

 Prifysgol Cymru Y Drindod Dewi Sant University of Wales Trinity Saint David	Wales Institute of Science and Art	
	Applied Computing	
	Network Programmability (ACCA5029)	
	MILESTONE	
Lecturer: Dr. Nitheesh Murugan Kaliyamurthy		
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To give students the ability to work with network programmability and automation tools, with a further focus on software devops.		
Week	Unit(s) Covered	Core Tasks
Week 1(30-09-25)	Introduction: Overview, Module & Lab Prerequisites, DevNet Developer Environment.	Lab 1: Set up Virtual Enviroment and review Python and Linux skills
Week 2(07-10-25)	Software Development and Design	Lab 2: Review Python installation, PIP and Python Virtual environments
Week 3(14-10-25)	Version Control Systems	Lab 3: Fundamentals of the distributed version control system
Week 4(21-10-25)	Understanding and Review and Testing Codes (Methods, Functions, Modules and Classes: Write, Review and Test)	Lab 4: Explore Python Classes and create Python Unit Test
Week 5(28-10-25)	Understanding Data Formats (XML, JSON, YAML)	Lab 5: Parse different data types with Python
04/11/2025	Reading Week	
Week 6(11-11-25)	Understanding and using APIs	Lab 6: Explore REST APIs and Integrate in a Python Application

Week 7(18-11-25)	Application Deployment and Security (<i>Submit Coursework 2 Essay @ 1500 HRS</i>)	Lab 7: Deploy Web application
Week 8(25-11-25)	Guest Lecture: Nagaraj, CCIE on Automating Infrastructure	Lab 8: Automate Installing a Web Server
Week 9(02-12-25)	Guest Lecture: Nagaraj, CCIE on Automating Infrastructure	Lab 8: Automate Installing a Web Server
Week 10(09-12-25)	Group Work - Discussion	
Week 11(06-01-26)	Group Work - Discussion	
Note: The dates provided for each topic are only for reference and may vary based on your understanding. It is important to regularly check for updates during the lectures/ tutorials and make necessary adjustments to your study plans.		
Assessment	Outcome	
Component 1 50%	Demonstrate a robust understanding of the key principles of network programmability tools and languages to solve specific problems.	Implementation (Group Work) + Report
Component 2 50%	Apply appropriate analysis, design, implementation and testing techniques for programming and automation of network devices.	Essay
Book	Jason Edelman, Scott S. Lowe, Matt Oswalt. Network Programmability and Automation: Skills for the Next-Generation Network Engineer. 2018, O'Reilly Media Kief Morris. Infrastructure as Code: Managing Servers in the Cloud. 2016, O'Reilly Media	
Online Course	WWW.NETACAD.COM : CCNA - DEVNET COURSE	