Faculty qualifying norms

No	Module	For Classroom Faculty	For Lab Faculty	Books to be read by the Classroom and Lab Faculty

1	Operating System Concepts	• Sound understanding of OS principles
		• Knowledge of Unix Internals
		• Case studies on Unix
		• Case studies on Windows NT
		• Good Knowledge of NT BackOffice
		• Must have solved at least 10 problems from each of the chapters give below of the OS book by Silberchartz Galvino and Peterson.
		  • Memory Management
		  • Process Management
		  • File Management
		  • Case Studies in Windows NT and Unix
			• Knowledge of user's perspective of NT
			• Knowledge of User account
			• management on NT/Unix
			• Knowledge of Backup management on NT/Unix
			• Unix shell programming
				• Operating System Concepts by Silberschatz / Galvin, Wiley Publishers
				• Modern Operating Systems by Andrew Tannenbaum, 2001 Edition, Prentice Hall India
				• Operating Systems incorporating Unix and Windows, Colin Ritchie
				• Operating System Concepts, Achyut Godbole, TMH
				• Operating Systems - A Modern perspective, Gary Nutt, Addison Wesley

2	Software Application Development Tools & Techniques	• Knowledge of SDLC, OOAD • Knowledge of International standards eg. IEEE, ISO, etc. • Knowledge of SEI/CMM Levels • Should have hands on experience on CASE tools such as Erwin, Designer 2000, Power Designer, Rational Test Studio • Should have documented all activities of at least one project using any international standard • Must have implemented the case studies/exercises given in the Pressman's book for software engineering.	• Knowledge of SDLC, OOAD • Knowledge of International standards eg. IEEE, ISO, etc.	• Software Engg – A Practitioner's approach by Roger S.Pressman • Fundamentals of Software Engineering by Rajib Mall • Agile Analytics: A Value-Driven Approach to Business Intelligence and Data Warehousing 1st Edition / Pearson Education • Agile Project Management with Scrum by Ken Schwaber • The Mythical Man-Month: Essays on Software Engineering by Frederick P. Brooks Jr. • User Stories Applied: For Agile Software Development 2016 by Mike Cohn
3	Database Technologies	• RDBMS concepts • Client/server architecture • Open source databases Like MySQL, PostGreSQL • Oracle architecture	• Should have development experience in D2K.	• Professional Nosql/ Wiley India Pvt Ltd • Mastering Database technologies by Ivan Bayross,BPB

		• SQL, PL /SQL • Oracle Administration • MSSQL • Should have developed at least 25 mid-range database applications with analysis, design and documentation		• Oracle9i DBA Certification Guide • Database Management Systems by Gerald V Post • Oracle9i Beginners Guide • PL/SQL Guide-Orilley's
4	Microsoft .NET	• Should have a sound conceptual knowledge of OOP, OOAD, Client server technology, n-tier mechanism. • Sound knowledge of Microsoft .NET framework. • Sound knowledge of .NET elements. • Working experience in .NET framework.	• OOP, OOAD, client server technology concepts. • Sound knowledge of Microsoft .NET framework and .NET elements. • Working experience in .NET framework. • Working experience in ASP.NET/C#/ADO.NET	• Pro C#2008 and the .NET 3.5 platform ,Beginning ASP.NET 3.5 in C#2008 by Apress • .NET Framework 2.0,Wrox Publications,Professional C# 2005,Professional C# 2008, .NET Framework 4.0 by Wrox Publication • Intoducing Microsoft.NET,Wrox Publications,Professional Visual Basic.NET 2010 by Wrox Publication,Professional ASP.NET 4.0 : in C# and VB by Wrox publication • CLR via C# by Jeffrey Ritchter/Microsoft Press and Professional ASP.NET 2.0 by Wrox Publication
5	Java Technologies-I(Core Java) Java Technologies-II(Web Based Java)	• OO concepts • Knowledge of the role of various web components like web server, browser, HTML, JavaScript, JSP, • Sound Knowledge of all major Java Packages (.lang, .util, .io, .awt, Java Annotations, spring, Restful API using spring etc) • Knowledge of the use of Java at both client and server sides • Sound knowledge of ASP Objects • Must have developed at least 25 web applications • Must have developed at least 5 reusable Java Beans • Must be a Sun Certified Java Programmer	• Should have knowledge of HTML, JavaScript and Java	• Java 8 Programming Black Book by Dreamtech Press • Core Java : Advanced Features - Volume 2 Gary Cornell, Cay S. Horstmann/ Pearson • Java Server Programming (J2EE 1.7 Edition) Black Book by Dreamtech Software Team • Professional Hibernate by E.Pugh,J D.Gradock/Worx Wiley

6	Advanced Web Programming	• Sound Knowledge of OOP & OOAD concepts with the knowledge Client-Server Technology. • Sound knowledge of HTML, ASP, XML and scripting languages (JavaScript, Node.js, PHP etc. • Working experience of programming in Web environment. • Working experience in HTML, XML and scripting languages.	• OOAD & OOP & client server technology concepts. • Programming experience Web Environment. • Sound knowledge of Web server, HTML, ASP, XML and scripting languages. • Should have implementation experience of HTML, XML	• JavaScript: The Good Parts 1 Edition by Douglas Crockford / O'Reilly • HTML5, JavaScript and jQuery by Dane Cameron/Wiley • Inside XML,Holzner, Techmedia • Teach Yourself XML in 21 days, Notrh, Sams Techmedia • XML Black Book, Pitts, Coriolis • XML, A Beginners Guide, Mercer, TMH • XML Bible, Harold, IDG Books • Beginning XML, David Hunter, Wrox • Developing XML Solutions, Sturm, WP Publishers
7	JavaScript Framework	• Sound knowledge of Angular Java scripting.	• Hands on experience on implementation of Angular Java scripting. • Should have implementation experience of HTML, JavaScript	• Node.js, MongoDB and AngularJS Web Development
8	OOPs with C++	• C Programming • OOAD & OOP • Programming experience in C, C++ using Data Structures	• OOAD & OOP • Programming experience in C, C++ using Data Structures	• Thinking in C++ by Bruce Eckel • The C Programming Language by Kernighan and Retchie • The C++ Programming Language,Bjarne Stroustrup
9	Algorithm & Data structures Using C++	• C Programming • OOAD & OOP • Programming experience in C, C++ using Data Structures	• OOAD & OOP • Programming experience in C, C++ using Data Structures	• Data Structures, Algorithms & Applications in C++ by Sartaj Sahni • Fundamentals of Computer Algorithms 2nd Edition by Sanguthevar Rajasekaran, Sartaj Sahni, Ellis Horowitz / Orient Longman • Problem Solving: Best Strategies to Decision Making, Critical Thinking and Positive Thinking by Thomas Richards / Kindle Edition

			• Introduction to Algorithms by Al. Cormen / PHI Learning
			•
10	Parallel Computing	• Knowledge of Computer Architecture, Linux, C/C++, High Performance Cluster Computing, MPI andOpenMP, processors and Symmetric Multiprocessor	• Sound practical knowledge in gdb,gprof,ddd and intel TBB. • Should have expertise in clustering, parallel programming platforms	• An Introduction To Parallel Computing : Design And Analysis Of Algorithms 2ed 2ndediton Edition Author: Vipin Kumar, Ananth Grama, Anshul Gupta, George Karypis • Parallel Programming in C with MPI andOpenMP, Michael J, Quinn • Parallel Programming: For Multicore and Cluster S stssr, l /r, Gudula Ranger, Springer • High Performance Cluster Computing: Architectures & Systems (Volume-1) by Rajkumar • Buyya, Pearson