



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Wales Institute of Science and Art

Applied Computing

Network Programmability (ACCB5029)

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(01-10-24)	Introduction: Overview, Module & Lab Prerequisites, DevNet Developer Environment.	Lab 1: Set up Virtual Enviroment and review Python and Linux skills
Week 2(08-10-24)	Software Development and Design	Lab 2: Review Python installation, PIP and Python Virtual environments
Week 3(15-10-24)	No Scheduled Lecture/ Tutorial (Only for this Module)	
Week 4(22-10-24)	Version Control Systems	Lab 3: Fundamentals of the distributed version control system
Week 5(29-10-24)	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 6(05-11-24)	Understanding Data Formats (XML, JSON, YAML)	Lab 5: Parse different data types with Python

Week 7(12-11-24)	Understanding and using APIs	Lab 6: Explore REST APIs and Integrate in a Python Application
Week 8(18-11-24)	Application Deployment and Security	Lab 7: Deploy Web application
Week 9(26-11-24)	Automating Infrastructure	Lab 8: Automate Installing a Web Server
Week 10(03-12-24)	Project Activity Discussion	
Week 11(10-12-24)	Project Activity 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	