

## Web Development Foundations

Session No#	Session mode	Session Details	Week-Day	Duration Hrs
1	Adaptive Knowledge KN-Async	<p><b>IU 1: Fundamentals of SDLC &amp; Technical Design</b></p> <p><b>1. Instructional contents (text)</b></p> <ul style="list-style-type: none"> <li>• Foundations of Web Development &amp; Technical Design</li> <li>• Web Development Fundamentals (Internet, Web Applications, Architecture, HTTP, SDLC)</li> <li>• Understanding Web Applications (Real-life examples)</li> <li>• How Websites Work (Simple Request-Response)</li> <li>• Basic Components of a Web Application (Frontend, Backend, Database)</li> <li>• Introduction to UI/UX Design(Simple user interaction ideas)</li> </ul> <p><b>2. Instructional contents converted to PPT Video/Podcast</b></p> <ul style="list-style-type: none"> <li>• Request Response lifecycle</li> </ul> <p><b>3. Instructional contents curation from third party (eLearning videos/articles)</b></p> <p><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Learning Django (LinkedIn Learning Course)</li> </ul> <p><b>Supplementary Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Tech talk for nontechnical professionals (LinkedIn Learning Course)</li> </ul> <ul style="list-style-type: none"> <li>• Learners are required to complete all e-content to develop a strong understanding of the concepts.</li> <li>• If clarification is required, learners should seek assistance from the AI Mentor.</li> <li>• Any unresolved questions related to concepts, case studies, or skills should be posted in the Teams channel for peer or mentor support.</li> <li>• Learners must complete formative assessments (e.g., MCQs, short-answer questions) and achieve minimum 70% score before progressing.</li> <li>• Auto-graded results and feedback will be provided. Learners are required to review the feedback and reattempt the assessments until minimum 70% is achieved.</li> </ul>	Week 1 - Before next Sync session	3
		<p><b>IU 1: Fundamentals of SDLC &amp; Technical Design</b></p> <p><b>Concept and Demo</b></p> <ul style="list-style-type: none"> <li>• Technical Design for Full-Stack web Development</li> </ul> <p><b>Case Study</b></p> <ol style="list-style-type: none"> <li>1. Student Course Registration System (SCRS) - Web Fundamentals &amp; System Basics</li> </ol>		

2	Adaptive Knowledge KN-Sync	<p>2. Smart Library Management System (SLMS) - Web Fundamentals &amp; System Basics</p> <p><b>Assignment 1</b></p> <ul style="list-style-type: none"> <li>Online Event Management Web Application (Functional Requirements and Technical Design)</li> <li>This session will be delivered either as a live synchronous session conducted by the instructor or through a recorded instructor-led flipped class, which learners are required to attend.</li> <li>During this session, the instructor will explain the case study to reinforce learners' understanding of the concepts.</li> <li>An overview of the assignment will be provided, outlining the requirements that learners are expected to complete.</li> <li>This is a mandatory session, and attendance is required to meet the 75% attendance criteria.</li> </ul>	1-1	3
3	Adaptive Skills Practice SK-Async	<ul style="list-style-type: none"> <li>Upon completing the adaptive knowledge (synchronous and asynchronous) sessions, learners will be able to work on the assignments.</li> <li><b>Assignment 01: Online Event Management Web Application (Functional Requirements and Technical Design)</b></li> <li>If clarification is required, learners should seek assistance from the AI Mentor. If further support is needed, they may post queries in the Teams channel for peer or mentor support.</li> <li>After submission, learners are required to review the auto-grading results and feedback provided by the AI Mentor and iteratively refine their work until competency is achieved.</li> </ul>	Week 1- Before next Sync Session	3
4	Adaptive Mentoring Support MS-Sync (M)	<ul style="list-style-type: none"> <li>This is a live synchronous session conducted by the mentor to support learner queries across all modules of the qualification.</li> </ul> <p>The mentor will review <b>During this session:</b></p> <ul style="list-style-type: none"> <li>questions posted by learners and the corresponding responses from peers related to the assignments.</li> <li>The mentor will address queries from attending learners across all subjects within the qualification.</li> <li>The objective of this session is to ensure that learners complete all pending assignments within the stipulated deadlines and score minimum 70% in each assignment</li> <li>Attendance at this session is mandatory to meet the minimum 75% attendance requirement.</li> </ul>	1-2	3

5	Adaptive Mentoring Support MS-Sync (M)	<ul style="list-style-type: none"> <li>This is a live synchronous session conducted by the mentor to support learner queries across all modules of the qualification.</li> </ul> <p><b>During this session:</b></p> <ul style="list-style-type: none"> <li>The mentor will review questions posted by learners and the corresponding responses from peers related to the assignments.</li> <li>The mentor will address queries from attending learners across all subjects within the qualification.</li> <li>The objective of this session is to ensure that learners complete all pending assignments within the stipulated deadlines and score minimum 70% in each assignment</li> <li>Attendance at this session is mandatory to meet the minimum 75% attendance requirement.</li> </ul>	1-3	3
6	Adaptive Knowledge KN-Async	<p><b>IU2: Back-end development principles and techniques</b></p> <p><b>1. Instructional contents (text)</b></p> <ul style="list-style-type: none"> <li>HTTP, Backend Logic &amp; Request-Response Handling</li> <li>Web Communication &amp; Backend Fundamentals</li> <li>How Websites Communicate (Client - Server)</li> <li>User Actions &amp; System Responses (Request - Response)</li> <li>Basic Data Flow in Web Applications (Data Flow)</li> <li>Introduction to System Functions (CRUD - Add, View, Update, Delete)</li> <li>Authentication Basics</li> </ul> <p><b>2. Instructional contents converted to PPT video/Podcast</b></p> <ul style="list-style-type: none"> <li>CRUD Operations</li> <li>Authentication</li> </ul> <p><b>3. Instructional contents curation from third party (eLearning videos/articles)</b></p> <p><b>Videos</b></p> <ul style="list-style-type: none"> <li>Become a Django developer (LinkedIn Learning Path)</li> </ul> <p><b>Supplementary Learning Materials</b></p> <ul style="list-style-type: none"> <li>Django Essential Training (LinkedIn Learning Course)</li> </ul> <ul style="list-style-type: none"> <li>Learners are required to complete all e-content to develop a strong understanding of the concepts.</li> <li>If clarification is required, learners should seek assistance from the AI Mentor.</li> <li>Any unresolved questions related to concepts, case studies, or skills should be posted in the Teams channel for peer or mentor support.</li> <li>Learners must complete formative assessments (e.g., MCQs, short-answer questions) and achieve minimum 70% score before progressing.</li> </ul>	Week 1 - Before next Sync session	3

		<ul style="list-style-type: none"> <li>Auto-graded results and feedback will be provided. Learners are required to review the feedback and reattempt the assessments until minimum 70% is achieved.</li> <li></li> </ul>		
7	Adaptive Knowledge KN-Sync	<p><b>IU2: ENTITY-RELATIONSHIP MODELLING AND NORMALIZATION</b></p> <p><b>Concept and Demo</b></p> <ul style="list-style-type: none"> <li>Perform CRUD Operation</li> </ul> <p><b>Case Study</b></p> <ol style="list-style-type: none"> <li>Student Course Registration System (SCRS) - Backend Logic &amp; System Flow</li> <li>Smart Library Management System (SLMS) - Backend Logic &amp; System Flow</li> </ol> <p><b>Assignment 2</b></p> <ul style="list-style-type: none"> <li>Online Event Management Web Application (Analysing Backend Logic &amp; System Flow)</li> </ul> <p>This session will be delivered either as a synchronous session conducted by the instructor or through a recorded instructor-led flipped class, which learners are required to attend.</p> <p>During this session, the instructor will explain the case study to reinforce the learners' understanding of the concepts.</p> <p>An overview of Assignment will also be provided, outlining the requirements that learners are expected to complete.</p> <p>This is a mandatory session, and attendance is required to meet the 75% attendance criteria.</p>	1-4	3
8	Adaptive Skills Practice SK-Async	<ul style="list-style-type: none"> <li>Upon completing the adaptive knowledge (synchronous and asynchronous) sessions, learners will be able to work on the assignments.</li> <li><b>Assignment 02: Online Event Management Web Application (Analysing Backend Logic &amp; System Flow)</b></li> <li>If clarification is required, learners should seek assistance from the AI Mentor. If further support is needed, they may post queries in the Teams channel for peer or mentor support.</li> <li>After submission, learners are required to review the auto-grading results and feedback provided by the AI Mentor and iteratively refine their work until competency is achieved.</li> </ul>	Week 1- Before next Sync Session	3
		<ul style="list-style-type: none"> <li>This is a live synchronous session conducted by the mentor to support learner queries across all modules of the qualification.</li> </ul>		

9	Adaptive Mentoring Support MS-Sync (M)	<p><b>During this session:</b></p> <ul style="list-style-type: none"> <li>The mentor will review questions posted by learners and the corresponding responses from peers related to the assignments.</li> <li>The mentor will address queries from attending learners across all subjects within the qualification.</li> <li>The objective of this session is to ensure that learners complete all pending assignments within the stipulated deadlines and score minimum 70% in each assignment</li> <li>Attendance at this session is mandatory to meet the minimum 75% attendance requirement.</li> </ul>	1-5	3
10	Adaptive Mentoring Support MS-Sync (M)	<ul style="list-style-type: none"> <li>This is a live synchronous session conducted by the mentor to support learner queries across all modules of the qualification.</li> </ul> <p><b>During this session:</b></p> <ul style="list-style-type: none"> <li>The mentor will review questions posted by learners and the corresponding responses from peers related to the assignments.</li> <li>The mentor will address queries from attending learners across all subjects within the qualification.</li> <li>The objective of this session is to ensure that learners complete all pending assignments within the stipulated deadlines and score minimum 70% in each assignment</li> <li>Attendance at this session is mandatory to meet the minimum 75% attendance requirement.</li> <li></li> </ul>	2-6	3
11	Adaptive Knowledge KN-Async	<p><b>IU3: Design Patterns</b></p> <p><b>1. Instructional contents (text)</b></p> <ul style="list-style-type: none"> <li>Design Patterns &amp; Django Architecture</li> <li>How Web Applications Are Organized (Frontend, Backend, Data)</li> <li>Understanding System Components &amp; Structure (MVC, MTV, Components, Request &amp; Data Flow, Scalability &amp; Maintainability)</li> </ul> <p><b>2. Instructional contents converted to PPT video/Podcast</b></p> <ul style="list-style-type: none"> <li>Design Patterns</li> <li>Django Architecture</li> </ul> <p><b>3. Instructional contents curation from third party (eLearning videos/articles)</b></p> <p><b>Videos</b></p> <ul style="list-style-type: none"> <li>Django essential training (LinkedIn Learning Course)</li> </ul> <p><b>Supplementary Learning Materials</b></p> <ul style="list-style-type: none"> <li>Become a Django developer (LinkedIn Learning Path)</li> </ul>	Week 2 - Before next Sync session	3

		<ul style="list-style-type: none"> <li>Learners are required to complete all e-content to develop a strong understanding of the concepts.</li> <li>If clarification is required, learners should seek assistance from the AI Mentor.</li> <li>Any unresolved questions related to concepts, case studies, or skills should be posted in the Teams channel for peer or mentor support.</li> <li>Learners must complete formative assessments (e.g., MCQs, short-answer questions) and achieve minimum 70% score before progressing.</li> <li>Auto-graded results and feedback will be provided. Learners are required to review the feedback and reattempt the assessments until minimum 70% is achieved.</li> </ul>		
12	Adaptive Knowledge KN-Sync	<p><b>IU3: Design Patterns</b></p> <p><b>Concept and Demo</b></p> <ul style="list-style-type: none"> <li>System Architecture and Design Patterns</li> </ul> <p><b>Case Study</b></p> <ol style="list-style-type: none"> <li>Student Course Registration System (SCRS) - System Architecture (MVC/MTV)</li> <li>Smart Library Management System (SLMS) - System Architecture (MVC/MTV)</li> </ol> <p><b>Assignment 3</b></p> <ul style="list-style-type: none"> <li><b>Online Event Management Web Application (Design)</b></li> </ul> <p>This session will be delivered either as a synchronous session conducted by the instructor or through a recorded instructor-led flipped class, which learners are required to attend.</p> <p>During this session, the instructor will explain the case study to reinforce the learners' understanding of the concepts.</p> <p>An overview of Assignment will also be provided, outlining the requirements that learners are expected to complete.</p> <p>This is a mandatory session, and attendance is required to meet the 75% attendance criteria.</p>	2-7	3
13	Adaptive Skills Practice	<ul style="list-style-type: none"> <li>Upon completing the adaptive knowledge (synchronous and asynchronous) sessions, learners will be able to work on the assignments.</li> <li><b>Assignment 03: Online Event Management Web Application (Design)</b></li> </ul>	Week 1- Before next Sync Session	3

	SK-Async	<ul style="list-style-type: none"> <li>If clarification is required, learners should seek assistance from the AI Mentor. If further support is needed, they may post queries in the Teams channel for peer or mentor support.</li> <li>After submission, learners are required to review the auto-grading results and feedback provided by the AI Mentor and iteratively refine their work until competency is achieved.</li> </ul>		
14	Adaptive Mentoring Support MS -Sync (M)	<ul style="list-style-type: none"> <li>This is a live synchronous session conducted by the mentor to support learner queries across all modules of the qualification.</li> </ul> <p><b>During this session:</b></p> <ul style="list-style-type: none"> <li>The mentor will review questions posted by learners and the corresponding responses from peers related to the assignments.</li> <li>The mentor will address queries from attending learners across all subjects within the qualification.</li> <li>The objective of this session is to ensure that learners complete all pending assignments within the stipulated deadlines and score minimum 70% in each assignment</li> <li>Attendance at this session is mandatory to meet the minimum 75% attendance requirement.</li> </ul>	2-8	3
15	Adaptive Mentoring Support MS-Sync (M)	<ul style="list-style-type: none"> <li>This is a live synchronous session conducted by the mentor to support learner queries across all modules of the qualification.</li> </ul> <p><b>During this session:</b></p> <ul style="list-style-type: none"> <li>The mentor will review questions posted by learners and the corresponding responses from peers related to the assignments.</li> <li>The mentor will address queries from attending learners across all subjects within the qualification.</li> <li>The objective of this session is to ensure that learners complete all pending assignments within the stipulated deadlines and score minimum 70% in each assignment</li> <li>Attendance at this session is mandatory to meet the minimum 75% attendance requirement.</li> </ul>	2-9	3
16	Adaptive Knowledge KN-Async	<p><b>IU4: Development using framework</b></p> <p><b>1. Instructional contents (text)</b></p> <ul style="list-style-type: none"> <li>Development Using Django Framework</li> <li>Introduction to Building Web Applications</li> <li>Basic Understanding of Django Framework &amp; Project Structure</li> <li>Basic Understanding of Models, Views, Templates, ORM, CRUD, Authentication</li> <li>How Data is Managed in Applications</li> <li>Introduction to System Features</li> </ul>	Week 2 - Before next Sync session	3

		<p><b>2. Instructional contents converted to PPT video/Podcast</b></p> <ul style="list-style-type: none"> <li>• Frontend and Backend development and integration</li> </ul> <p><b>Supplementary Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Become a Django developer (LinkedIn Learning Path)</li> </ul> <p><b>IU5: Testing &amp; Documentation</b></p> <p><b>1. Instructional contents (text)</b></p> <ul style="list-style-type: none"> <li>• Software Testing Basics</li> <li>• Understanding Errors and Fixing Issues</li> <li>• Introduction Testing &amp; Documentation in Web Development (Unit, Integration, System Testing, UAT, Test Cases, Debugging, Project Documentation)</li> <li>• Introduction Testing in Django</li> </ul> <p><b>2. Instructional contents converted to PPT video/Podcast</b></p> <ul style="list-style-type: none"> <li>• Execution of tests</li> </ul> <p><b>Supplementary Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Become a Django developer (LinkedIn Learning Path)</li> </ul> <ul style="list-style-type: none"> <li>• Learners are required to complete all e-content to develop a strong understanding of the concepts.</li> <li>• If clarification is required, learners should seek assistance from the AI Mentor.</li> <li>• Any unresolved questions related to concepts, case studies, or skills should be posted in the Teams channel for peer or mentor support.</li> <li>• Learners must complete formative assessments (e.g., MCQs, short-answer questions) and achieve minimum 70% score before progressing.</li> <li>• Auto-graded results and feedback will be provided. Learners are required to review the feedback and reattempt the assessments until minimum 70% is achieved.</li> <li>•</li> </ul>		
17	Adaptive Knowledge KN-Sync	<p><b>IU4: Development using framework</b></p> <p><b>IU5: Testing &amp; Documentation</b></p> <p><b>Concept and Demo</b></p> <ul style="list-style-type: none"> <li>• Development and Testing of working solution</li> </ul> <p><b>Case Study</b></p> <ol style="list-style-type: none"> <li>1. Smart Library Management System (SLMS)</li> <li>2. Student Course Registration System (SCRS)</li> </ol> <p><b>Assignments</b></p> <ul style="list-style-type: none"> <li>• <b>Assignment 04 - Online Event Management Web Application (Developing Web Application using Django)</b></li> </ul>	2-10	3

		<ul style="list-style-type: none"> <li><b>Assignment 05 - Online Event Management Web Application (Testing, Validation &amp; Documentation)</b></li> </ul> <p>This session will be delivered either as a synchronous session conducted by the instructor or through a recorded instructor-led flipped class, which learners are required to attend.</p> <p>During this session, the instructor will explain the case study to reinforce the learners' understanding of the concepts.</p> <p>An overview of Assignment will also be provided, outlining the requirements that learners are expected to complete.</p> <p>This is a mandatory session, and attendance is required to meet the 75% attendance criteria.</p>		
18	Adaptive Skills Practice SK-Async	<ul style="list-style-type: none"> <li>Upon completing the adaptive knowledge (synchronous and asynchronous) sessions, learners will be able to work on the assignments.</li> <li><b>Assignment 04 - Online Event Management Web Application (Developing Web Application using Django)</b></li> <li><b>Assignment 05 - Online Event Management Web Application (Testing, Validation &amp; Documentation)</b></li> <li>If clarification is required, learners should seek assistance from the AI Mentor. If further support is needed, they may post queries in the Teams channel for peer or mentor support.</li> <li>After submission, learners are required to review the auto-grading results and feedback provided by the AI Mentor and iteratively refine their work until competency is achieved.</li> </ul>	Week 3- Before next Sync Session	3
19	Adaptive Mentoring Support MS -Sync (M)	<ul style="list-style-type: none"> <li>This is a live synchronous session conducted by the mentor to support learner queries across all modules of the qualification.</li> </ul> <p><b>During this session:</b></p> <ul style="list-style-type: none"> <li>The mentor will review questions posted by learners and the corresponding responses from peers related to the assignments.</li> <li>The mentor will address queries from attending learners across all subjects within the qualification.</li> <li>The objective of this session is to ensure that learners complete all pending assignments within the stipulated deadlines and score minimum 70% in each assignment</li> <li>Attendance at this session is mandatory to meet the minimum 75% attendance requirement.</li> </ul>	3-11	3

20	<b>Adaptive Mentoring Support MS -Sync (M)</b>	<ul style="list-style-type: none"> <li>This is a live synchronous session conducted by the mentor to support learners in completing the project and submitting the project report.</li> <li>The objective of this session is to ensure that learners complete and submit the project report prior to the summative assessment.</li> </ul> <p>Attendance at this session is mandatory to meet the minimum 75% attendance requirement.</p>	3-12	3
21	SA-Sync	<p>Learners who have submitted the <b>project report</b> will attend this session.</p> <p>Summative Assessment (Individual learner)</p> <ul style="list-style-type: none"> <li>Presentation</li> <li>Oral Questioning</li> </ul>	3-13	30 min

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