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# **Skill Assessment and Certification by NIELIT Kolkata for students trained by Institutes in Tier2/Tier3 cities in the state of West Bengal**

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## **Skill Assessment and Certification according to the skill of the student**

**Objective:** NIELIT Kolkata invites interested institutes to conduct Training in different Skill Development Courses as per information attached herewith. NIELIT Kolkata will maneuver the entire process through registration, evaluation and certification. The details of the roles and responsibilities of the stakeholders are as follows:

- **Stakeholder 1:NIELIT Kolkata**

Roles and responsibility- Registration, Evaluation and Certification

- **Stakeholder 2:** NIELIT accredited, Affiliated, ESDM Training Partner Webel Training Partner and CSCs and the institutes or individuals already involved in IT park

## **Responsibilities of Stake Holder -1**

**Registration:** Students will be registered by the institutes with NIELIT Kolkata as per guideline provided by the NIELIT Kolkata from time to time. For registration – appropriate Registration Fees + GST per course will be charged by NIELIT Kolkata.

**Skill assessment process:** The Skill will be judged by NIELIT Kolkata through its own mechanism. Key skill will be evaluated through practical and viva examination. Practical will be a combination of different testing of the knowledge they have acquired while undergoing the training program. The assessment will also reflect the market demand so that a demand versus availability may be mapped. For Examination and Certification – appropriate Examination fees + GST per paper will be charged by NIELIT Kolkata.

**Certification:** Certificates will be issued by NIELIT Kolkata to successful (passed) candidates only. In case if a candidate fails to clear the examination he can reappear by making the payment for each appearance.

## **Responsibilities of Stake Holder -2**

**Mobilization ,Registration and Admission of the students** – Concerned Institute/individual will mobilize and register students with NIELIT Kolkata as per guideline provided by the NIELIT Kolkata from time to time. The training fees taken by the institutes from the candidates are fixed. For eligibility of the candidates and course fees in different courses refer Table 1.

**Training Conduction:** The training will be provided by the identified/selected institutes for the courses specified by NIELIT Kolkata. Minimum no of candidates required for conducting examination is minimum 50 for institutes located within 200 km and min 100 for institutes located above 200 km

**Faculty Development program:** NIELIT Kolkata will assess the qualities of the faculties deployed or to be deployed with respect to the courses to be implemented. In case the faculties are not up to the required standards but can be groomed than they will be trained by NIELIT Kolkata as per convenience of both the stakeholders.

### **Infrastructure:**

#### **i) Hardware:**

- a) Minimum 10 number of Computer Systems (for a batch size of minimum 20 and will increase proportionately) having latest configurations (Dual Core and above, Minimum of 1GB RAM, 20 GB Free hard disk space) or appropriate infrastructure as per the course being offered.

- b) Internet Connectivity: 1 Mbps line/ Broad Band
- c) Projector: Minimum 1
- d) Printer: Minimum 1 Printer
- e) Scanner: At least 1
- f) UPS Power supply – adequate as per system requirement
- g) Webcam, Speaker

**ii) Software:**

- a) Windows 7 or Above
- b) Antivirus
- c) Tally Package
- d) AUTOCAD Package
- e) Multimedia Course related Software
- f) Any other software related to the course

**Faculty Member quality:**

Quality of faculties would be according to the following

**Computer Oriented Courses –**

- a) Faculty – Science Graduate with A Level cleared / B Level / MCA / B.E/ B.Tech / M.Sc in Computer Science / M.Sc with Diploma on Computer Courses or higher, B. Com/ M.Com candidates with experience in teaching Financial Accounting related Subject.
- b) Lab Instructor – BCA / Diploma in computer Science or higher
- c) Expertise in respective subject will be preferred

**Electronics Oriented Courses –**

- a) Faculty - B.E / B.Tech/ Diploma/ ITI in Computer Science, Electrical or Electronics & communication, Instrumentation for Hardware Course

**Lab Instructor –**

- a) ITI / Diploma Computer Science, Electrical or Electronics & communication, Instrumentation for Hardware Course

**Table -1**

SL.NO	COURSE NAME	Course Duration	Min Eligibility	Registration Fees without GST	Examination Fees without GST	Training Fees
1	Certificate Course in Advance JAVA	80hrs	XII	500	500	2500
2	Certificate Course in "C" Language	80hrs	XII	500	500	2500
3	Certificate Course in C++	80hrs	XII	500	500	2500
4	Certificate Course in Auto-Cad	80hrs	ITI/Polytechnic/HS/BE/ B.Tech/ M.Tech ( completed or pursuing)	500	500	2500
5	Certificate Course in Desktop Publishing.	80hrs	X	500	500	2500
6	Certificate Course in DOT NET Technology(With ASP, C#)	120hrs	XII	500	500	3000
7	Certificate Course in Financial Accounting with GST.	80 hrs	XII	500	500	2500
8	Certificate Course in Office Tools	40hrs	VII	250	250	2000
9	Diploma Hardware and Networking.	120hrs	X	500	500	3000
10	Diploma in Computer Application	120hrs	XII	500	500	3000
11	Certificate Course in Website Designing.	40hrs	XII	250	250	2000
12	Certificate Course in Soft Skill and Communicative English	40hrs	X	250	250	2000
13	Certificate Course in Oracle DBA	80hrs	XII	500	500	2500
14	Certificate Course in LINUX.	80hrs	XII	500	500	2500
15	Certificate Course in Advance Development Using PHP	40hrs	XII	250	250	2000
16	Certificate Course in Course in Core Java	40hrs	XII	250	250	2000
17	Certificate Course in 2D Animation using Flash	40hrs	XII	250	250	2000

18	Certificate Course in PC Hardware & Networking	40hrs	XII	250	250	2000
19	Certificate Course in CAD, Drafting and 3D Modelling	40hrs	ITI/Polytechnic/HS/BE/B.Tech/M.tech (Completed or Pursuing)	250	250	2000
20	Advanced Diploma in PLC/SCADA/ DRIVES Engineer	120hrs	XII	500	500	3000
21	Basic Data Science using Python	60hrs	XII	250	250	2000
22	Cyber Security	40 hrs	XII	250	250	2000
23	Certificate course in PHP and MySQL	80 hrs	XII	500	500	2500

### 1. Certificate Course in Advance JAVA(80 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to Core Java	10 hrs
2	Introduction to J2EE	06 hrs
3	SQL & JDBC	20 hrs
4	Beans in Servlets	14 hrs
5	Introduction to struts framework	10 hrs
6	JSP	10 hrs
7	Hibernation	10 hrs
<b>Theory / Lecture Hours:</b>		30 hrs
<b>Practical / Tutorial / Lecture Hours:</b>		50 hrs
<b>Total Hours:</b>		80 hrs

### 2. Certificate Course in C Language(80 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to C	02 hrs

2	Data types & operator	06 hrs
3	Logical & looping constructs	15 hrs
4	Functions	06 hrs
5	Arrays & Pointers	25 hrs
6	Structures & union	10 hrs
7	Standard library & header files	06 hrs
8	File Handling Operations	10 hrs
<b>Theory / Lecture Hours:</b>		40 hrs
<b>Practical / Tutorial / Lecture Hours:</b>		40 hrs
<b>Total Hours:</b>		80 hrs

### 3. Certificate Course in C++(80 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to OOP's concept	02 hrs
2	Data types. Operator & Logical /looping	05 hrs
3	Functions and arrays	15 hrs
4	Classes & objects	10 hrs
5	Inheritance	10 hrs
6	Polymorphism	10 hrs
7	Operator overloading	05 hrs
8	Function overloading	05 hrs
9	Exception handling	05 hrs
10	File Handling Operations	08 hrs
11	Introduction to Template	05 hrs
<b>Theory / Lecture Hours:</b>		40 hrs
<b>Practical / Tutorial / Lecture Hours:</b>		40 hrs
<b>Total Hours:</b>		80 hrs

### 4. Certificate Course in Auto-Cad(80 Hrs)

<b>S. No</b>	<b>Topic</b>	<b>Minimum No. of Hours</b>
1	Introduction to Coordinate systems	16 hrs
2	2D drawing & editing	20 hrs
3	3D drawing & editing	20 hrs
4	Layers, blocks, Xrefs, rendering	12 hrs
5	Solid modelling	12 hrs
<b>Theory / Lecture Hours:</b>		30
<b>Practical / Tutorial / Lecture Hours:</b>		50
<b>Total Hours:</b>		80 hrs

**5. Certificate Course in DESK TOP PUBLISHING(80 Hrs)**

<b>S. No</b>	<b>Topic</b>	<b>Minimum No. of Hours</b>
1.	MS paint	10 hrs
2.	Photoshop	24 hrs
3.	Page maker/ in design	12 hrs
4.	Coral draw	24 hrs
5.	Project work	10 hrs
<b>Theory / Lecture Hours:</b>		25 hrs
<b>Practical / Tutorial / Lecture Hours:</b>		55 hrs
<b>Total Hours:</b>		80 hrs

**6. Certificate Course in DOT NET TECHNOLOGY (WITH ASP, C#)[120 Hrs]**

<b>S. No</b>	<b>Topic</b>	<b>Minimum No. of Hours</b>
1.	Dot Net framework	04 hrs
2.	Using ASP.net and C# , Reviews	06 hrs
3.	OOPs concept using C#	12 hrs
4.	Controls in ASP. Net & ASP. Net objects	16 hrs
5.	Master pages, Themes , Skins, User control, Ajax Control Tool kit	07 hrs
6.	Validation controls & security	07 hrs



7.	Navigation tools	07 hrs
8.	Database concepts	05 hrs
9.	Data controls, classes, objects, DLL's	12 hrs
10.	Publishing & Deploying Web App	04 hrs
11.	Membership service	06 hrs
12.	Advance concepts -LinQ	04 hrs
13.	Projects	30 hrs
<b>Theory / Lecture Hours:</b>		50 hrs
<b>Practical / Tutorial / Lecture Hours:</b>		70 hrs
<b>Total Hours:</b>		120 hrs

#### 7. Certificate Course in FINANCIAL ACCOUNTING with GST. (80 Hrs)

S. No	Topic	Minimum No. of Hours
1	<p>Advance Financial Accounting:-  Financial Accounting (Definition, Concept, Process Voucher, Journal &amp; Ledger, Double Entry System).  Classification of A/Cs (Personal, Real &amp; Nominal) and Golden Rules of Accounting. Capital &amp; Revenue Expenditure, Depreciation.  Reports (Trial Balance, Statement of Profit &amp; Loss/ Receipts &amp; Payments and Balance Sheet.  Day Books (Purchase &amp; Sale), Cash/ Bank Book, A/Cs Receivable &amp; Payable, Debit Note, Credit Note, Bank Reconciliation.</p>	04 hrs
2	<p>Tally ERP 9:-  Accounting Softwares (ERP/ SAP, Self developed software used by organizations, Tally ERP 9, etc.).  Tally – Introduction, System Requirement, Main Features, Company Creation, Group Creation, Ledger Creation, Voucher entry, View Reports – Theory &amp; Practical.  Receipts &amp; Payments Voucher, Purchase (inward supply) Voucher/ Register &amp; Sales (outward supply) Voucher/ Register, Journal Voucher/ Register, Bill adjustment method &amp; Outstanding statement, Credit period – Theory &amp; Practical.</p>	16 hrs
	Opening Balance & Opening Balance Sheet, Creation of Admin and	02 hrs

	non-admin users, Password Policy – Theory & Practical. Concept of Financial & Assessment year, IT Act & Rules.	
3	TDS/ TCS under Income Tax Act & GST (Concept, Payments, Returns/ e-filing (Theory & Practical using Tally ERP 9) (Form 16, 16A, 26AS, 26Q, 24Q)	04 hrs
4	GST (Concept, Act/ Rules, over view) CGST, SGST, IGST, UTGST, Composition Tax, Reverse Charge Mechanism ITC, Registration, Tax Payments, Returns, Hands-on Training.	16 hrs
5	Costing using Tally (Theory & Practical):- Concept of Cost Centre, Cost Unit & Cost Category Budget & Budgetary Control, Standard Costing & Variance Analysis, Job & Contract Costing Data Import & Export, Change Company, Backup, Restore, Year ending etc.	06 hrs
6	Sales Invoice & Inventory using Tally:- Sales Invoice with singly/ multiple items, POS Billing, Stock Summary, Stock Category creation and Stock Transfer, Godown Creation, ABC analysis, Stock Journal, Physical Verification of Stock, Manufacturing Inventory.	10 hrs
7	Payroll (PF, ESI, P. Tax, Income Tax, Bonus, Gratuity, Leave Encashment and Components of salary & allowances).	04 hrs
8	Ratio Analysis (Theory & Practical)	02 hrs
9	Revision of Tally Package	08 hrs
10	Revision of GST	04 hrs
11	How to appear interview in different organization as Accounts Professional	02 hrs
12	Interactive Session & Certification distribution	02 hrs
	<b>Theory / Lecture Hours:</b>	40
	<b>Practical / Tutorial / Lecture Hours:</b>	40
	<b>Total Hours:</b>	80 hrs

### 8. Certificate Course in Office Tools(40 Hrs)

S. No	Topic	Minimum No. of Hours
1	Knowing Computer	02 hrs
2	Operating Computer using GUI based OS	04 hrs
3	Word Processing	12 hrs
4	Spread Sheet	12 hrs
5	Communicating using the Internet	02 hrs
6	WWW & Web Browsers	02 hrs.
7	Communication & Collaboration	04 hrs
8	Making Small Presentation	02 hrs.
<b>Theory / Lecture Hours:</b>		20 hrs.
<b>Practical / Tutorial / Lecture Hours:</b>		20 hrs
<b>Total Hours:</b>		40 hrs

### 9. Diploma Hardware and Networking(120 Hrs)

S. No	Topic	Minimum No. of Hours
	Basic of computer, I/O devices	6
	Monitors (CRT/LCD/LED), different types of memory	10
	Hard Disk (SATA, USB, Solid State)	10
	Study of different types of Mother Board	6
	Study of different Buses	4
	I/O Ports, graphic cards	6
	Installation of OS /printer/ modem / scanner	20
	BIOS set up	6
	Recovery & Trouble shooting	20
	Preventive maintenance & Anti-Virus	10
	Networking Fundamentals	22
<b>Theory / Lecture Hours:</b>		40

<b>Practical / Tutorial / Lecture Hours:</b>	80
<b>Total Hours:</b>	120 hrs

### 10. DIPLOMA IN COMPUTER APPLICATION(120 Hrs)

S. No	Topic	Minimum No. of Hours
1	Information Technology and Office Tools - Word processing concepts: saving, closing, Opening an existing document, Selecting text, Editing text, Finding and replacing text, printing documents, Creating and Printing Merged Documents, Character and Paragraph Formatting Spreadsheet Concepts, Creating, Saving and Editing a Workbook, Inserting, Deleting Work Sheets, entering data in a cell / formula Copying and Moving from selected cells, handling Basic Formulae & Functions, Formatting Cells – changing data alignment, changing date, number, character or currency format, changing font, adding borders and colors Creating, Opening and Saving Presentations, Creating the Look of Your Presentation, Working in Different Views, Working with Slides,	10 hrs.
2	Problem solving and programming – The Basic Model of Computation, Programming Languages, Data Types in C, Basic Input/output statement, Simple 'C' programs, Switch statement, Conditions, Relational Operators, if-else statement, Loops: while loop, do while, for loop, Arrays, Structure, Concept of function	10 hrs.
3	Systems Analysis and Design - Introduction to Systems, Development Life Cycle (SDLC). Various phases of SDLC: Study Analysis, Design, Development, Implementation, Maintenance; Documentation: Principles of Systems Documentation, Types of documentation and their importance, Enforcing documentation discipline in an organization Modern Methods for determining system requirements: Joint Application, Development Program, Prototyping, Business Process Re-engineering, Process Modeling, Logical and physical design, Conceptual Data Modeling: Entity /Relationship Analysis, Entity-Relationship Modeling, ERDs and DFDs, Concepts of Normalization. Process Description: Structured English, Decision Tree, Table; Documentation: Data Dictionary	20 hrs.
4	Communication Skills - Letter writing, Paragraph writing, Sentence composition, Essay, CV writing, Communicative skills	20 hrs.

5	Internet Concepts and Web Design – Network definition, Common terminologies: LAN, WAN, Node, Host, Workstation, Network devices, Network Components: Servers, Clients, Communication Media, Types of network: Peer to Peer, Clients Server, Addressing in Internet: understanding the Internet Protocol Address. Network protocols, Network media, Network topologies: Bus, star and ring, Ethernet, Structure of an Email – Email Address, Email Header, Body and Attachments, Overview of Internet Security, Firewalls, Internet Security HTML page structure, HTML Text, HTML links, HTML document tables	10 hrs.
6	Project	20 hrs.
<b>Theory / Lecture Hours:</b>		90 hrs.
<b>Practical / Tutorial / Lecture Hours:</b>		30 hrs.
<b>Total Hours:</b>		120 hrs.

#### 11. Certificate Course in WEB DESIGN (40 Hrs)

S. No	Topic	Minimum No. of Hours
1.	Introduction to Internet & Web	01 hrs
2.	HTML	04 hrs
3.	DHTML	01 hrs
4.	JavaScript	02 hrs
5.	Flash	03 hrs
6.	Photoshop	02 hrs
7.	CSS	02 hrs
8.	Project on Website Development	05 hrs
<b>Theory / Lecture Hours:</b>		20 hrs
<b>Practical / Tutorial / Lecture Hours:</b>		20 hrs
<b>Total Hours:</b>		40 hrs

#### 12. Certificate Course in SOFT SKILL and Communicative English (40 Hrs)

<b>S. No</b>	<b>Topic</b>	<b>Minimum No. of Hours</b>
1	Brief introduction to: Spoken variety of English, the two chief spoken varieties-British and American; Indian English and idea of a neutral accent.	03 hrs
2	Consonant sounds, Vowel sounds in English: Pure vowels (Long vowels and short vowels) Phonetic Symbols,	03 hrs
3	Refresher classes on English Grammar and Vocabulary	03 hrs
4	Connected Speech: Word stress and sentence stress	04 hrs
5	Reading from texts, computer aided teaching and learning exercises	02 hrs
6	Entry behaviour evaluation, Introductory Module on Personality Development	03 hrs
7	Presentation and speech giving techniques	01 hrs
8	Module on Office Etiquette	01 hrs
9	Module on Customer Care	02 hrs
10	Telephone handling Techniques	02 hrs
11	Module on Active Listening	01 hrs
12	Module on Product features and benefits	01 hrs
13	Module on call structure	01 hrs
14	Module on objection handling and questioning Techniques	01 hrs
15	Power point Presentation	01 hrs
16	Module on Telemarketing and Prospecting	01 hrs
17	Module on Complain handling and handling of difficult people	01 hrs
18	Group Discussion	01 hrs
19	Lesson on 'How to Face Interview', Body Language,	04 hrs
20	Debating Competition	01 hrs
21	Conduction of role-plays	01 hrs
22	Conducting Mock interviews	01 hrs
23	Interactive sessions	01 hrs
<b>Total Hours:</b>		40 hrs

### 13. Certificate Course in Oracle DBA(80 Hrs)

<b>S. No</b>	<b>Topic</b>	<b>Minimum No. of Hours</b>
1.	Oracle architecture	02 hrs
2.	Database administration tools	03 hrs
3.	Oracle instance	03 hrs
4.	Creating a database	02 hrs
5.	Data dictionary & views	02 hrs
6.	Control files	02 hrs
7.	Log files	02 hrs
8.	Table space	03 hrs
9.	Storage, structure & relationship	04 hrs
10.	Managing undo data	04 hrs
11.	Managing tables & index	02 hrs
12.	Maintaining data integrity	02 hrs
13.	Managing password security & resources	03 hrs
14.	Users & privileges	03 hrs
15.	Managing rules	02 hrs
16.	Auditing & loading data	01 hrs
<b>Theory / Lecture Hours:</b>		40 hrs
<b>Practical / Tutorial / Lecture Hours:</b>		40 hrs
<b>Total Hours:</b>		80 hrs

#### **14. Certificate Course in LINUX(80 Hrs)**

<b>S. No</b>	<b>Topic</b>	<b>Minimum No. of Hours</b>
1.	Linux OS Architecture and Commands	4 hrs
2.	Filter and Advanced Command	4 hrs
3.	Process Management	6 hrs
4.	Shell and AWK Programming	8 hrs
5.	File system Administration	6 hrs
6.	User Administration	8 hrs

7.	Introduction to mail and file server	4 hrs
<b>Theory / Lecture Hours:</b>		40 hrs
<b>Practical / Tutorial / Lecture Hours:</b>		40 hrs
<b>Total Hours:</b>		80 hrs

#### 15. Certificate Course in Advance Development Using PHP (40 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to PHP	10 hrs
2	Introduction to Ajax	06 hrs
3	OOPS Concept in PHP	03 hrs
4	Concept of MY SQL database	10 hrs
5	Database Programming using PHP and MySQL	06 hrs
6	Concept of CMS	05 hrs
<b>Theory / Lecture Hours:</b>		20
<b>Practical / Tutorial / Lecture Hours:</b>		20
<b>Total Hours:</b>		40 hrs

#### 16. Certificate Course in Course in Core Java (40 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to OOP's Classes and Objects	07 hrs
2	Packages & interfaces	03 hrs
3	Exception handling	03 hrs
4	Multithreading	05 hrs
5	Applets & AWT Controls & Swing	10 hrs
6	SQL & JDBC	10 hrs
7	Java I/O	02 hrs



<b>Theory / Lecture Hours:</b>	15
<b>Practical / Tutorial / Lecture Hours:</b>	25
<b>Total Hours:</b>	40 hrs

### 17. Certificate Course in 2D Animation using Flash (40 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to 2D animation using Flash	01 hrs
2	Vector graphics, Flash layout & interface	01 hrs
3	Shapes & objects	04 hrs
4	Transformation tools	03 hrs
5	Colors, palettes, text	03 hrs
6	Frame , key frames, layering	03 hrs
7	Sounds & video	03 hrs
8	Shape tween, symbols	03 hrs
9	Motion tween, masking	04 hrs
10	Character design & character animation	02 hrs
11	Action script	06 hrs
12	Publishing & exporting flash files	01 hrs
13	Project work	06 hrs
<b>Theory / Lecture Hours:</b>		12
<b>Practical / Tutorial / Lecture Hours:</b>		28
<b>Total Hours:</b>		40 hrs

### 18. Certificate Course in PC Hardware & Networking (40 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to PC Hardware	04 hrs
2	Hardware installation and configuration	04 hrs
3	PC debugging , troubleshooting and Maintenance	04 hrs

4	Software installation and Configuration	04 hrs
5	Networking Basic and Configuration	04 hrs
<b>Theory / Lecture Hours:</b>		10
<b>Practical / Tutorial / Lecture Hours:</b>		30
<b>Total Hours:</b>		40 hrs

### 19. Certificate Course in CAD, Drafting and 3D Modelling (40 Hrs)

S. No	Topic	Minimum No. of Hours
1	Limits ,units ,Line , O-snap , Polygon , Arc , Circle , Elipse , Rectangle , Array , Move , Copy .	02 hrs
2	Rotate , Offset ,Revision cloud , Trim , Stretch , Break , Joint , Selection Method	02 hrs
3	Mirror , Solid , Scale , Extend , Explode , Fillet , Chamfer ,Donut , Layer , Match Properties , Text , Multi Text .	02 hrs
4	Block , Insert , Dynamic Block , W Block , Attribute , External Reference , Hatch ,Gradient .	02 hrs
5	Table , Align , Boundary , Divide , Measure , Point , Region , Polyline .	02 hrs
6	Layout Management , Plotting, Dimension , Properties , Match Properties ,Edit , Edit with grips .	02 hrs
7	Polyline , Lengthen , spline	02 hrs
8	Project of a 2D Drawing	02 hrs
9	Draft setting, Isolate, Different shape in Isometric	02 hrs
10	Project drawing of anisometric model.	02 hrs
11	3D Box , cylinder , Cone , Pyramid , Torus , Extrude , UCS setting , Region , Subtract	02 hrs
12	Loft, loft reference to guide curve, Sweep, Revolve, Union, Intersect, Polysulfide.	02 hrs
13	Planar, surface, Press/ Pull, Slice, Thicken, Smooth object, Extract Face, Imprint.	02 hrs
14	Extrude face, Taper face, Move Face, Copy Face, Color Face, Shell.	02 hrs
15	Helix, Align, Array, Marrow, Fillet, Chamfer, Move Gizmo.	02 hrs
16	Mesh revolves, Mesh edge, Surface, Ruled surface, Tabulate	02 hrs

	Surface.	
17	Convert to solid or surface, material input, Render, Sky off-on, Walk Through.	02 hrs
18	Project	02 hrs
19	Project	02 hrs
20	Project	02 hrs
<b>Theory / Lecture Hours:</b>		10
<b>Practical / Tutorial / Lecture Hours:</b>		30
<b>Total Hours:</b>		40 hrs

## 20. Advanced Diploma in PLC/SCADA/ DRIVES Engineer (120 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to PLC hardware, PLC fundamentals information about PLC components (Power Supply, CPU, I/O Modules, Communication bus), Types of input & outputs, source sink concept in PLC, different electrical power circuit & brief overview on electrical control components, develop basic level programs with ladder diagram. Introduction to PLC programming software, Addressing concept, introduction to bit, byte & word concept. Timer & Counter block programming, upload, downloaded & monitoring of programs, troubleshooting & fault diagnostics of PLC, Familiarizing with ladder programming based on Siemens PLC, Brief overview on analog parameters, various types of analog signals.	60 Hrs
2	Brief overview on SCADA screen design with SCADA software, project preparation in demo mode, prepare animated bit map, writing message files, creating touch zones, data entry/start stop command analog entry, sizing, movement, blinking, visibility, filling, creating alarms & event, connectivity with hardware/software communication protocols, Communication with the SCADA screen with PLC, Communication with data a Acquisition system,	35 Hrs
3	Brief overview on AC Drives, study of different operational methods like PWM method, flux vector control, direct torque/sensor less control etc. On which variable speed drives work. Selection criteria of the drives for particular application, concept study of various types of load for selecting variable speed drives like constant	25 Hrs

	/variable torque load characteristics , constant horse power, configuration of different parameter of various motors through drives i.e. speed & torque control.	
	<b>Theory / Lecture Hours:</b>	60
	<b>Practical / Tutorial / Lecture Hours:</b>	60
	<b>Total Hours:</b>	120 hrs

### 21. Basic Data Science using Python (60 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to Python	2
2	Variable & Data Types , Operator & Default Parameters, Arithmetic Operator	2
3	Stings,Lists, Dictionaries, Tuples, Sets, Boolean, Loops and operators	10
4	Methods and Python documentation, Functions in Python, *args and **kwargs, Introduction, Attributes and class keyword, Class object attributes and methods, Inheritance and polymorphism, Special methods.	
5	Python for Data Analysis using Numpy	4
6	Python for Data Analysis using Pandas	3
7	Data Visualization with Matplotlib	3
8	Data Visualization with Seaborn	4
9	<b>Regression:</b> Simple Linear Regression: Intuition and stepwise implementation in Python, Multiple Linear Regression: Intuition, Polynomial Regression: Intuition and stepwise implementation in Python, Support Vector Machine: Intuition and stepwise implementation in Python, Decision Tree Regression: Intuition and stepwise implementation in Python, Random Forest Regression: Intuition and	12

	stepwise implementation in Python	
10	<b>Classification:</b> Logistic regression: Intuition and stepwise implementation in Python, K-Nearest Neighbors: Intuition and stepwise implementation in Python, Support Vector Machine: Intuition and stepwise implementation in Python	12
11	<b>Clustering:</b> K-means clustering and Hierarchical clustering.	8
<b>Practical / Tutorial / Lecture Hours:</b>		60 hrs
<b>Total Hours:</b>		60 hrs

## 22. Cyber Security (80 Hrs)

S. No	Topic	Minimum No. of Hours
1	Introduction to Networking	2
2	Routing & Switching with Basic Server Administration	
3	Introduction to Ethical Hacking	2
4	Scanning	2
5	Enumeration	2
6	Windows Hacking ( Windows 7 , 10)	4
7	Linux Hacking	4
8	Introduction to Penetration Testing	6
9	Introduction to ISMS 27001	6
10	IDS , IPS , Honeypot	6
11	How to Create Hacking Tools using Python	6
<b>Practical / Tutorial / Lecture Hours:</b>		40 hrs
<b>Total Hours:</b>		40 hrs

## 23. Certificate course in PHP and MySQL (80 Hrs)

SI No.	Topics	Theory Hours	PRACTICAL Hours
1	What is a Scripting Language? Programming Language Vs Scripting Language, What does PHP stand for? Why use PHP?PHP File Extensions .	2	
2	How to Download & Install XAMPP & NetBeans: PHP Tutorial What is XAMPP?Why use XAMPP?How to Download and Install XAMPPBasic Web server configurationXAMPP Control PanelConfigure XAMPP What is the PHP IDE? Introduction to Netbeans IDE	2	2
3	Introduction to PHP : Evaluation of Php Basic Syntax Defining variable and constant Php Data type Operator and Expression	2	4
4	Handling Html Form With Php Capturing Form Data Dealing with Multi-value filed Generating File uploaded form Redirecting a form after submission	2	4
5	DECISIONS AND LOOPMaking Decisions Doing Repetitive task with looping Mixing Decisions and looping with Html PHP If...Else...Elseif PHP Switch PHP While Loops PHP For Loops	2	6
6	FUNCTION What is a function Define a function Call by value and Call by reference Recursive function	2	6
7	STRING Creating and accessing String Searching & Replacing String Formatting String String Related Library function	2	2
8	ARRAY Anatomy of an Array Creating index based and Associative array Accessing array Element Looping with Index based array Looping with associative array using each() and foreach() Some useful Library function	2	4

<b>9</b>	WORKING WITH FILE AND DIRECTORIES: Understanding file& directory Opening and closing a file Coping ,renaming and deleting a file Working with directories File Uploading & Downloading	2	8
<b>10</b>	STATE MANAGEMENT Using query string(URL rewriting) Using Hidden field Using cookies Using session	2	4
<b>11</b>	String matching with regular expression : What is regular expression Pattern matching in Php Replacing text Splitting a string with a Regular Expression	2	4
<b>12</b>	Database Connectivity with MySql: Introduction to RDBMS Connection with MySql Database Performing basic database operation(DML) (Insert, Delete, Update, Select) Setting query parameter Executing query	4	10
	<b>Total hours:</b>	<b>26</b>	<b>54</b>