering and Computing
Department of Computer Science and Information Systems
CE-16 Laboratory (Inventory) as of S.Y. 2016-2017

Motherboard	Processor	RAM	HDD	ATX	Keyboard	Mouse	Remarks	Units
F1A55-M LX PLUS	AMD A4-3300 APU w/ Radeon ™ HD Graphics	2048 MB DDR3 1333 MHz	500GB WD	TowerCase (Blue\Black)	Genius	Genius	Functional	16
P5KPL-AM SE	PENTIUM® Dual Core CPU E5300 @260 GHz	2048 MB DDR2 Kingston	160GB	TowerCase (Green\Black)	Genius	Genius	Functional	10
MCP6P M2T 61PBM616 BF	AMD Sempron™ LE-1200	1024 MB DDR2 Kingston	80GB	Redfox TowerCase	Redfox	A4tech	Functional	7

Monitor	Model	Type	Units	Remarks
Light Emitting Diode	Flatron L177WSB	17" LED monitor	4	Functional
Liquid Crystal Display	AOC e950swn	18.5" LCD monitor	17	Functional
Cathode Ray Tube	Redfox RF7600w	17" CRT monitor	5	Functional
Cathode Ray Tube	LG Flatron ET T713SH	17" CRT monitor	3	Functional

Others

Description	Type	Remarks
Molyboard	Electromagnetic White Board	Functional
Kopell MV-248237	SplitType SL36B (Aircon)	Functional
Optima DLP S316	S.R. Q8WQ434AAAAAC3858	Functional
Whiteboard	Instructors whiteboard	Functional
Chairs	White Monoblock chairs 45 pcs	Functional

Prepared by:

CLARENCE DAVE G. GALAS
Lab-In-Charge

Noted by:

Prof. ASTROFIL HYDE M. ALCALA
DCSIS, Chairman

College of Engineering and Computing
Department of Computer Science and Information Systems
CE-13 Laboratory (Inventory) as of S.Y. 2016-2017

Motherboard	Processor	RAM	HDD	ATX	Keyboard	Mouse	Remarks	Units
P5KPL-AM SE	PENTIUM® Dual Core CPU E5300 @260 GHz	2048 MB DDR2 Kingston	160GB	TowerCase Powerlogic (Green\Black)	Redfox	A4Tech	Functional	5
P4145GV	INTEL PENTIUM 4	256MB DDR1	40GB	X-MEN TowerCase	A4Tech	A4Tech	Functional	2
ASUS TUSI-M ACPI-SIS630ET TUSI-M	INTEL CELERON 1.30GHz	128MB SDRAM	40GB	ATX Tower Case White	A4Tech	A4Tech	Functional	9
775iGV	INTEL CELERON 2.8GHz	256MB DDR1	40GB	TrendSonic Tower Case Black	A4Tech	A4Tech	Functional	12
NF615 AM2 SE N61SMA18BF	AMD SEMPRON™ Processor LE-1100	1024 MB ddr2	500GB HDD	RedFox Tower Case White	A4Tech	A4Tech	Functional	1
P4145GV	INTEL CELERON 1.70GHz	256MB DDR1	40GB	VIPER ATX TowerCase	A4Tech	A4Tech	Functional	1
P4145GV	INTEL PENTIUM 4	256MB DDR1	40GB	X-MEN TowerCase	A4Tech	A4Tech	Functional	3

Monitor	Model	Type	Units	Remarks
DLP	Infocus	Digital Light Processing Projector	1	Functional
Cathode Ray Tube	AOC CRT	14" CRT Monitor	19	Functional
Cathode Ray Tube	ANBONN	14" CRT Monitor	19	Functional
Cathode Ray Tube	BENQ	14" CRT Monitor	3	Functional
Cathode Ray Tube	LG	14" CRT Monitor	1	Functional
Cathode Ray Tube	CLEARVUE	14" CRT Monitor	3	Functional
Cathode Ray Tube	Samsung s51v	14" CRT Monitor	5	Functional

Others

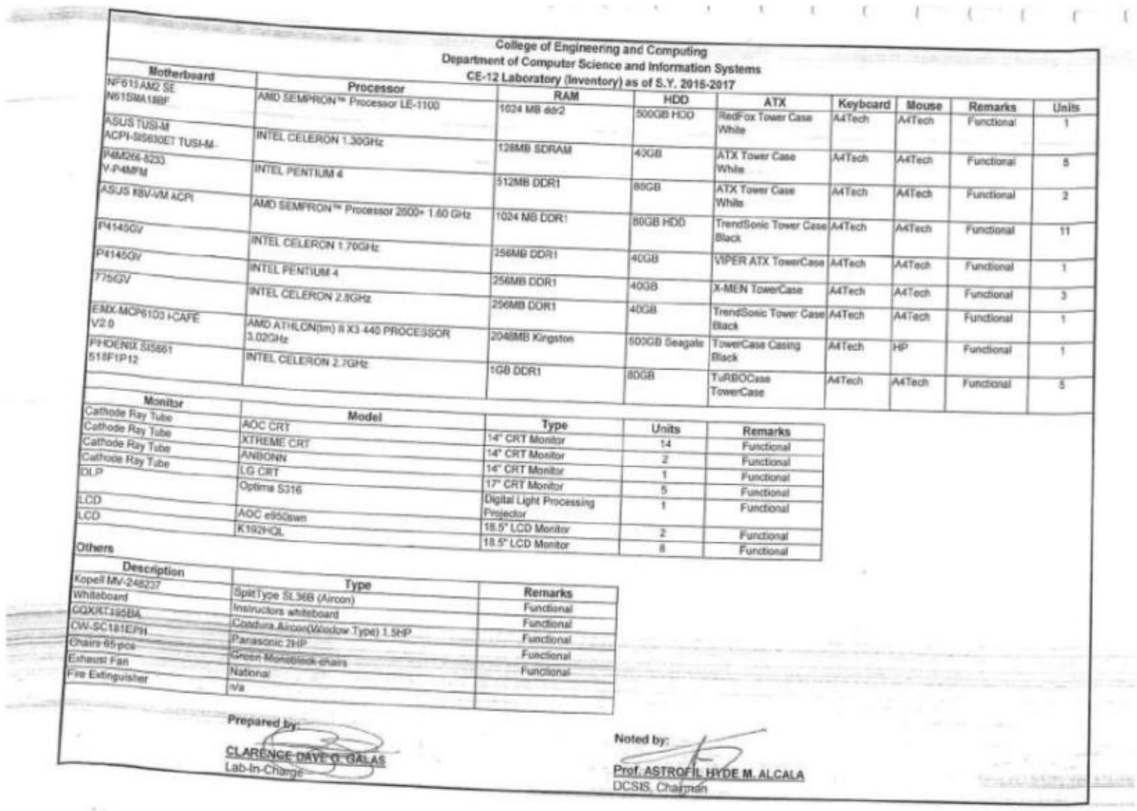
Description	Type	Remarks
CW-SC181EPH	Panasonic 2HP Window TYPE 2HP	Functional
CW-SC181EPH	Panasonic 2HP Window TYPE 2HP	Functional
Chairs 43 pcs	White Monoblock chairs	Functional
Exhaust Fan	Standard	
Fire Extinguisher	n/a	

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DCSIS, Chairman



College of Engineering and Computing
Department of Computer Science and Information Systems
CE-12 Laboratory (Inventory) as of S.Y. 2016-2017

Motherboard	Processor	RAM	HDD	ATX	Keyboard	Mouse	Remarks	Units
NF615 AM2 SE N61SMA18BF	AMD SEMPRON™ Processor LE-1100	1024 MB ddr2	500GB HDD	RedFox Tower Case White	A4Tech	A4Tech	Functional	1
ASUS TUSI-M ACPI-SIS630ET TUSI-M	INTEL CELERON 1.30GHz	128MB SDRAM	40GB	ATX Tower Case White	A4Tech	A4Tech	Functional	5
P4M266-8233 V-P4MFM	INTEL PENTIUM 4	512MB DDR1	80GB	ATX Tower Case White	A4Tech	A4Tech	Functional	2
ASUS K8V-VM ACPI	AMD SEMPRON™ Processor 2600+ 1.60 GHz	1024 MB DDR1	80GB HDD	TrendSonic Tower Case Black	A4Tech	A4Tech	Functional	11
P4145GV	INTEL CELERON 1.70GHz	256MB DDR1	40GB	VIPER ATX TowerCase	A4Tech	A4Tech	Functional	1
P4145GV	INTEL PENTIUM 4	256MB DDR1	40GB	X-MEN TowerCase	A4Tech	A4Tech	Functional	3
775GV	INTEL CELERON 2.8GHz	256MB DDR1	40GB	TrendSonic Tower Case Black	A4Tech	A4Tech	Functional	1
EMX-MCP6103 I-CAFE V2.0	AMD ATHLON(tm) II X3 440 PROCESSOR 3.02GHz	2048MB Kingston	500GB Seagate	TowerCase Casing Black	A4Tech	HP	Functional	1
PHOENIX SIS661 518F1P12	INTEL CELERON 2.7GHz	1GB DDR1	80GB	TuRBOCase TowerCase	A4Tech	A4Tech	Functional	5

Monitor	Model	Type	Units	Remarks
Cathode Ray Tube	AOC CRT	14" CRT Monitor	14	Functional
Cathode Ray Tube	XTREME CRT	14" CRT Monitor	2	Functional
Cathode Ray Tube	ANBONN	14" CRT Monitor	1	Functional
Cathode Ray Tube	LG CRT	17" CRT Monitor	5	Functional
DLP	Optima S316	Digital Light Processing Projector	1	Functional
LCD	AOC e950swn	18.5" LCD Monitor	2	Functional
LCD	K192HQL	18.5" LCD Monitor	8	Functional

Others

Description	Type	Remarks
Kopell MV-248237	SplitType 5L36B (Aircon)	Functional
Whiteboard	Instructors whiteboard	Functional
GQXRT195BA	Condura Aircon(Window Type) 1.5HP	Functional
CW-SC181EPH	Panasonic 2HP	Functional
Chairs-55 pcs	Green Monoblock chairs	Functional
Exhaust Fan	National	Functional
Fire Extinguisher	n/a	

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College of Engineering and Computing
Department of Computer Science and Information Systems
CE-11 Laboratory (Inventory) as of S.Y. 2016-2017

Motherboard	Processor	RAM	HDD	ATX	Keyboard	Mouse	Remarks	Units
NF615 AM2 SE N61SMA18BF	AMD SEMPRON™ Processor LE-1100	1024 MB ddr2	160GB HDD	RedFox Tower Case White	A4Tech	Genius	Functional	29
ASUS K8V-VM ACPI	AMD SEMPRON™ Processor 2600+ 1.60 GHz	1024 MB DDR1	80GB HDD	TrendSonic Tower Case Black	Genius	A4Tech	Functional	8

Monitor	Model	Type	Units	Remarks
Light Emitting Diode	Flatron L177WSB	17" LED monitor	30	Functional
LCD	AOC e950swn	18.5" LCD Monitor	4	Functional
Cathode Ray Tube	AOC CRT	14" CRT Monitor	5	Functional
DLP	Optima S316	Digital Light Processing Projector	1	Functional

Others

Description	Type	Remarks	Units
Netgear ProSafe	24 Port 10/100 Switch	Functional	3
Patch Panel	Patch Panel	Functional	3
National	Exhaust Fan	Functional	1
Condura Window Type	COXRT195BA S.N. 048403501	Functional	1
Panasonic WindowType	S.R. 452802398 CW-SC182EPH	Functional	1
Fire Extinguisher	Fire Extinguisher		1
White Board	Aluminum Type	Functional	1
55 Chairs	Chairs (Green Color)	Functional	55

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College of Engineering and Computing
Department of Computer Science and Information Systems
CE-10 Laboratory (Inventory) as of S.Y. 2016-2017

Motherboard	Processor	RAM	HDD	ATX	Keyboard	Mouse	Remarks	Units
EMX-MCP61D3 i-CAFÉ V2.0	AMD ATHLON(tm) II X3 440 PROCESSOR 3.02GHz	2048MB Kingston	500GB Seagate	TowerCase Casing Black	A4Tech	A4Tech	Functional	32

Monitor	Model	Type	Units	Remarks
Light Emitting Diode	Flatron L177WSB	17" LED monitor	32	Functional

Others

Description	Type	Remarks
Kopell MV-248237	SplitType SL36B (Aircon)	Functional
Whiteboard	Instructors whiteboard	Functional
CQXRT195BA	Condura Aircon(Window Type)	Functional
CW-SC181EPH	Panasonic	Functional
Chairs 40pcs	White Monoblock chairs	Functional
Fire Extinguisher		

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Networking Utilities:

Units	Description	Remarks
8	Patch Panel (AMP 65H1 Cat5E Sys)	with box
1	TP-Link TL-SG3424 (S/N:13c99500229)	Functional
2	RJ-45/RJ11 Network Cable Tester	Functional w/box
2	Cable Tester NS-468	Functional No Battery
36	Modular Box	No Scratch
215	Keystone Jack	with selophane and box
128	Rubber Boots (Yellow)	1 Box
115	Rubber Boots (Blue)	1 Box
5	Race Ways for Patch Pannel	With Box
7	Lan Card Assrtd	Functional
3	Cisco Small Business SF300-24 Ports 10/100 managed switch s/n: DNI1602045Z s/n: DNI155205G6 s/n: DNI162309OX	Functional
1	S/N: CNI7ADAAAA Cisco 3600 Series Managed Router (Sir Oliva Unit)	Functional
10	UTP Cable Cat5e	10 boxes
40	Rays Way	n/a

Tools

Quantity	Description	Remarks
1	JigSaw	Functional
1	Steel Ladder	Functional
1	Hammer	Functional
1	Power Drill JC Kawasaki	Functional
1	Stand Fan	Functional

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