

## Python Programming

This course introduces computer programming using the Python programming language. Emphasis is placed on common algorithms and programming principles utilizing the standard library distributed with Python. Upon completion, students should be able to design, code, test, and debug Python language programs.

### Course Content

#### A. Python Basics

##### Introduction to Script

- What is Script, program?
- Types of Scripts
- Difference between Script and Programming Languages
- Features and Limitation of Scripting
- Types of programming Language Paradigms

##### Introduction to Python

- What is Python?
- Why Python?
- Who Uses Python?
- Characteristics of Python
- History of Python
- Python Versions
- How to Download and Install Python
- The Pycharm IDE
- Features and Limitations of Python
- Python Distributions
- Creating Your First Python Program

##### Variables in Python

- Variables and Constants in Python
- Variable, Variable names and Value
- Mnemonic Variable Names Values and Types
- What Does "Type" Mean?
- Multiple Assignment
- Python different numerical types
- Standard Data Types
- Operators and Operands
- Order of Operations
- Swap variables
- Python Mathematics Type Conversion

##### String Handling

- What is string?
- String operations and indices
- Basic String Operations

- String Functions, Methods
- String Multiplication and concatenation
- String Formatting Operator
- Structuring with indentation in Python
- Built-in String Methods
- Data Structures in Python

#### Python Operators and Operands

- Arithmetic, Relational Operators and Comparison Operators
- Python Assignment Operators
- Shorthand Assignment Operators
- Logical Operators or Bitwise Operators Membership Operators
- Identity Operators Operator precedence
- Evaluating Expressions

#### Python Conditional Statements

- if statement (One-Way Decisions)
- if .. else statement (Two-way Decisions)
- if .. elif .. else statement (Multi-way)
- How to execute conditional statement with minimal code
- Nested IF Statement

#### Python LOOPS

- “While Loop” and “For Loop”
- For Loop for set of other things besides numbers
- Break statements, Continue statement, Enumerate function for For Loop

#### Python Lists

- List indices
- Traversing a list
- List operations, slices and methods
- Map, filter and reduce
- Deleting elements
- Lists and strings

#### Python Tuple

- Advantages of Tuple over List
- Packing and Unpacking
- Comparing tuples
- Creating nested tuple
- Using tuples as keys in dictionaries
- Deleting and Slicing Tuple
- Tuple Membership

#### Python Sets

- How to create a set?
- Iteration Over Sets

- Python Set Methods
- Python Set Operations
- Union of sets
- Built-in Functions with Set

#### Python Dictionary

- How to create a dictionary?
- Python Dictionary Methods
- Copying and Updating Dictionary
- Delete Keys from the dictionary
- Dictionary items() Method
- Sorting the Dictionary
- Python Dictionary in-built Functions

#### Python Functions

- What is a function?
- How to define and call a function in Python Types of Functions
- Significance of Indentation (Space) in Python How Function Return Value?
- Types of Arguments in Functions
- Default Arguments and Non-Default Arguments
- Keyword Argument and Non-keyword Arguments Arbitrary Arguments
- Rules to define a function in Python
- Various Forms of Function Arguments
- Scope and Lifetime of variables
- Nested Functions
- Call By Value
- Call by Reference
- Anonymous Functions/Lambda functions
- Passing functions to function
- map(), filter(), reduce() functions

#### B. Intermediate Python

- Packages in Python
- Python Date and Time
- File Handling
- Data Analytics

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### I. PERSONAL INFORMATION

**Sex** : Female **Status** : Married  
**Birthday** : August 17, 1971 **Birthplace** : Dapitan City

### II. EDUCATIONAL BACKGROUND

#### a. Post-Graduate

Course : Doctor in Information Technology  
Year Graduated : March 2016  
Thesis/Project : Acoustic-Prosodic Recognition of Emotion in Speech  
Institution : Cebu Institute of Technology – University  
Address : N. Bacalso Avenue, Cebu City

#### b. Graduate

Course : Master in Computer Science  
Year Graduated : March 2009  
Thesis/Project : Probabilistic Speech Recognition for Tagalog Lecture Video  
Institution : CIT-University  
Address : N. Bacalso Avenue, Cebu City

#### c. Undergraduate

Course : Bachelor of Science in Computer Engineering  
Year Graduated : October 1992  
Institution : Cebu Institute of Technology  
Address : N. Bacalso Avenue, Cebu City

### III. PROFESSIONAL RECORD

- Director, School of Agro-Industrial and Technical Education, Silliman University. June 2016 – present
- MT Certified Network Administrator, MT Certified User Management Engineer, MT Certified Routing Engineer
- Member, University Research Ethics Committee, Silliman University. Nov 2018 - present
- Team Leader Negros Oriental Sector, The Region 7 and Negros Island Region K to 12 Implementation Experience: A Proposed Learning Management System, CHED DARE TO grant-in-aid. March 2017 – March 2021
- VP Mindanao, Philippine Society of IT Educators. April 2021 – March 2022
- President, Philippine Society of IT Educators Region 9. June 2020 – March 2021
- Vice-President, Philippine Society of IT Educators – Region 7. April 2018 – May 2020

- Visiting Associate Professor, Ferris University, Yokohama, Japan. April – July 2017
- Faculty, College of Computer Studies, Silliman University. June 2016-present
- Department Chairperson, Department of Computer Science, College of Computer Studies, Silliman University. June 2010 – May 2016.
- Faculty, College of Computer Studies, Silliman University. June 2002 – May 2009.
- Faculty, Department of Computer Engineering, University of San Carlos Cebu. June 2001 – May 2002.
- Faculty, College of Computer Studies, Silliman University. June 1995 – May 2000
- Secretary, Philippine Society of IT Educators – NIR, June 2016-present
- Board Member, Philippine Society of IT Educators (PSITE)- Region 7, June 2010 – May 2016.
- Visiting Researcher, National Institute of Informatics (NII), Tokyo Japan. February 7-13, 2016.
- Study Leader, Development of Mobile Class Record Application, CHED-PHERNet Project for SU. May 2015-February 2016.
- Lecturer, GTZ Decentralization Program. April 27-29, 2009
- Lecturer, Java Education Development Initiative (JEDI). June 2007 – May 2008.
- Computer Programmer, Gaisano Main Incorporated. October 1992 – July 1993

#### **IV. PROFESSIONAL MEMBERSHIP**

##### **a. International**

- International Association of Computer Science and Information Technology (IACSIT)  
Membership Number: 80337860
- International Association of Engineers (IAEng)  
Membership Number: 124132
- International Innovative Scientific and Research Organization (IISRO)  
Membership ID: 2013-1213

##### **b. Local**

- Philippine Society of IT Educators (PSITE)

#### **V. National Certificates**

Computer Systems Servicing NC II  
 Career Entry Course for Software Developers - Java NC IV  
 Contact Center Services NC II

#### **VI. PRESENTATION IN IT CONFERENCES**

Conference Name	Date	Venue	Title of Presentation

5 <sup>th</sup> International Conference on ICT for Sustainable Environment	July 23-24, 2020	Goa, India  (Virtual Presentation)	Development of a Flood Hazard Prediction Model using Artificial Neural Network
Negros Oriental Association of TVET Institutions	June 15, 2020	TESDA, Negros Oriental	Tools for Flexible Learning
2 <sup>nd</sup> Information and Computing Education Conference	Oct 3-5, 2019	Ateneo de Davao University	Flood Hazard Mapping using Artificial Neural Network
Internet Governance Symposium	February 22, 2019	AVT 1, Silliman University	The future of work: How AI will transform the millennial experience
11 <sup>th</sup> Negros Oriental ICT Student Congress	February 18, 2019	CCS, Silliman University	The rise of Big Data and Industry 4.0
Regional Symposium, on Disruptive Technologies: Opportunities, Challenges, and Risks	January 23, 2019	Michael Richards Center, USC-TC, Cebu City	Development of a Flood Hazard Simulation Model for Flood Risk Assessment
14 <sup>th</sup> National eLearning Conference	Sept 11-13, 2018	Almont Inland Resort, Butuan City	Effect of Introductory Programming with Project Based Learning – Based on Trial results of Course at Liberal Arts College in Japan
International Conference on Computing and Data Engineering	May 4-6, 2018	Crowne Plaza Shanghai, Shanghai, China	Using Latent Dirichlet Allocation for Topic Modeling and Document Clustering of Dumaguete City Twitter Dataset
International Congress on E-Learning	Oct 5-7, 2017	Fortuna Hotel, Hanoi, Vietnam	Importance of Course Content and Classroom Design in Project-Based Learning in Programming Courses - Case Study of a

			Liberal Arts College, Ferris University in Japan
Confluence 2017	Jan 12-13, 2017	Amity University, New Delhi, India	Niche Modeling of Endangered Philippine Birds using GARP and MAXENT
PELS – NELC 2016	Sep 15-16, 2016	SLU, Baguio City	Robotics Learning in Japan: Experiences and Lessons for Establishing Outcomes-based STEM Learning
International Conference on Research in Engineering & Technology	May 20-21, 2016	Summit Circle, Cebu City	Virtual Object Manipulation through Hand Movement and Voice Command
8 <sup>th</sup> IEEE International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM2015)	Dec 9-12, 2015	Waterfront Hotel, Cebu City	Acoustic-Prosodic Recognition of Emotion in Speech
3 <sup>rd</sup> International Conference in Technology (InCITE 2015)	Feb 12-13, 2015	FEU Institute of Technology, Manila	Traffic Sign Detection and Classification using Support Vector Machine
International Conference on Advances in Image Processing (ICAIP 2014)	Oct 10-12, 2014	Bangkok, Thailand	Age Estimation using Support Vector Machine Sequential Minimal Optimization
International Research Conference on Innovations in Engineering, Science and Technology	Nov 27-29, 2013	Batangas State University, Main Campus, Batangas City	Gaussian RBF Networks with application to phone recognition
International Research Conference in Higher Education	Oct 2-3, 2013	Manila Hotel, Manila	FilHerbs MobilePedia: An herbal plant app for Android

Workshop on Computation: Theory and Practice	Sept 27-28, 2013	USJR-Basak, Cebu	Deep Learning Multi Radial Basis Function
IEEE TENCON 2012	Nov 19-22, 2012	Radisson Blu Hotel, Cebu	Question Generator for Tagalog Informational Text
ICODEL	Feb 22-23, 2012	Century Park Hotel, Manila	Cebuano Mobile: Your Handy Translator
NCITE 2011	Oct 27-29, 2011	Palawan State University	Tagalog Question Generator
Model 2011	Oct 20-22, 2011	Silliman University	Development of Mobile Apps for medicinal plants awareness
PSITE-7 Regional Conference	Apr 14-16, 2011	Holy Name University, Bohol	1. Pitch Recognition for Trumpet 2. Tagalog Question Generator 3. Virtual Object Manipulation
ACE 2010	Dec 2-5, 2010	Ramada Osaka Hotel, Osaka, Japan	Speech Recognition for Tagalog Lecture Video
ICMTA 2010	Sept 10-12, 2010	Peninsula.Excels or Hotel Singapore	Probabilistic Speaker Recognition to a non-continuous text-independent speech
PSITE 7 Regional Conference	April 2010	Salagdoong, Siquijor	Speaker Identification
TouchPoint International Conference	March 4-5, 2010	Pan Pacific Hotel, Manila	Speech Recognition for Tagalog Lecture Video
NCITE 2009	October 2009	Capitol College, Cagayan de Oro	Speech Recognition for Tagalog Lecture Video



PSITE 7 Regional Conference	April 2009	Foundation University, Dumaguete City	Speech Recognition
VisMin Conference	January 2008	USJR – Cebu City	Speech Recognition

## VII. PUBLICATIONS

Journal	Title of the Published Work
Springer Singapore <a href="https://doi.org/10.1007/978-981-15-8354-4_3">https://doi.org/10.1007/978-981-15-8354-4_3</a>	Development of a Flood Hazard Prediction Model Using Artificial Neural Network
ACM Digital Library ISBN: 978-1-4503-6393-8 DOI: 10.1145/3219788.3219799	Using Latent Dirichlet Allocation for Topic Modeling and Document Clustering of Dumaguete City Twitter Dataset
International Journal of Scientific Engineering and Science. Volume 2, Issue 4, pp. 83-90, 2018. ISSN (Online): 2456-7361	Development of an Android-Based Class Record for Teachers
IEEE Xplore Electronic ISBN: 978-1-5090-3519-9 DOI: 10.1109/CONFLUENCE.2017.7943211	Niche Modelling of endangered Philippine birds using GARP and MAXENT
IEEE Xplore Electronic ISBN: 978-1-5090-0922-0 DOI: 10.1109/IALP.2016.7876006	Using Topic Modelling to make sense of typhoon-related tweets
International Journal of Research in Engineering and Technology (IJRET) page 57, Vol. 4, No. 2, 2016 ISSN 2277-4378	Virtual Object Manipulation through Hand Movement and Voice Command
IEEE Xplore Electronic ISBN : 978-1-5090-0360-0 DOI: 10.1109/HNICEM.2015.7393229	Acoustic-prosodic recognition of emotion in speech
Journal of Image and Graphics ISSN: 2301-3699 Vol. 2 No. 2 December 2014	Age Estimation using Support Vector Machine – Sequential Minimal Optimization
Informatika (Jurnal Teknologi Komputer Dan Informatika)	A Study on Pitch Recognition for Trumpet

IEEE Xplore Electronic ISBN: 978-1-4673-4824-9 DOI: 10.1109/TENCON.2012.6412273	Automated Question Generator for Tagalog Informational Texts using Case Markers
IPEDR vol. 12 (2011) IACSIT Press, Singapore	Speaker Identification to a non-Continuous Text Independent Text
Philippine Information Technology Journal Vol 3, No 1 (2010) ISSN: 2012-0761	Probabilistic Speech Recognition for Tagalog Lecture Video

## VIII. IT RELATED TRAININGS/WORKSHOPS

### a. Training/Workshop Conducted

Activity name	Organization/Institution	Date	Venue
Basic Android Programming	NORSU Bayawan Campus	Sept 6-7, 2015	Bayawan City
Seminar and Workshop in Android Programming	Bohol Island State University	March 6-7, 2015	Tagbilaran City
Basic Android Programming	Philippine Society of IT Educators	Aug 19-21, 2013	CC 11, UFCC
Basic Android Application Development Training	Phil. National IT Standard Foundation (PhilNITS)	June 1-4, 2012	PhilNITS Cebu
Mobile Application Programming	Lyceum of the Philippines - Batangas	August 28-29, 2009	Lyceum – Batangas
Linux Ingres Training	GTZ –Dumaguete	April 27-29, 2009	SUCC
JEDI Training	JEDI – Sun Microsystems	Summer 2008	HNU – Bohol
JEDI Training	JEDI – Sun Microsystems	June 4-8, 2007	SU-CCS
Basic Internet Troubleshooting	Silliman University	January 25 & March 27, 2003	SU-CCS

### b. Training/Workshop Attended

Activity name	Organization/Institution	Date	Venue	Source of Fund
Capability Building Workshop for TraBAJO Implementers	DILG – Dumaguete	March 21-22, 2018	Bethel Guest House, Dumaguete	SU
Introduction to Artificial Intelligence Seminar	USJR	Feb 7-8, 2018	USJR	SU

Cloud Infrastructure Services	EMC2	Apr 22-26, 2013	USJR Basak Campus	EMC & SU
Android Training Program	SMART	May 23 – 27, 2011	Cebu Institute of Technology – University	Self-funded
RAD V7 Web Application Development	IBM – Philippines	October 15-18, 2010	Informatics Cebu	IBM & SU
IBM WebSphere Application Server V7 Administration	IBM – Philippines	October 19-23, 2010	Informatics Cebu	IBM & SU
SMACS 2008	Computing Society of the Philippines	August 2008	UP – Cebu	SU

### c. Training/Workshop organized

Activity name	Date	Venue
11NNLPRS Post-Conference Activity on NLP Research Talks	April 28-30, 2015	SUCCS
Outcomes-based Education Seminar/Workshop	May 22-23, 2014	SU-CCS
6 <sup>th</sup> Negros Oriental ICT Student Congress	Feb 14, 2014	Silliman University
15 <sup>th</sup> PSITE National Convention	Feb 21-23, 2013	Crown Regency Residences, Cebu City
4 <sup>th</sup> Negros Oriental ICT Student Congress	Feb 9, 2012	Silliman University
Philippine Workshop on Modeling, Simulation and Scientific Computing	Oct 22, 2011	Silliman University
Mobile Communication and Mobile Computing	Feb 23-24, 2011	SU-CCS
12 <sup>th</sup> PSITE National Convention	Feb 24-27, 2010	Bohol Plaza Resort, Bohol
Digital Image Processing Workshop II	August 24-25, 2009	Silliman University
Digital Image Processing Workshop	May 21-22, 2009	Silliman University
9 <sup>th</sup> Philippine Computing Science Congress	March 3, 2009	Silliman University
Negros Oriental IT Expo	Dec 2, 2008	Negros Oriental Convention Center
Silliman Online University Launching	August 25, 2008	SU-CCS

CCS Open House	August 21-22, 2008	SU-CCS
National Conference on Information Technology Education	Oct 22-23, 2007	Silliman University
How to make your own cartoon: A flash animation seminar-workshop	July 26-27, 2007	Silliman University
National Forum on the Curriculum and Workshops	Sep 14, 2007	Silliman University
2003 PAASCU visit	Oct 1, 2003	Silliman University

#### IX. AWARDS

Award Name	Organization	Awarding Venues	Date
Most Productive Faculty for the last 5 years	Silliman University	SU Hall, Silliman University	February 15, 2016
JEDI Champion	Sun Microsystems, Inc., Philippines	One Esplanade, Pasay City	February 21, 2008
Teacher of the Year	College of Computer Studies	SU Hall	February 2007
Teacher of the Year	College of Computer Studies	SU Hall	February 2005