Government of Pakistan

National Vocational and Technical Training Commission

Prime Minister's Hunarmand Pakistan Program

"Skills for All"

Course Contents/ Lesson Plan

Course Title: SAP ABAP (Advanced Business Application Programming) with SAP
NetWeaver 7.50

Duration: 3 Months

Revised Edition

Trainer Name	
Course Title	**SAP ABAP (Advanced Business Application Programming) with SAP NetWeaver 7.50**
Objectives and Expectations	**Employable skills and hands on practice for SAP ABAP Application Development** Course provides an opportunity to build a great career in the field of SAP ABAP development, course start from basic level and then move towards the advance level. Starting from introduction of SAP ABAP then move towards design principles and patterns of SAP ABAP. This course will cover the different aspects for SAP ABAP development. **Main Expectations:** The aim for the course to prepare the trainees to work as SAP ERP Professional Consultant in the field of Information Systems in a wide variety of Large/Small scale computer-related industries and has a strong emphasis on SAP ABAP Development. The roadmap of the course will start from basic level to advance level to solve problems related to the SAP. Teaching staff will provide the technical knowledge and abilities required to solve tasks and problems that are goal-oriented. They will use participant-centered, practically oriented methods. They will also develop a program of practical assessment that reflects the learning outcomes stated in the curriculum. Trainees of the IT curriculum will also develop their willingness and ability as individuals to clarify issues, as well as think through and assess development opportunities. Teaching staff will also support trainees in developing characteristics such as self-reliance, reliability, responsibility, a sense of duty and a willingness and ability to criticize and accept criticism well and to adapt their future behavior accordingly. Teaching staff also use the IT curriculum to address the development of professional competence. Trainees will acquire the ability to work in a professional environment. 1. Specially designed practical tasks to be performed by the trainees have been included as task. The record of all tasks performed individually or

in groups must be preserved by the management of the training Institute clearly labeling name, trade, session etc so that these are ready to be physically inspected/verified through monitoring visits from time to time. The weekly distribution of tasks has also been indicated in the weekly lesson plan given in this document.

2. In order to materialize the main expectations, a special module on **Job Search & Entrepreneurial Skills** has been included in the later part of this course through which, the trainees will be made aware of the Job search techniques in the local as well as international job markets (Gulf countries). Awareness around the visa process and immigration laws of the most favoured labour destination countries also forms a part of this module. Moreover, the trainees would also be encouraged to venture into self-employment and exposed to the main requirements in this regard.   It is also expected that a sense of civic duties/roles and responsibilities will also be inculcated in the trainees to make them responsible citizens of the country.

3. A module on **Workplace Ethics** has also been included to highlight the importance of good and positive behavior at work place in the line with the best practices elsewhere in the world. An outline of such qualities has been given in the Appendix to this document. Its importance should be conveyed in a format that is attractive and interesting for the trainees such as through PPT slides +short video documentaries. Needless to say that if the training provider puts his heart and soul into these otherwise non-technical components, the image of Pakistani workforce would undergo a positive transformation in the local as well as international job markets.

In order to maintain interest and motivation of the trainees throughout the course, modern techniques such as:

*   Motivational Lectures
*   Success Stories
*   Case Studies

These techniques would be employed as an additional training tool wherever possible (these are explained in the subsequent section on Training Methodology).

Lastly, evaluation of the competencies acquired by the trainees will be done objectively at various stages of the training and proper record of the same will be maintained. Suffice to say that for such evaluations, practical tasks would be designed by the training providers to gauge the problem solving abilities of

the trainees.

1. Motivational Lectures

The proposed methodology for the training under reference employs motivation as a tool. Hence besides the purely technical content, a trainer is required to include elements of motivation in his/her lecture. To inspire the trainees to utilize the training opportunity to the full and strive towards professional excellence. Motivational lectures may also include general topics such as the importance of moral values and civic role & responsibilities as a Pakistani. A motivational lecture should be delivered with enough zeal to produce a deep impact on the trainees. It may comprise of the following:

1. Clear Purpose to convey message to trainees effectively.

2. Personal Story to quote as an example to follow.

3. Trainees Fit so that the situation is actionable by trainees and not represent a just idealism.

4. Ending Points to persuade the trainees on changing themselves.

A good motivational lecture should help drive creativity, curiosity and spark the desire needed for trainees to want to learn more.

Impact of a successful motivational strategy is amongst others commonly visible in increased class participation ratios. It increases the trainees' willingness to be engaged on the practical tasks for longer time without boredom and loss of interest because they can clearly see in their mind's eye where their hard work would take them in short (1-3 years); medium (3 -10 years) and long term (more than 10 years).

As this tool is expected that the training providers would make arrangements for regular well-planned motivational lectures as part of a coordinated strategy interspersed throughout the training period as suggested in the weekly lesson plans in this document.

5. Success Stories

Another effective way of motivating the trainees is by means of Success Stories. Its inclusion in the weekly lesson plan at regular intervals has been recommended till the end of the training.

A success story may be disseminated orally, through a presentation or by means of a video/documentary of someone that has risen to fortune, acclaim, or brilliant achievement. A success story shows how a person achieved his goal through hard work, dedication, and devotion. An inspiring success story

contains compelling and significant facts articulated clearly and easily comprehendible words. Moreover, it is helpful if it is assumed that the reader/listener knows nothing of what is being revealed. Optimum impact is created when the story is revealed in the form of:-

1. Directly in person (At least 2-3 cases must be arranged by the training institute)

2. Through an audio/ videotaped message (2-3 high quality videos must be arranged by the training institute)

It is expected that the training provider would collect relevant high-quality success stories for inclusion in the training as suggested in the weekly lesson plan given in this document.

Suggestive structure and sequence of a sample success story and its various shapes can be seen at annexure III.

3. Case Studies

Where a situation allows, case studies can also be presented to the trainees to widen their understanding of the real-life specific problem/situation and to explore the solutions.

In simple terms, the case study method of teaching uses a real-life case example/a typical case to demonstrate a phenomenon in action and explain theoretical as well as practical aspects of the knowledge related to the same. It is an effective way to help the trainees comprehend in depth both the theoretical and practical aspects of the complex phenomenon in depth with ease. Case teaching can also stimulate the trainees to participate in discussions and thereby boost their confidence. It also makes classroom atmosphere interesting thus maintaining the trainee interest in training till the end of the course.

Depending on suitability to the trade, the weekly lesson plan in this document may suggest case studies to be presented to the trainees. The trainer may adopt a power point presentation or video format for such case studies whichever is deemed suitable but it's important that only those cases are selected that are relevant and of a learning value.

The Trainees should be required and supervised to carefully analyze the cases.

For the purpose they must be encouraged to inquire and collect specific information / data, actively participate in the discussions, and intended solutions of the problem / situation.

	Case studies can be implemented in the following ways: - 1. A good quality trade specific documentary (At least 2-3 documentaries must be arranged by the training institute) 2. Health &Safety case studies (2 cases regarding safety and industrial accidents must be arranged by the training institute) Field visits (At least one visit to a trade specific major industry/ site must be arranged by the training institute)
Entry level of trainees	Since intake level is Bachelors/ Masters, the expectations from the trainees are: • To have knowledge of Computer Programming Languages • Knowledge of SAP ERP • To have concept of SAP ERP
Learning Outcomes of the course	**By the end of this course, the trainees should be able to perform the following competencies**: **By the end of this course, the trainees should gain the following competencies:** • Knowledge of SAP ERP system. • Knowledge of SAP ABAP principles and capabilities to solve all problems related to the SAP. • Hands on experience in SAP ABAP to solve the SAP problems from backend to meet the business requirements. • Perform various tests to detect and provide best possible solution. • Practical knowledge Configuration in the SAP **Job Searching** • More than 250 multinationals and local companies in Pakistan CV building as per job demand • SAP ABAP Developer
Course Execution Plan	Total duration of course:3 **months (12 Weeks)** Class hours:**4 hours per day** Theory:**20%**

	Practical: **80%** Weekly hours: **20 hours per week** Total contact hours: **240hours**
Companies offering jobs in the respective trade	• FMCG • Energy Sector • Oil and Gas • Manufacturing Industries • IT Industries • Automobiles • Pharmaceutical Industries • Utility Sector
Job Opportunities/job titles	• SAP ABAP Developer • SAP Implementation Consultant (Implementation Partner) • SAP in-house Consultant • SAP Super / Power User • Freelancer
No of Students	25
Learning Place	Classroom / Lab
Instructional Resources	https://www.tutorialspoint.com/sap_abap/index.htm SAP ABAP Tutorial https://www.guru99.com/abap-tutorial.html SAP ABAP Programming Tutorials https://www.saphub.com/abap-tutorial/ ABAP Tutorial https://www.youtube.com/watch?v=ALU1KQRnD4A SAP ABAP tutorial - SAP Introduction

MODULES

Scheduled Weeks	Module Title	Learning Units	Rmarks
Week 1	• **ABAP Workbench Fundamentals**	• **Motivational Lecture (**For further detail please see Page No: 3& 4) • **Course Introduction** • **Job market** • **Course Applications** • **Institute/work ethics** • Unit 1: SAP Systems & Portfolio • Unit 2: SAP Navigation Basics, User Interface & System Core • Unit 3: Communication and Integration Technologies with ABAP Flow • Unit 4: ABAP Workbench and Elements	• **Task 1** • **Task 2** • **Task 3** • **Task 4**
Week 2	• **ABAP Workbench Fundamentals**	• **Success stories** (For further detail please see Page No: 3& 4) • Unit 5: Modularization Techniques in ABAP • Unit 6: Complex Data Objects • Unit 7: Data Modeling and Data Retrieval • Unit 8: Classic ABAP Reports	• **Task 5**
Week 3	• **ABAP Workbench Fundamentals** • **ABAP Workbench Concepts**	• **Motivational Lecture (**For further detail please see Page No: 3& 4) • Unit 9: Program Analysis Tools, Program Calls and Memory Management • Unit 10: ABAP Open SQL • Unit 11: Introduction to the ABAP Dictionary • Unit 12: Data Types in the ABAP Dictionary	• **Task 6**
Week 4	• **ABAP Workbench Concepts**	• **Success stories** (For further detail please see Page No: 3& 4) • Unit 13: Database Tables and Performance During Table Access • Unit 14: Input Checks • Unit 15: Dictionary Object Dependencies	• **Task 7**

		• Unit 16: Table Changes	
Week 5	• **Create an account profile on Fiverr (at least two gigs) and Upwork**	• **Motivational Lecture (**For further detail please see Page No: 3& 4) Create an account by following these steps: • Step 1: Personal Info • Step 2: Professional Info • Step 3: Linked Accounts • Step 4: Account Security	• **Task 8**
	• **ABAP Workbench Concepts**	• Unit 17: Views and Maintenance Views Unit 18: Search Helps • Unit 19: Selection Screens Unit 20: Introduction to Screen Programming	
Week 6	• **ABAP Workbench Concepts**	• **Success stories** (For further detail please see Page No: 3& 4) • Unit 21: The Program Interface • Unit 22: Simple Screen Elements • Unit 23: Screen Error Handling	• **Task 9**
	• **Midterm**		
Week 7	• **Build your CV**	• **Motivational Lecture (**For further detail please see Page No: 3& 4) Download professional CV template from any good site (https://www.coolfreecv.com or relevant) • Add Personal Information • Add Educational details • Add Experience/Portfolio • Add contact details/profile links	• **Task 10**
	• **ABAP Workbench Concepts**	• Unit 24: Sub-screens and Tab-strip Controls • Unit 25: Introduction and Fundamental of Object-Oriented Programming • Unit 26: Inheritance and Casting	

Week 8	• **ABAP Workbench Concepts**	• **Success stories** (For further detail please see Page No: 3& 4) • Unit 27: Object-Oriented Events and Repository Objects • Unit 28: ABAP Object-Oriented Examples and Class based Exceptions • Unit 29: Object-Oriented Design Patterns, Program Calls and Memory Management with Dynamic Programming	• **Task 11**
Week 9	• **ABAP Workbench Concepts**	• **Motivational Lecture (**For further detail please see Page No: 3& 4) • Unit 30: Adjustment of SAP Standard Software and Enhancement of Dictionary Elements • Unit 31: Customer Exits, Classic and New Business Add-Ins • Unit 32: Explicit Enhancement Options & Implicit Enhancements	• **Task 12**
Week 10	• **ABAP Workbench Concepts**	• **Success stories** (For further detail please see Page No: 3& 4) • Unit 33: Modifications of the SAP Standard Application and Web Dynpro • Unit 34: Web Dynpro Controllers and Web Dynpro Context • Unit 35: Web Dynpro User Interface and Controller and Context Programming	✓ **Task 13**

	• **How to search and apply for jobs in at least two labor marketplace countries (KSA, UAE, etc.)**	• Browse the following website and create an account on each website
		  ▪ Bayt.com – The Middle East Leading Job Site
		  ▪ Monster Gulf – The International Job Portal
		  ▪ Gulf Talent – Jobs in Dubai and the Middle East
		• Find the handy 'search' option at the top of your homepage to search for the jobs that best suit your skills.
		• Select the job type from the first 'Job Type' drop-down menu, next, select the location from the second drop-
			✓

		down menu.
		• Enter any keywords you want to use to find suitable job vacancies.
		• On the results page you can search for part-time jobs only, full-time jobs only, employers only, or agencies only. Tick the boxes as appropriate to your search.
		• Search for jobs by:
		   ▪ Company
		   ▪ Category
		   ▪ Location
		   ▪ All jobs
		   ▪ Agency
		
		• Industry	

Week 11	• **On Job training**		
Week 12	• **On Job training**		
Week 13	• **Final Term**		

Tasks For Certificate in SAP ABAP (SAP NetWeaver 7.50)

Task No.	Task	Description	Week
1.	**SAP World**	Search what is SAP and What roles and responsibilities of SAP certified person	**Week 1**
2.	**Find the career path**	Prepare a career path related to your course and also highlight the emerging trends in the local as well as international market	
3.	**Work Ethics**	Generate a report on Institute work ethics and professionalism related to your course	
4.	**Use SAP GUI**	• Download SAP GUI • Install SAP GUI	
5.	**Classical ABAP Reports**	• Hello World • Sample Data Report	**Week 2**
6.	**Data Dictionary-I**	• Creation of Domains and Data Elements • Creation of Transparent Table	**Week 3**
7.	**Data Dictionary-II**	• Database tables analysis • Database operations	**Week 4**
8.	**Views and Search helps**	• Creation of Maintenance views • Creation of search helps	**Week 5**
9.	**Screen Programming-I**	• List of screen elements • Sample screen design	**Week 6**

10.	Screen Programming-II	• Creation of Sunscreens • Creation of Tab strips	Week 7
11.	ABAP OOPs	• ABAP code using OOPs	Week 8
12.	Enhancements	• Implementing User exits and BADIs • Implementing User Implicit and explicit Enhancements	Week 9
13.	Web Dynpro Application	• Creation of Web Dynpro Application	Week 10
14.	On Job Training	• On Job Training • Final Year Project • Internship in different industries where SAP is implemented.	Week 11 & Week 12

SAP ABAP Application Developer

What is freelancing and how you can make money online - BBCURDU

https://www.youtube.com/watch?v=9jCJN3Ff0kA

What Is the Role of Good Manners in the Workplace? By Qasim Ali Shah | In Urdu

https://www.youtube.com/watch?v=Qi6Xn7yKIlQ

Hisham Sarwar Motivational Story | Pakistani Freelancer

https://www.youtube.com/watch?v=CHm_BH7xAXk

Failure to Millionaire - How to Make Money Online | Fiverr Superhero Aaliyaan Success Story

https://www.youtube.com/watch?v=d1hocXWSpus

SUCCESS STORY

S. No	Key Information	Detail/Description
1.	**Self & Family background**	**Maira Shaukat,** who lives in Karachi, is an example of how hard work and perseverance can reap rich rewards working as ABAP consultant at Engro Corporation Limited Karachi. But this isn't a story of overnight success – Maira had to work hard to differentiate herself and stay true to her goal. It was a full year later, in May 2017, when Maira finally decided to jump in. She signed up for one of a company that have good reputation in the market. **If at first you don't succeed, try try again**
2.	**How he came on board NAVTTC Training/ or got trained through any other source**	Certification in SAP HCM from Excellence Delivered (NAVTTC partner institute)
3.	**Post training activities**	**Maira's** area of expertise is in **Humanc Capital Management**. But it wasn't so simple. During the SAP training she secure a position at AWT as a HCM Power User. "I needed to understand what worked, so I read SAP related articles, books, and practice day and night on the SAP GUI Software to get get a strong grip on SAP. It was an uphill struggle, but I didn't want to give up," she explains.
4.	**Message to others** **(under training)**	Take the training opportunity seriously Impose self-discipline and ensure regularity Make Hard work pays in the end so be always ready for the same.

Note: Success story is a source of motivation for the trainees and can be presented in several ways/forms in a NAVTTC skill development course as under: -

1. To call a passed out successful trainee of the institute. He will narrate his success story to the trainees in his own words and meet trainees as well.
2. To see and listen to a recorded video/clip (5 to 7 minutes) showing a successful trainee Audio-video recording that has to cover the above-mentioned points.*
3. The teacher displays the picture of a successful trainee (name, trade, institute, organization, job, earning, etc) and narrates his/her story in the teacher's own motivational words.

*The online success stories of renowned professional can also be obtained from **Annex-II***

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. **Productivity:**

   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. **Organizational Skills:**

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. **Communication:**

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

9. **Cooperation:**

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. **Respect:**

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.