

SUMMARY OF INFORMATION ON EACH COURSE

1.	Name of Course	System Administration and Maintenance	
2.	Course Code	TSA 2151	
3.	Status of Course [Applies to (cohort)]	Specialisation Core for B.IT (Hons) Data Communications and Networking	
4.	MQF Level/Stage	Bachelor – MQF Level 6	
5.	Version (State the date of the Senate approval – history of previous and current approval date)	Date of current version: June 2014	
6.	Pre-Requisite	TOS1141 Operating System	
7.	Name(s) of academic/teaching staff	Subarmaniam Kannan	
8.	Semester and Year offered	Trimester 1, Year 2	
9.	<p>Objective of the course in the programme : This course introduces students to system administration and maintenance as well as platform technologies which Includes operating systems, applications, administrative activities and domains, computer architecture and organization, and computing infrastructures</p>		
10.	<p>Justification for including the course in the programme : Virtually all organizations have IT needs. It is the role of the IT professional to design, select, apply, deploy and manage computing systems to support the organization. This knowledge area consists of those skills and concepts that are essential to the administration of operating systems, networks, software, file systems, file servers, web systems, database systems, and system documentation, policies, and procedures. This also includes education and support of the users of these systems.</p>		
11.	Course Learning Outcomes :		Domain
	LO1 Generalise a problem, in order to identify and define the computing requirements appropriate to its solution.		Cognitive
	LO2 Analyse the Server administration and management techniques which includes user and group management , backup management, security management, disaster recovery, resource management, and automation management (automatic job scheduling)		Cognitive
	LO3 Evaluate the importance of system maintenance for an organization between server and client services based on various operating systems and various type of configuration settings		Affective
	LO4 Explain the importance of application maintenance for an organization by referring the responsibilities and resource allocation common to the various administrative domains.		Cognitive
			Level
			2
			4
			6
			5

SUMMARY OF INFORMATION ON EACH COURSE

12.	Mapping of Learning Outcomes to Programme Outcomes :									
	Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
	LO1	X	X							
	LO2	X	X					X	X	
	LO3	X	X	X				X	X	
	LO4	X	X	X				X	X	
13.	Assessment Methods and Types :									
	Method and Type	Description/Details							Percentage	
	Final Exam	Written examination							50%	
	Test	Written examination							25%	
	Laboratory/Practical	Server and Client services- Installation, Configuration Administration							25%	
14.	Mapping of assessment components to learning outcomes (LOs)									
	Assessment Components	%	LO1	LO2	LO3				LO4	
	Final Exam	50%	50	50	66.7				50	
	Test	25%	25	25	33.3				25	
	Laboratory/Practical	25%	25	25					25	
15.	Details of Course									
	Topics						Mode of Delivery			
							Lecture		Lab	
	1. Operating Systems Part 1 <ul style="list-style-type: none"> • Setting Up a LinuxMultifunction Server • Server Requirements • Installing Debian • Logging in Remotely • Configuring the Network • Changing the Default Debian Packages • Setting Up Quotas • Providing Domain Name Services 						2		2	

SUMMARY OF INFORMATION ON EACH COURSE

<p>2. Operating Systems Part 2</p> <ul style="list-style-type: none"> • Adding a Relational Database: MySQL • Configuring Mail Securely with Postfix, POP3, and IMAP • Putting Apache to Work • Adding FTP Services with ProFTPD • Summarizing Your Web Statistics with Webalizer • Synchronizing the System Clock 	2	2
<p>3. The Domain Name System</p> <ul style="list-style-type: none"> • DNS Basics • Getting into the BIND • Setting Up a DNS Server • Configuring an Authoritative DNS Server • Editing the Configuration Files • BIND Tools • Troubleshooting BIND 	4	4
<p>4. An Initial Internet-Ready Environment</p> <ul style="list-style-type: none"> • Installing ISPConfig • Setting Up a Server and Users with ISPConfig - httpd (virtual hosts, domain-based and IP-based); FTP; BIND; POP3 auto-responder; MySQL client databases; Webalizer statistics; Hard disk quotas; Mail quotas; Traffic limits; IP addresses; SSL; SSI; Shell access; Mailscanner (antivirus); Firewall • Safeguarding a Linux Web Server 	4	4
<p>5. Administering Apache</p> <ul style="list-style-type: none"> - Install and configure Apache, PHP, and MySQL - Manage multiple web sites with virtual hosts - Encrypt sensitive pages with SSL - Enable server-side includes and CGI scripts - Test for performance and security problems - Install vlogger and Webalizer to view site statistics - Install Drupal, a content management system 	4	4
<p>6. Virtualization in the Modern Enterprise</p> <ul style="list-style-type: none"> • Why Virtualization Is Popular • High-Performance Computing • Installing VMware 	4	4
<p>7. Scripting</p> <ul style="list-style-type: none"> • bash Beginnings • Useful Elements for bash Scripts • Scripting Language Shootout 	4	2

SUMMARY OF INFORMATION ON EACH COURSE

	8. Backing Up Data <ul style="list-style-type: none"> • Backing Up User Data to a Server with rsync • tar Archives • Saving Files on Optical Media • Backing Up and Archiving to Tape with Amanda • Backing Up MySQL Data 	4	2
	Total	28	24
	Total Student Learning Time (SLT)	Face to Face / Guided Learning	
	Lecture	28	28
	Tutorials	-	-
	Laboratory/Practical	24	12
	Presentation	-	-
	Assignment	-	-
	Mid Term Test	2	4
	Final Exam	2	20
	Sub Total	56	64
	Total SLT	120	
16.	Credit Value	3	
17.	Reading Materials :		
	Textbooks		
	1. Tom Adelstein, Bill Lubanovic, (2007). Linux System Administration, O'Reilly Media, Inc., Print ISBN-13: 978-0-596- 00952-6.		
	2. Evi Nemeth, Garth Snyder, Trent R. Hein, Ben Whaley, (2010). Unix ® and Linux® System Administration Handbook, Fourth Edition, Prentice Hall.		
	Reference Material (including 'Statutes' for Law)		
	1. Nate Campi, Kirk Bauer, (2008). Automating Linux and Unix System Administration, Second Edition, Apress.		
	2. Robin Nixon, (2010). Ubuntu: Up and Running, O'Reilly Media, Inc.,Print ISBN- 13: 978-0-596-80484.		
	3. Mark G. Sobell, (2010). A Practical Guide to Ubuntu Linux®, Third Edition, Prentice Hall.		

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Appendix (to be compiled when submitting the complete syllabus for the programme) :

1. Mission and Vision of the University and Faculty
2. Programme Objectives or Programme Educational Objectives
3. Programme Outcomes (POs)
4. Mapping of POs to the 8 MQF domain
5. Summary of the Bloom's Taxonomy's Domain Coverage in all the Los in the format below :

Subject	Learning Outcomes (please state the learning Outcomes)	Bloom's Taxonomy Domain		
		Affective	Cognitive	Psychomotor
ABC1234	Learning Outcome 1			
	Learning Outcome 2			
	Learning Outcome 3			
	Learning Outcome 4			
DEF5678	Learning Outcome 1			
	Learning Outcome 2			
	Learning Outcome 3			
	Learning Outcome 4			

6. Summary of LO to PO measurement
7. Measurement and Tabulation of result for LO achievement
8. Measurement Tabulation of result for PO achievement