

ARYA College of Engg. & Research Centre

(Affiliated to Rajasthan Technical University, Kota) • Approved by AICTE, New Delhi)
• S.P.- 40, Kukas Industrial Area (RIICO) Jaipur - 302028 • Website : www.acerc.org
• Ph.: 0141-5148801, 5148802, 5148803 • Fax : 01426-510040

Syllabus of PLC - SCADA

SESSION	TOPIC COVERED - PLC
1	PLC Fundamentals - (Block diagram of PLC's) Applications and Types of Transformers
2	Selection of PLC components(Power supply, CPU, I/Os List , Communication bus Various ranges available in PLC's)
3	I/O list selection /li>
4	Open-Circuit and Short-Circuit Tests
5	Types of Inputs & outputs / Source Sink Concepts
6	Parallel Operation of Transformers
7	Wiring of the I/O devices
8	Architectural Evolution of PLC
9	Introduction to the field devices
10	Types of Inputs & outputs / Source Sink Concepts
11	Wiring of the I/O devices
12	Concept of flags and Scan cycle execution
13	Concept of flags and Scan cycle execution
14	Setting up PLCs / Connecting CPU, I/O modules, Rack, Backplane and Communication bus
15	Connecting Field devices to PLCs I/Os
16	Load /and /or/out / and Read / Write
17	Compare / Add / Sub /And /Or – Blocks
18	Edge / trailing edge instructions
19	MOVE block application, Timer and Counter Blocks programming
20	Advanced instructions
21	File handling and Comment functions
22	Master control /set /reset function
23	Monitoring Arrays & Tags of User-Defined Data Types
24	Editing Ladder Logic Online
25	Troubleshooting Controller Problems
26	Monitoring GSV/SSV Instructions
27	Forcing I/O & Toggling Bits
28	Troubleshooting I/O Module Problems
29	CPU, I/O module replacements
30	Fault detection and error handling
31	TOPIC COVERED - SCADA
32	SCADA system application(Oil GAS / factory /Metro/ Solar Power Plant /Steel Plant)
33	Calculation SCADA tag.
34	Selection of Software basis of SCADA Tag.
35	Creating Database of Tags
36	SCADA Screen /Creating & Editing graphic display with animation

1 . 2 . 2 – Number of Add on / Certificate programs



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Syllabus of AUTOCAD

SESSION	TOPIC COVERED
1	About CADD CENTRE, Introduction of Engineering Drawings, Views, Introduction of AutoCAD, History, GUI, Units, Limits, Line, Circle, Erase, Trim, Extend
2	File Management- New, Open, Save, Close, Exit, Arc, Ellipse, Rectangle, Polygon, Move, Copy, Mirror, Offset.
3	CO-Ordinate System- Absolute, Relative- Rectangular, Polar, Zoom, Pan, Regenrate.
4	Array- Rectangular, Polar, Path, Array Edit
5	Ray Line, Construction Line, Multiline, Ployline, Spline
6	Rotate, Scale, Stretch, Lengthen, Isometric View
7	Hatch, Gradient, Hatchedit, Boundary, Region, Wipeout, Revision Cloud
8	Fillet, chamfer, Break, Join, Explode, Object Properties- color, Linetype, Itscale, lineweight
9	Block- Make, Save, Insert Block Editor, Table, Text
10	Helix, Donut, Match Properties
11	Dimensions- Linear, Angular, aligned, radius, diameter, jogged, mleader, ordinate, baseline, continue, dim space, dim break, tolerance, centre mark, inspection, oblique, align text
12	Dimension Style- Modify, Override, Update, Reassociate Dimension.
13	Parametric Constraint, Geometric Constraint, Auto Constraint, Delete Constraint, Dimension Constraint, Dynamic Constraint, Constraint Bar. Layer tools, Layer State manager
14	Tools- Workspace, tool Palettes, Dynamic Block, Clear Screen, Command Line, Quick Select, Calculator, Draw Order, Isolate, Inquiry, Dipaly Image, Group, Ungroup, Option
15	External Reference, Xbind, Xopen, PDF Underlay, Raster Image, Hyperlink, OLE Object. Field, Update Filed
16	Edit- Copy, Copy with base point, copy link, paste, paste as block, paste Special, Paste to Original Coordinate, Import, Export, Etansmit, Dwg Convert,
17	Page Setup, Plot, Publish,
18	View- Zoom, Pan, Orbit, View Port.
19	Introduction Of 3D, 3D Views, Visual Style, Modeling- Box, Polysolid, Cylinder, Cone, Sphere, Pyramid, Wedge, Tours.
20	Extrude, Revolve, Sweep, Loft, Union, Subtract, Intersect, Presspull
21	Solid Editing-Face, Edge, Body
22	3D Operations- move, rotate, align, mirror, array, Slice, Extract Edges, Extract Isolines,
23	Material Browser, Render

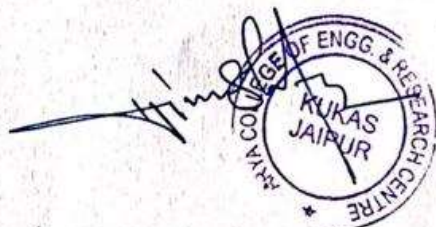


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Syllabus of STAAD Pro

SESSION	TOPIC COVERED
1	Overview of Structural Analysis And Design, Introduction Of STAAD Pro V8i, Global CoOrdinate System , Units, Model Generation, Creating Nodes & Members, Add Beam.
2	Model Editing Tools-Insert Node/Split Beam, Merge Selected Members & Nodes, Intersect, Break Beam, Translation Repeat, Renumber, Practice.
3	Member Properties, Support Specification, Load & Definition, Adding Primary load Case, Member Loads, and Load Combination. Analysis- Perform Analysis, Overview Of Output Page, Post processing.
4	General Guidelines For Design A Single Beam and Practice.
5	Creating Frame Model by Using Structure Wizard, Floor Load. Concrete Design In STAAD Pro Beam & Column Design Using IS: 456
6	Modeling In STAAD Pro, Add Plate, Generate Plate Mesh, Element Properties, Plate Load, Local Co-Ordinate System, Slab/Element Design. Staircase Design, Plate Stress. Spiral staircase
7	Creating Circular Water Tank By Using Circular Beam, Circular Repeat & Create Infill Plates. Concrete Design of Water Tank.
8	Advance RCC Designer In STAAD Pro. Beam Design & Column Design by Using Physical Member.
9	Steel Design In STAAD Pro, Truss Member, Axial Load Through Nodal Load, Steel Table Member Property. Section Data Base, Member Specification.
10	Design Of A Transmission Line Tower by Using Steel Design Code IS: 800.
11	Advance Steel Design For Transmission Line Tower Using Physical Member
12	Shear Wall Design Using surface Modeling, Generate Surface Mesh, Surface Load and Shear Wall Design.
13	Seismology, Standards For Earthquake Design, General Principals for Earthquake Design, Finding Design Base Shear By Using STAAD Pro Static Analysis.
14	Dynamic Analysis for Earthquake Forces By Using Response Spectrum Analysis & Time History Analysis. Practice
15	Foundation Design- Isolated Footing, Combined Footing. Strip Footing, Mat Foundation, Pile Foundation.
16	Wind Load Definition, Bridge design
17	Importing CAD Models In STAAD Pro. , Report Setup, Print.





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37	Data Entry / Start Stop command
38	Analog entry
39	Sizing, Movement, Blinking, Visibility, Filling
40	Trending
41	Creating & Accessing Real-time
42	Creating & Accessing Historical Trend
43	Creating Alarms & Events
44	Connectivity with the different hardware
45	Communication protocols(modbus/ TCP/IP)
46	Communication with PLC
47	Communication with Data Acquisition System
48	Troubleshooting the application
49	Fault diagnostics and error handling
50	Sorting communication problems



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Syllabus of DOT NET

1. Development cycles of enterprise applications.
2. Utilization of .NET framework to build distributed enterprise applications.
3. Develop ASP.NET Web Services, secure web services, and .NET remoting applications.
4. Protocols behind web services including: SOAP, DISCO, and UDDI.
6. 3-tier software architecture (presentation/client tier, application tier, data tier) and develop multi-tier applications.
7. Experiment with the deployment of enterprise applications.
8. Web applications using a combination of client-side (JavaScript, HTML, XML, WML) and server-side technologies (ASP.NET, ADO.NET).
9. Network applications using state-of-the-art RPC technologies including: .NET remoting, and Web Services (SOAP).
10. Cross-platform mobile applications using HTML5 and PhoneGap.

