Government of Pakistan

National Vocational and Technical Training Commission

Prime Minister Youth Skills Development Program

"Skills for All"

Course Contents / Lesson Plan
Course Title: PlanSwift Professional Certification
For construction professionals: a global prospective
Duration: 3 Months

Trainer Name	
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Course Title	**PlanSwift Professional Certification**

Objectives and Expectations	**Employable skills and hands-on practice in PlanSwift**
	
	Objective:
	The objective of this course is to equip trainees with a solid understanding of PlanSwift's core functionalities for architectural, structural and MEP design, catering to the specific requirements of Gulf sites, European buildings and Australian construction companies. Also, it will enhance the efficiency and accuracy of design processes in international construction projects.it will facilitate collaboration among design team member across different geographical location. Moreover, to prepare trainees for the challenges and opportunities of construction estimation in a global context.
	
	Expectations:
	  i. **Technical Proficiency:** Demonstrate proficiency in using PlanSwift core tools and features for global construction projects. They can create accurate and detailed estimation and takeoff adhering to international standards. Understand the principles of PlanSwift and its applications in a global context.
	  ii. **Cultural Sensitivity:** Can adapt to different cultural norms and communications styles. Also, can effectively collaborate with design teams from diverse backgrounds.
	  iii. **Global Sensitivity:** Can apply international estimation standards and best practices to construction projects. Can understand and comply with regional building codes and regulations
	
	Employable Skills:
	
	Completing a 3-month course on PlanSwift with a global perspective can equip with a range of employable skills that are valuable in various industries, particularly in architecture, engineering, and construction (AEC). Here are some key skills and competencies you might gain:
	
	Technical Proficiency:
	
	1. **PlanSwift Software Mastery**: In-depth knowledge of PlanSwift's tools and features, including its user interface, drawing tools, blueprint management, layers, data integration and export.
	2. **Import and Organize Blueprints**: Ability to import various file types (e.g., PDFs, DWF files, images) into PlanSwift, adjust scale and layers, and manage multiple blueprints within a project.
	3. **Measurement and Takeoff Techniques**: Understanding basic takeoffs, such

as lengths, area and volume and advance take off techniques including multiple layers, assemblies, and custom measurements.

Cost Estimation and Assemblies:

1. **Create and Manage Assemblies:** Technical skill in creating, modifying, and applying assemblies (groups of items) to automate and streamline the takeoff process.
2. **Cost Estimation:** Competence in assigning costs to materials, labor, and equipment within PlanSwift, and generating detailed cost estimates
3. **Templates:** Ability to create and use templates for repetitive tasks to ensure consistency and efficiency in the estimation process.

Documentation and Report Generation:

1. **Generate Reports:** Technical proficiency in generating various types of reports, including summary and detailed reports, that reflect the takeoffs and estimates.
2. **Customize Reports:** Ability to customize reports to meet specific project or client needs, including adjusting formats, adding logos, and choosing what data to include

Troubleshooting and Problem-Solving

1. **Technical Troubleshooting**: Skills in diagnosing and resolving common issues with PlanSwift, such as software crashes, misaligned measurements, or incorrect data imports
2. **Problem Solving**: Applying critical thinking to resolve estimation discrepancies or issues that arise during takeoffs

Hands-on Practice:
Practice Exercises: Regularly complete practice exercises and challenges to reinforce your skills.
Real-World Projects: Work on small personal projects or volunteer for local projects to gain real-world experience.
PlanSwift Community: Participate in online forums and communities (e.g., JLC Forums, Reddit) to exchange tips and ask questions.
Software Updates: Stay updated with the latest PlanSwift features and tools to ensure your skills remain current.

Entry-level of trainees	Minimum DAE Civil Architecture Technology Preferably Graduation in Construction
Learning Outcomes of the course	A 3-month PlanSwift course designed for construction professionals with a global perspective should focus on equipping participants with essential skills for construction takeoffs in diverse international contexts. Here's an outline of key learning outcomes you can expect from such a course: **1. Proficiency in PlanSwift Software** **Complete Familiarity with Interface:** Skills to navigate the PlanSwift interface confidently, utilizing all relevant tools, menus, and features efficiently. **Customization Skills:** Ability to customize the workspace, toolbars, and

settings according to specific project needs.

2. Effective Plan and Blueprint Management

Importing and Scaling Plans: Demonstrate the ability to import and correctly scale various types of digital plans (PDFs, DWG files, etc.) within PlanSwift.

Layer Management: Manage layers effectively, organizing and manipulating different elements of a project.

3. Accurate Measurement and Takeoffs

Basic and Advanced Takeoffs: Ability to perform both basic and advanced takeoffs, accurately measuring areas, lengths, and volumes for various construction materials and components.

Use of Assemblies: Skills to create and use assemblies to automate and streamline the takeoff process for complex projects.

4. Cost Estimation and Reporting

Detailed Cost Estimation: Ability to assign costs to materials, labor, and equipment, generating detailed and accurate cost estimates.

Report Generation: Ability to generate comprehensive reports, including summaries and detailed breakdowns, and customize these reports to meet specific client or project requirements.

5. Project Management Integration

Project Organization: Skill to organize and manage multiple projects within PlanSwift, ensuring data integrity and project continuity.

Timeline Integration: Understand cost estimates with project schedules, understanding the relationship between the two and how to manage project timelines within PlanSwift.

6. Advanced Software Features

Use of Advanced Tools: Demonstrate the ability to use advanced PlanSwift tools, such as digital plan overlays.

Custom Tool Creation: Understand custom tools, templates, and macros within PlanSwift to enhance productivity and accuracy.

7. Data Management and Integration

Data Export and Import: Skill in exporting and importing data to and from PlanSwift, ensuring seamless integration with other software and tools.

Version Control: Knowledge of project versions effectively, keeping track of

changes and ensuring that the correct data is used.

8. Problem-Solving and Troubleshooting

Troubleshooting Skills: Ability to diagnose and resolve common technical issues within PlanSwift, ensuring smooth operation and minimizing downtime.

Critical Thinking in Estimation: Skill of critical thinking to identify and solve estimation challenges, ensuring accuracy and reliability in their work.

9. Collaboration and Communication

Team Collaboration: Skill to collaborate effectively with team members using PlanSwift, sharing data and maintaining consistency across shared projects.

Client Communication: Ability to present estimates and reports clearly and professionally to clients and stakeholders, ensuring transparency and understanding.

10. Ethical and Professional Standards

Adherence to Best Practices: Understand industry best practices in construction estimating, ensuring ethical standards and professional conduct are maintained.

Precision and Accuracy: Understand critical impact of precise estimates on project success.

11. Portfolio Development

Project Portfolio: Demonstrate a portfolio of completed projects, demonstrating their proficiency with PlanSwift and showcasing their ability to handle a variety of estimating tasks.

Course Execution	The total duration of the course: **3 months (12 Weeks)** Class hours: **4 hours per day** Theory: Practical: Weekly hours: **20 hours per week** Total contact hours: **240 hours**
Companies offering jobs in the respective trade	- Estimating World - Pontis Construction - Dbuilders - NESPAK - FWO (Frontier Works Organization) - Descon Engineering - Emaar Pakistan - DHA (Defense Housing Authority) - Mott MacDonald

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	• Paragon Constructors
Job Opportunities	• Quantity Surveyor • Cost Estimator • Building Estimator • Junior Estimator • Takeoff Specialist • Technical Estimator • Construction Estimator
No of Students	25
Learning Place	Classroom / Lab

Instructional Resources	**Online Courses and Tutorials:**
	
	1. **Udemy**
	
	  • Course: PlanSwift: Quantity Surveying Building Estimation, Cad Excel & Planswift
	  • Link: https://www.udemy.com/course/quantity-surveyingbuilding-estimation/
	
	2. **YouTube Tutorials**
	
	  • Channel: PlanSwift Estimating Software
	  • Link: https://www.youtube.com/results?search_query=PlanSwift+Estimating+Software
	  • Specific Tutorial: PlanSwift Tutorial for Beginners
	  • Link: https://www.youtube.com/watch?v=Q5Jq4g6pD5A
	
	3. **LinkedIn Learning**
	
	  • Search for Course: Construction Estimating with PlanSwift
	  • Link: https://www.linkedin.com/learning/
	
	4. **PlanSwift Official Website**
	
	  • Resource: PlanSwift Training Center
	  • Link: https://www.planswift.com/training/
	
	Books and References:
	
	1. "Construction Estimating Using Excel"
	
	Author: Steven J. Peterson
	
	Description: This book focuses on using Excel for construction estimating and the principles and methodologies it teaches are directly applicable to digital tools like

PlanSwift.

2. "Estimating in Building Construction”

Author: Frank R. Dagostino and Leslie Feigenbaum.

Description: This book provides a thorough understanding of the fundamentals of construction estimating, which is critical when using software like PlanSwift for detailed takeoffs and cost calculations.

3. "PlanSwift Pro User guide”

Author: Dave Hansen & Aaron Watts.

Description: This book provides a thorough understanding of PlanSwift Software and how to navigate in software, also identification and basic understanding of different tools.

MODULES

Scheduled Weeks	Module Title	Days	Learning Units	Home Assignment
Week 1	Introduction to PlanSwift	Day 1	**Definitions and Concepts in PlanSwift** • Define PlanSwift • Define cost estimation • Define quantity estimation • Explain principle of PlanSwift	**Install PlanSwift Software and configure a workspace according to the project**
		Day 2-3	**PlanSwift's interface and basic Tools** • Introduction to the layout and main components of the PlanSwift interface • Understand main menu, toolbars, workspace, and side panels • Understand layer, zoom and measuring tools.	

		Day 4	**Customizing the Workspace** • Understand customization of PlanSwift workspace to suit specific project needs • Demonstrate how to save and load different workspace configuration	
		Day 5	**Understanding Annotations and Basic Markups** • Overview of annotation tools. • Understand text formatting and dimension styles	
Week 2	**Basic Takeoffs Measurements**	Day1	**Overview of all file types** • Understand different file types and their extensions	
		Day 2-3	**Importing Digital Plans** • Identify data types for PlanSwift Software • Import PDF, DWG, and image files to PlanSwift	**Import a sample blueprint and scale it as per requirement**
		Day 4-5	**Scaling Digital Plans** • Identify scale types used • Adjust Scale of the blueprint accurately within the PlanSwift	

Week 3	Basic Takeoffs Measurements	Day 1	**Performing Basic Takeoffs** • Identify basic takeoff tool in PlanSwift • Understand length, areas and volumes measurements using takeoff tools	**Perform basic takeoff measurements on already imported plan.**
		Day 2-3	**Refining Takeoffs** • Understand techniques for adjusting takeoffs after initial measurements • Use snapping, zoom and precision tools to enhance accuracy	
		Day 4-5	**Reviewing Takeoffs** • Check Takeoffs before reporting • Manage and edit takeoff properties	
Week 4	Advanced Takeoffs and Custom Assemblies	Day 1	**Understand complex shapes and diagram** • Identify complex shapes in a plan • Understand the difference between regular and irregular shape	**Identify a sample plan with complex shapes and import it and perform takeoffs**
		Day 2-3	**Identify advanced tools in PlanSwift** • Identify PlanSwift's Polygon and freeform tools for precise area and length measurements • Identify PlanSwift tools for counting varied items with different properties	

		Day 4-5	**Understand Advanced Takeoff Techniques** • Understand techniques for measuring irregular areas • Identify overlapping and intersecting areas in takeoff calculations • Understand advanced techniques for volume calculation of non-uniform objects	
Week 5	**Advanced Takeoffs and Custom Assemblies**	**Day 1**	**Overview of assemblies** • Identify purpose of assemblies in construction	**Create assembly for repetitive tasks and apply on the project**
		Day 2-3	**Creating Custom Assemblies** • Understand steps for custom assembly creation that includes selecting items, setting quantities and assigning cost • Modify Assemblies for different projects • Understand PlanSwift's batch processing features to apply assemblies across multiple elements	

		Day 4-5	**Managing Custom Assemblies** • Manage assemblies for different project requirement • Modify Assemblies for different projects • Apply custom assembly to multiple areas of a project for consistency and accuracy	
Week 6	**Advanced Takeoffs and Custom Assemblies**	**Day 1**	**Refining Advanced Takeoffs and Assemblies** • Understand techniques for refining assemblies and takeoffs to improve accuracy and efficiency.	**Perform review, troubleshooting and adjustments for custom assemblies and advanced takeoffs of a sample plan**
		Day 2-3	**Troubleshooting Assemblies and Advanced Takeoffs** • Skills to Identify issues with custom assemblies and take offs	
		Day 4-5	**Reviewing and Finalizing Assemblies and Advanced Takeoffs** • Understand methods for reviewing advanced takeoffs and assemblies as per project • Finalize takeoffs and assemblies for integration into the overall cost estimate	

			and project plan	
Week 7	**Cost Estimation**	**Day 1**	**Overview of Cost Estimation** • Introduction to cost estimation and its role in project planning and budgeting • Explanation of direct costs and indirect costs	**Assign costs to a completed takeoff and generate a detailed cost estimate.**
		Day 2-3	**Setting up Cost Data** • Understand steps to input cost data for material, labor, and equipment into PlanSwift • Skills to setup and manage price lists and cost databases • Understanding unit costs and how they are applied to takeoff items	

		Day 4-5	**Applying costs to takeoff items** • Understand how to link takeoff items with corresponding costs from the database completeness • Methods for calculating total costs based on quantities from takeoff data • Adjusting costs based on project specific factors such as location or time frame	
Week 8	**Cost Estimation**	Day 1	**Using Assemblies for Cost Estimation** • Skills to create and apply assemblies that includes predefined costs for materials and labor • Modify assemblies to account for variation in project	
		Day 2-3	**Reviewing and Adjusting Cost Estimates** • Techniques for reviewing cost estimates for accuracy and completeness • Adjust estimates based on project scope changes • Apply contingencies and overhead in the final estimate	**Submit a cost estimate using custom assemblies and export it**
		Day 4-5	**Finalizing and Exporting Cost Estimates** • Understand finalizing cost estimate by incorporating all adjustments,	

			overheads, and contingencies • Export final cost estimate to various formats	
Week 9	**Documentation & Report Generation**	**Day 1**	**Understanding Report types and their uses** • Overview of various report types: detailed estimates, summary reports, material lists, labor cost reports, and project • Understand each report type in project planning and management	
		Day 2-3	**Basic Report Generation in PlanSwift** • Understand step guide on generating basic report from completed takeoffs • Identify appropriate report type and customize report settings	**Submission of a custom report template of cost estimation**
		Day 4-5	**Customizing Report Templates** • Overview of customizable elements in PlanSwift reports, including headers, footers, company logos, and specific data fields. • Skills to save custom templates for future use and ensure consistency across multiple reports.	

Week10	Documentation & Report Generation	Day 1	**Advanced Customization Techniques** • Techniques for adding custom data fields, adjusting report formats, and integrating additional data sources. • How to create multi-layered reports that combine data from different aspects of the project (e.g., cost, labor, materials). • Advanced formatting options, such as conditional formatting and dynamic data displays	**Create and customize a report for a sample project, preparing it for client presentation.**
		Day 2-3	**Reviewing and Finding Reports** • Techniques for reviewing reports to ensure accuracy, completeness, and clarity. • Cross-checking report data with project details to ensure consistency	
		Day 4-5	**Exporting and Sharing Reports** • Understand exporting reports to different formats (PDF, Excel, Word) for various uses • Understanding the requirements for report sharing in different contexts, such as client presentations or internal project reviews.	

Week 11	Advanced PlanSwift Features and Project Management	Day 1	**Digital Plan Overlays** • Introduction to the concept of plan overlays and their importance in construction estimation • Techniques for differences between plan versions using color coding and annotations	
		Day 2-3	**Using 3D Modeling and Visualization Tools** • Overview of 3D modeling capabilities in PlanSwift, including the creation of basic 3D models from 2D plans. • Techniques for visualizing project elements in 3D to better understand complex construction details	**Set up and manage multiple project files in PlanSwift, demonstrating how to organize, track, and archive projects**
		Day 4-5	**Managing Multiple Projects in PlanSwift** • Techniques for organizing multiple projects within the software, including setting up project folders, managing versions, and archiving completed projects • Understand strategies for switching between projects efficiently without losing data or workflow continuity	

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Week 12	Advanced PlanSwift Features and Project Management	Day 1	**Integrating PlanSwift with Other Project Management Tools** • Overview of integration capabilities between PlanSwift and software like Microsoft Project, Excel, and other construction management tools. • Techniques for exporting PlanSwift data into formats compatible with other tools and importing external data into PlanSwift	
		Day 2-3	**Creating and Using Custom Tools and Macros** • Introduction to PlanSwift's customization options, including the creation of custom tools for specific tasks. • Understand steps to build and implement macros that automate frequent or complex operations	**Prepare a project file and apply advanced layer management techniques to a complex project, organizing layers to streamline takeoffs.**
		Day 4-5	**Advanced Layer Management Techniques** • Advanced strategies for organizing and managing layers in large or complex projects. • Techniques for using layer filters, visibility controls, and layer groups to manage project elements effectively. • Using layers to isolate and analyze specific aspects of a project, such as structural components, finishes,	

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			or mechanical systems	

Practical Tasks:

	Task	Description	Week
1	**Install PlanSwift Software and configure a workspace according to the project**	● Learn about software installation and workspace	Week 1
2	**Import a sample blueprint and scale it as per requirement**	● Understand scaling of blueprint	Week 2
3	**Perform basic takeoff measurements on already imported plan.**	● Learn about basic take off measurements	Week 3
4	**Identify a sample plan with complex shapes and import it and perform takeoffs**	● Learn about complex and irregular shapes forms	Week 4
5	**Create assembly for repetitive tasks and apply on the project**	● Learn about assemblies their uses ● Understand custom assembles	Week 5
6	**Perform review, troubleshooting and adjustments for custom assemblies and advanced takeoffs of a sample plan**	● Learn about troubleshooting and adjustments for custom assemblies.	Week 6

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7	**Assign costs to a completed takeoff and generate a detailed cost estimate.**	● Learn about types of cost estimations ● Understand cost estimation generation process in PlanSwift	Week 7
8	**Submit a cost estimate using custom assemblies and export it**	● Understand cost estimate calculation using custom assemblies ● Understand exporting process	Week 8
9	**Submission of a custom report template of cost estimation**	● Learn about submission report of cost estimation ● Understand custom templates of cost estimation	Week 9
10	**Create and customize a report for a sample project, preparing it for client presentation.**	● Understand customization for report ● Understand presentation preparation for cost estimation report	Week 10
11	**Set up and manage multiple project files in PlanSwift, demonstrating how to organize, track, and archive projects**	● Learn about multiple project management in PlanSwift	Week 11
12	**Prepare a project file and apply advanced layer management techniques to a complex project, organizing layers to streamline takeoffs.**	● Learn about advanced layer management techniques in PlanSwift	Week 12

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13	**Create a detailed takeoff and cost estimation of a single storey 10 Marla house and generate report for a presentation.**	● Learn about takeoffs ● Understand cost estimation ● Learn about report generation and customization	Final Exam

Workplace/Institute Ethics Guide

Work ethic is a standard of conduct and values for job performance. The modern definition of what constitutes good work ethics often varies. Different businesses have different expectations. Work ethic is a belief that hard work and diligence have a moral benefit and an inherent ability, virtue, or value to strengthen character and individual abilities. It is a set of values-centered on the importance of work and manifested by determination or desire to work hard.

The following ten work ethics are defined as essential for student success:

1. **Attendance:**

   Be at work every day possible, plan your absences don't abuse leave time. Be punctual every day.

2. **Character:**

   Honesty is the single most important factor having a direct bearing on the final success of an individual, corporation, or product. Complete assigned tasks correctly and promptly. Look to improve your skills.

3. **Team Work:**

   The ability to get along with others including those you don't necessarily like. The ability to carry your weight and help others who are struggling. Recognize when to speak up with an idea and when to compromise by blend ideas together.

4. **Appearance:**

   Dress for success set your best foot forward, personal hygiene, good manner, remember that the first impression of who you are can last a lifetime

5. **Attitude:**

   Listen to suggestions and be positive, accept responsibility. If you make a mistake, admit it. Values workplace safety rules and precautions for personal and co-worker safety. Avoids

unnecessary risks. Willing to learn new processes, systems, and procedures in light of changing responsibilities.

6. <u>**Productivity**</u>:

   Do the work correctly, quality and timelines are prized. Get along with fellows, cooperation is the key to productivity. Help out whenever asked, do extra without being asked. Take pride in your work, do things the best you know-how. Eagerly focuses energy on accomplishing tasks, also referred to as demonstrating ownership. Takes pride in work.

7. <u>**Organizational Skills**</u>:

   Make an effort to improve, learn ways to better yourself. Time management; utilize time and resources to get the most out of both. Take an appropriate approach to social interactions at work. Maintains focus on work responsibilities.

8. <u>**Communication**</u>:

   Written communication, being able to correctly write reports and memos. Verbal communications, being able to communicate one on one or to a group.

9. <u>**Cooperation**</u>:

   Follow institute rules and regulations, learn and follow expectations. Get along with fellows, cooperation is the key to productivity. Able to welcome and adapt to changing work situations and the application of new or different skills.

10. <u>**Respect**</u>:

    Work hard, work to the best of your ability. Carry out orders, do what's asked the first time. Show respect, accept, and acknowledge an individual's talents and knowledge. Respects diversity in the workplace, including showing due respect for different perspectives, opinions, and suggestions.