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American Public University System

The Ultimate Advantage is an Educated Mind

Department of Information Technology
ENTD261
Scripting Languages for the Administrator: JS, VBS,Node.js, Python and SQL
3 Credit Hours
Length of Course: 8 weeks

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Course Description	Grading Scale
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Instructor Information

Instructor:

Bio:

Email:

Please know we are here to support your success! Feel free to email or try to call me. Leave a voicemail and I will return your call as soon as possible

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Course Description (Catalog)

This course introduces the scripting languages necessary in custom programming for server administration and security purposes. Introductory level programming will be covered using scripting languages such as JavaScript, VBScript, Windows Shell Script, Python, and SQL. Previous programming experience is recommended. You must have access to a Windows-based system to successfully complete the assignments in this course.

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Course Scope

This course builds upon an introductory level programming foundation (in any procedural or object-oriented programming language) that a student is encouraged to already have obtained prior to enrolling in this course. In this course, students will be introduced to the JavaScript, VBScript, Windows Shell Script, Python Scripting, and Structured Query Language (SQL). Students will learn basic programming skills in each of these languages. The intention of this course is to introduce students to the use of these languages for server administration and security purposes. Programming examples and assignments will involve simple scripts run at the Windows command prompt or run in compilers that the student can download and install for free. There will be accompanying forum discussions on how these programming skills would be applied for server administration and security purposes.

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Course Objectives

After successfully completing this course, you will be able to:

- Apply basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods.
- Apply basic programming skills using VBScript scripting language.
- Apply basic programming skills using Python scripting language.
- Apply basic programming skills using Node.js JavaScript scripting language.
- Apply basic RDBMS skills using SQL
- Apply basic statistical analysis using MS Excel
- Explore, identify, apply, and test basic programming concepts including logical process, universal data types, command structures, conditional statements, loops, and methods.

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Course Delivery Method

This course will enable students to complete academic work in a flexible manner completely online. Course materials and access to an online learning management system will be made available to each student. **Online assignments are due by the last day of each week** and include Discussion Forum questions (accomplished in groups through a threaded discussion forum), examinations and quizzes (graded electronically), and individual assignments (submitted for review by the Faculty Member). Assigned faculty will support the students throughout this eight-week course.

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Course Resources

Required Course Textbooks

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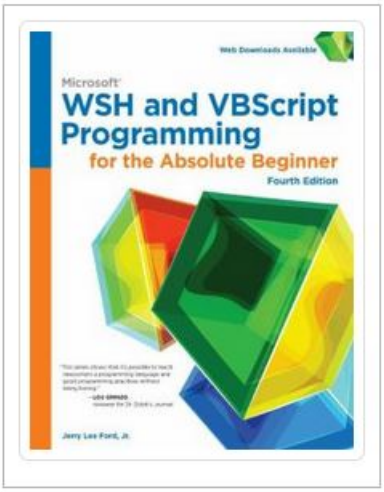


Ford, Jerry Lee. (2015). Microsoft WSH and VBScript Programming for the Absolute Beginner, 4th Edition. ISBN:9781305260320 (Chapters 1-7)

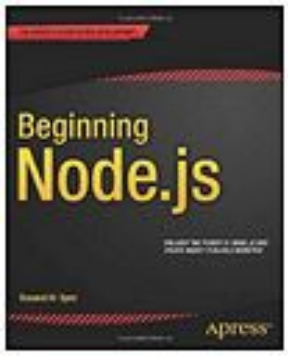
The e-book is provided via the APUS Bookstore. Please visit https://apus.libguides.com/er.php?course_id=7934 **for more information.**

Ford, Jerry Lee. (2015). Microsoft WSH and VBScript Programming for the Absolute Beginner, 4th Edition. ISBN:9781305260320 (Chapters 1-7)

Books 24x7 http://ezproxy.apus.edu/login?url=http://library.books24x7.com/library.asp?^B&bookid=66346

OR

EBSCO http://ezproxy.apus.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=760603&site=ehost-live&scope=site



Syed, Basarat Ali. (2014) Beginning Node.js. ISBN: 9781484201879 (Chapters 1-2)
http://library.books24x7.com.ezproxy2.apus.edu/toc.asp?bookid=77629

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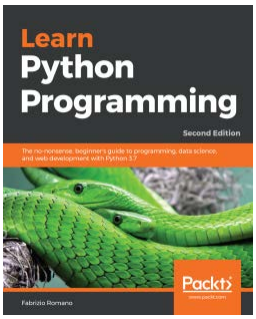

Romano, Fabrizio. (2015) Learning Python. ISBN: 978-1-78355-171-2 (Chapters 1-2)
https://www.packtpub.com/free-ebooks/learn-python-programming-second-edition

Required Readings

Embedded in each week's Lessons will be links to sites that you are required to read that week.

These books are for reference only; you are encouraged to search the subjects on the internet.

Additional Resources

N/A

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Evaluation Procedures

This course requires disciplined independent practice and individual completion of assignments. Although Distance Learning provides you with a flexible schedule to meet your professional, personal, and academic responsibilities, you are expected to follow the syllabus and submit assignments on time and on schedule. Assignments, quizzes, and initial forum posts may be submitted up to one week late, but will lose 5 points per day late. Follow-up posts will not receive any credit if posted after the due date. After one week past the due date, assignments, quizzes, and forum posts may not be submitted for credit. All work must be submitted by the end of the class session. No assignments will be accepted after the class end date.

Reading Assignments
Each week, you will be assigned chapters from the class textbook to read. You will be evaluated on your understanding of the material in your readings through your forum contributions, assignments, quizzes, and final project. In order to grasp the weekly course objectives and participate fully in the discussions, it is highly recommended that you read each week's assigned reading chapters before participating in the week's forum discussion, taking your quizzes, and completing your weekly assignments.

Supplemental Readings
Students are encouraged to research weekly topics on the Internet and use their research findings in their forum posts and weekly assignments to support their points.

Forum Participation
Each week you will be expected to participate in a class discussion on the forum. Each week's discussion questions can be found on the forum itself. Each one of you will have different and unique experiences and points of view related to the topics that we are learning each week, and we can all learn from each other by sharing our thoughts and ideas together on the forum. Your participation in the forums unleashes the power of synergy in our classroom.

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To facilitate this interaction, please be prompt when posting your forum work for each week, allowing time for the others to actively engage in the dialogue.

Forum Timing: Although the due date for both your initial post, with your answers to the week's questions, and your two follow-up posts is 11:55 PM ET on Sunday, you are encouraged to post your initial post no later than Thursday, to allow time for your classmates to read and reply to your post. Be sure to read all of the follow-up posts to your own posts and reply to any questions or requests for clarification. You are encouraged to conduct research and use other sources to support your answers.

Forum Guidelines:

- Try to post your initial response to each forum by 11:55 PM ET on Thursday each week.
- Initial responses should be no less than 250 words.
- Do not include my questions or discussion prompts in your post. You may number your answers, but your post should contain only your own original writing.
- Write in complete sentences and full paragraphs and avoid using lists of any kind in your posts.
- Your initial post must be original in content and demonstrate a thorough analysis of the topic.
- Include your own personal experience related to the topic being discussed. If you do not have previous experience with scripting languages and server programming, describe the experiences you are currently having with learning scripting languages while working on your assignments, or the experiences you have had as a computer user who has benefited from custom scripts developed by the server administrators of the network you use on your job, if applicable.
- Write in your own words and avoid copying and pasting from other websites.
- If you do quote from a source, keep quotations to a minimum – I would rather see you express your own understanding of what you learned from your sources, in your own words.
- Include a citation at the bottom of your post, indicating the source(s) you consulted in your personal research into the topic being discussed each week.
- Reply to at least 2 of your classmates in each forum by 11:55 PM ET on Sunday each week.
- Replies to classmates should be no less than 150 words each.
- For practical reasons, when you respond to other learners' posts, please start your response by referencing their name.
- Responses to classmates must be significant in content, to advance the discussion forward. Your responses should add additional insight to the discussion or challenge your classmates' opinions.
- You are encouraged to log into the classroom several times each week to participate in the class discussion on the forum.
- Refer to the forum and the Rubric for Grading Forum Posts below for more details on grading. Forum postings are a significant part of your grade and I will be looking for quality and depth in your participation in the weekly forum discussions.

Assignments
You will have assignments due weekly. Detailed instructions for each weekly assignment can be found in the Assignments area of the classroom.

Final Project
You will have a Final Project due at the end of Week 8. Detailed instructions for the final project can be found in the Assignments area of the classroom.

Standards for Original Work:

All work submitted must be original work. Incidents of academic dishonesty will result in you failing the assignment, and repeat incidents will result in failing the course. I check forum posts and assignments regularly for incidents of plagiarism and academic dishonesty. Please read and understand the University policy on academic

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dishonesty (Plagiarism Policy). When writing about ideas learned from your sources, you must summarize the ideas **in your own words** (rather than using direct quotations from your sources). Be sure to provide appropriate citations and references on your forum posts and assignments to give credit to your sources for the ideas you are paraphrasing and writing about, even though you will not be directly quoting from your sources.

Evaluation Criteria

Grade Instruments	Weight in % (Percent of Final Grade)
Weekly Discussion Forums (1-8)	32
Weekly Assignments (1-8)	68
Total	**100**

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8 – Week Course Outline

Please see the Student Handbook to reference the University's grading scale.

MWSS = Microsoft Windows Shell Scripting Programming for the Absolute Beginner
JS = Node Web Development
LP = Learning Python
(Please note, JScript and JavaScript are the same language. Trademark issues are the cause of the similar names.)

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Week	Topic	Learning Objectives	Readings	Assignment
1	**Introduction to Scripting**	• Apply basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Explore, identify, apply, and test basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Understanding Scripting and the role of scripting in Network /System administration	Lesson 1 MWSS: Chapters 1-4 Tech Republic Article: Understanding the Role of Scripting in Network Administration	• Introduction/Week 1 Forum • Week 1 Assignment
2	**WSH and VBScript Programming Basics and Constants,**	• Apply basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods.	Lesson 2	• Week 2 Forum • Week 2 Assignment

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	Variables & Data Structures	• Apply basic programming skills using Windows Shell scripting language.		
3	**WSH and VBScript Programming Basics and Constants, Variables & Data Structures**	• Apply basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Explore, identify, apply, and test basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Apply basic programming skills using Windows Shell scripting language. • Apply basic programming skills using JScript scripting language.	Lesson 3 MWSS: Chapters 5-7 http://wsh2.uw.hu/index.html https://www.w3schools.com/asp/asp_ref_vbscript_functions.asp	• Week 3 Forum • Week 3 Assignment
4	**Introducing Node.js**	• Apply basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Explore, identify, apply, and test basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Apply basic programming skills using JavaScript scripting language.	Lesson 4	• Week 4 Forum • Week 4 Assignment
5	**Introducing Python**	• Apply basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Explore, identify, apply, and test basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Apply basic programming skills using Python scripting language.	Lesson 5 LP: Chapters 1 & 2 https://www.tutorialspoint.com/python/ http://www.pythontutor.com/visualize.html#mode=edit	• Week 5 Forum • Week 5 Assignment

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6	**Introduction to SQL and Databases**	• Understanding data storage in relational database (RDBMS) • Using SQL to manipulate data in RDBMS	Lesson 6 https://www.w3schools.com/sql/sql_intro.asp	• Week 6 Forum • Week 6 Assignment
7	**Basic Data Analysis with MS Excel**	• Apply basic MS Excel concepts including creating rows, columns, formulas and titles. • Understanding MS Excel functionalities. • Using statistical functions to analyze the data • Creating graphs to visualize the data	Lesson 7 http://www.excel-easy.com/ http://www.excel-easy.com/data-analysis.html	• Week 7 Forum • Week 7 Assignment
8	**Selected Topics**	• Apply basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Explore, identify, apply, and test basic programming concepts including logical process, algorithms, universal data types, command structures, conditional statements, loops, and methods. • Compare and contrast scripting languages for coding custom procedures for server administration and security reporting. • Apply basic programming to any programming language. Determining the most suitable language for coding custom procedures for server administration and security reporting.	Lesson 8 http://powershelltutorial.net/	• Week 8 Forum • Week 8 Assignment

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Policies

Please see the Student Handbook to reference all University policies. Quick links to frequently asked question about policies are listed below.

Drop/Withdrawal Policy
Plagiarism Policy
Extension Process and Policy
Disability Accommodations

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Writing Expectations
Describe your writing expectations.

Citation and Reference Style
Attention Please: Students will follow the APA as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA.

Late Assignments
Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. As adults, students, and working professionals, I understand you must manage competing demands on your time. Should you need additional time to complete an assignment, please contact me before the due date so we can discuss the situation and determine an acceptable resolution. Routine submission of late assignments is unacceptable and may result in points deducted from your final course grade.

Netiquette
Online universities promote the advancement of knowledge through positive and constructive debate – both inside and outside the classroom. Forums on the Internet, however, can occasionally degenerate into needless insults and "flaming." Such activity and the loss of good manners are not acceptable in a university setting – basic academic rules of good behavior and proper "Netiquette" must persist. Remember that you are in a place for the rewards and excitement of learning which does not include descent to personal attacks or student attempts to stifle the Forum of others.

- **Technology Limitations:** While you should feel free to explore the full-range of creative composition in your formal papers, keep e-mail layouts simple. The Sakai classroom may not fully support MIME or HTML encoded messages, which means that bold face, italics, underlining, and a variety of color-coding or other visual effects will not translate in your e-mail messages.
- **Humor Note:** Despite the best of intentions, jokes and especially satire can easily get lost or taken seriously. If you feel the need for humor, you may wish to add "emoticons" to help alert your readers: ;-), :), ☺

Disclaimer Statement
Course content may vary from the outline to meet the needs of this particular group.

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Online Library

The Online Library is available to enrolled students and faculty from inside the electronic campus. This is your starting point for access to online books, subscription periodicals, and Web resources that are designed to support your classes and generally not available through search engines on the open Web. In addition, the Online Library provides access to special learning resources, which the University has contracted to assist with your studies. Questions can be directed to **librarian@apus.edu**.

- ***Charles Town Library and Inter Library Loan:*** The University maintains a special library with a limited number of supporting volumes, collection of our professors' publication, and services to search and borrow research books and articles from other libraries.
- ***Electronic Books:*** You can use the online library to uncover and download over 50,000 titles, which have been scanned and made available in electronic format.
- ***Electronic Journals:*** The University provides access to over 12,000 journals, which are available in electronic form and only through limited subscription services.

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- ***Tutor*.com**: AMU and APU Civilian & Coast Guard students are eligible for 10 free hours of tutoring provided by APUS. Tutor.com connects you with a professional tutor online 24/7 to provide help with assignments, studying, test prep, resume writing, and more. Tutor.com is tutoring the way it was meant to be. You get expert tutoring whenever you need help, and you work one-to-one with your tutor in your online classroom on your specific problem until it is done.

Request a Library Guide for your course (http://apus.libguides.com/index.php)
The AMU/APU Library Guides provide access to collections of trusted sites on the Open Web and licensed resources on the Deep Web. The following are specially tailored for academic research at APUS:

- Program Portals contain topical and methodological resources to help launch general research in the degree program. To locate, search by department name, or navigate by school.
- Course Lib-Guides narrow the focus to relevant resources for the corresponding course. To locate, search by class code (e.g., SOCI111), or class name.

If a guide you need is not available yet, please email the APUS Library: librarian@apus.edu.

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Turnitin.com

Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. Turnitin can now be enabled in Assignments settings. Submissions for assignments will be auto-forwarded to Turnitin to be evaluated for academic integrity.

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Selected Bibliography

Additional references are found in the Lessons area of the classroom, embedded in the weekly lessons.

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