

## LECTURE PLAN FOR CLOUD COMPUTING HSSC I

**Branch Name:** \_\_\_\_\_

**Date For Start of Session:** \_\_\_\_\_

Lecture #	Contents	SLO Reference
<b>1<sup>st</sup> Term EXAMS</b>		
<b>51</b>	The students will perform practical work by creating documents and spreadsheets using Google Docs and Sheets.	[SLO: CC-11-C-16]
<b>52</b>	The teacher will describe how to use Google Meet for synchronous communication and virtual meetings.	[SLO: CC-11-C-15]
<b>53</b>	The students will perform practical work by participating in a Google Meet session and collaborating in real-time.	[SLO: CC-11-C-15]
<b>54</b>	The teacher will compare the collaborative features of Google Workspace, Microsoft 365, Notion, Pitch, and Discord.	[SLO: CC-11-C-17]
<b>55</b>	The teacher will define serverless architecture and its advantages in cloud computing.	[SLO: CC-11-D-01]
<b>56</b>	The teacher will explore modern PaaS platforms such as Replit, Heroku, and Firebase.	[SLO: CC-11-D-02]
<b>57</b>	The students will perform practical work by exploring PaaS platforms and understanding their use cases.	[SLO: CC-11-D-02]
<b>58</b>	The teacher will introduce Supabase and its features for building web applications.	[SLO: CC-11-D-03]
<b>59</b>	The students will perform practical work by creating a project in Supabase and setting up a PostgreSQL database.	[SLO: CC-11-D-04]
<b>60</b>	The teacher will explain how to build a simple web application using HTML, CSS, and JavaScript.	[SLO: CC-11-D-05]
<b>61</b>	The students will perform practical work by building a basic web application using HTML, CSS, and JavaScript.	[SLO: CC-11-D-05]
<b>62</b>	The teacher will explain how to integrate Supabase with JavaScript for web applications.	[SLO: CC-11-D-06]
<b>63</b>	The students will perform practical work by integrating Supabase into their web application for database interactions.	[SLO: CC-11-D-06]
<b>64</b>	The teacher will introduce Flask for Python and explain how it works for serverless applications.	[SLO: CC-11-D-09]
<b>65</b>	The students will perform practical work by setting up a Flask application and handling HTTP requests.	[SLO: CC-11-D-11]
<b>67</b>	The teacher will explain how serverless functions can simplify application deployment.	[SLO: CC-11-D-10]
<b>68</b>	The students will perform practical work by creating serverless functions using Flask on Replit.	[SLO: CC-11-D-10]
<b>69</b>	The teacher will explain how to build a task management API using Flask.	[SLO: CC-11-D-12]
<b>70</b>	The students will perform practical work by building a task management CRUD API with Flask.	[SLO: CC-11-D-12]
<b>71</b>	The teacher will discuss the advantages of using cloud services like Supabase for task management applications.	[SLO: CC-11-D-08]

<b>72</b>	The students will perform practical work by building a task management application with Supabase.	[SLO: CC-11-D-08]
<b>73</b>	The teacher will explain how virtual machines (VMs) are used in cloud environments for computing tasks.	[SLO: CC-11-E-01]
<b>74</b>	The students will perform practical work by creating and configuring VMs on GCP.	[SLO: CC-11-E-01]
<b>75</b>	The teacher will explain the components of a virtual machine, including CPU, memory, and storage.	[SLO: CC-11-E-01]
<b>76</b>	The students will perform practical work by setting up and managing VMs on Google Cloud Platform (GCP).	[SLO: CC-11-E-01]
<b>77</b>	The teacher will explain how to securely expose virtual machines to the internet.	[SLO: CC-11-F-01]
<b>78</b>	The students will perform practical work by securing VMs and managing network access.	[SLO: CC-11-F-01]
<b>79</b>	<b>Preparation For 2<sup>nd</sup> Term Exams</b>	
<b>80</b>	<b>Preparation For 2<sup>nd</sup> Term Exams</b>	
<b>81-90</b>	<b>2<sup>nd</sup> Term EXAMS</b>	
<b>91</b>	The teacher will discuss load balancing in cloud computing and its importance for scalability.	[SLO: CC-11-F-02]
<b>92</b>	The students will perform practical work by setting up load balancing in GCP for web servers.	[SLO: CC-11-F-02]
<b>93</b>	The teacher will describe different models of storing data on the cloud.	[SLO: CC-11-G-01]
<b>94</b>	The students will perform practical work by uploading files to cloud storage platforms such as Google Cloud Storage.	[SLO: CC-11-G-01]
<b>95</b>	The teacher will explain how cloud storage integrates with computing resources for efficient data processing.	[SLO: CC-11-G-02]
<b>96</b>	The students will perform practical work by connecting cloud storage to compute on GCP.	[SLO: CC-11-G-02]
<b>97</b>	The teacher will discuss the importance of scalability in cloud applications.	[SLO: CC-11-H-01]
<b>98</b>	The teacher will differentiate between vertical and horizontal scaling in cloud applications.	[SLO: CC-11-H-02]
<b>99</b>	The students will perform practical work by scaling a cloud application both vertically and horizontally.	[SLO: CC-11-H-02]
<b>100</b>	The teacher will explain the advantages of transitioning to a full-fledged cloud platform for scalability.	[SLO: CC-11-H-03]
<b>101</b>	The students will perform practical work by designing a scalable architecture using GCP services.	[SLO: CC-11-H-05]
<b>102</b>	The teacher will explain key services of modern cloud platforms for scalability, including compute and load balancing.	[SLO: CC-11-H-04]
<b>103</b>	The students will perform practical work by designing and deploying scalable cloud architecture for a web application.	[SLO: CC-11-H-04]
<b>104</b>	The teacher will explain the concept of auto-scaling in cloud applications and its benefits.	[SLO: CC-11-H-01]
<b>105</b>	The students will perform practical work by enabling auto-scaling for a cloud-based application.	[SLO: CC-11-H-01]
<b>106</b>	The teacher will discuss cloud-native services like containers and orchestration tools.	[SLO: CC-11-H-04]

<b>107</b>	The students will perform practical work by deploying a containerized application on GCP using Kubernetes.	[SLO: CC-11-H-04]
<b>108</b>	The teacher will explain cloud monitoring tools and their role in ensuring application performance.	[SLO: CC-11-H-01]
<b>109</b>	The students will perform practical work by integrating monitoring tools into a cloud-based application.	[SLO: CC-11-H-01]
<b>110</b>	The teacher will explain the concept of microservices and how they benefit cloud applications.	[SLO: CC-11-H-02]
<b>111</b>	The students will perform practical work by designing a microservices-based architecture on GCP.	[SLO: CC-11-H-02]
<b>112</b>	The teacher will discuss the role of cloud security in application scalability and performance.	[SLO: CC-11-H-03]
<b>113</b>	The students will perform practical work by implementing cloud security best practices in a web application.	[SLO: CC-11-H-03]
<b>114</b>	The teacher will explain the use of edge computing in cloud applications for faster data processing.	[SLO: CC-11-H-01]
<b>115</b>	The students will perform practical work by setting up edge computing features in a cloud-based app.	[SLO: CC-11-H-01]
<b>116</b>	The teacher will explain the role of cloud APIs in integration and scalability.	[SLO: CC-11-H-02]
<b>117</b>	The students will perform practical work by integrating third-party APIs into a cloud-based application.	[SLO: CC-11-H-02]
<b>118</b>	The teacher will discuss the significance of data management in cloud applications.	[SLO: CC-11-H-04]
<b>119</b>	The students will perform practical work by implementing data management strategies in cloud apps.	[SLO: CC-11-H-04]
<b>120</b>	The teacher will describe different storage solutions available in the cloud for large-scale applications.	[SLO: CC-11-G-01]
<b>121</b>	The students will perform practical work by setting up and using cloud-based object storage for large-scale data.	[SLO: CC-11-G-01]
<b>122</b>	The teacher will explain cloud deployment strategies and how to choose the right one.	[SLO: CC-11-H-05]
<b>123</b>	The students will perform practical work by selecting a cloud deployment strategy for a sample project.	[SLO: CC-11-H-05]
<b>124</b>	The teacher will explain the final steps for scaling an application and monitoring its performance.	[SLO: CC-11-H-01]
<b>125</b>	The students will perform practical work by scaling their cloud-based application to meet increasing traffic demands.	[SLO: CC-11-H-01]
<b>126</b>	<b>Revision &amp; Preparation</b>	
	<b>FINAL EXAMS</b>	