College of Southern Nevada
Introduction to Programming - IS-115 Section – 1001 (Call#27573)

Instructor Information

Name: Alok Pandey
Biography: Alok started teaching programming at the College of Southern Nevada (CSN) in 1997 after joining CSN as a programming instructor. He was programmer/analyst at the Computer Sciences Corporation and then Programmer/Statistician at the Harry Reid Center for Environment studies within the UNLV.
Alok has a MS in Mathematics (Operation Research emphasize) from New Mexico Tech, Socorro, New Mexico. His first MS in Statistics and BS in Math, Physics, and Statistics are from Allahabad University India. He has been teaching full-time at CSN since the Fall of 1997.

Email: For regular email communication, please use canvas built in system.

External email: alok.pandey@csn.edu [please make sure to add “IS-115” in the subject line, followed by your subject, so I know you are my student from the IS-115 class.]

Phone & voice mail 702.651.4793 (Phone), 702.651.2641 (Fax)
When leaving a message, please make sure to leave your phone number slowly and clearly with your message. [Note: I will not be able to return your call if your number requires long distance dialing].

Office Room 2708, Telecom Building, Cheyenne Campus. I welcome each one of you to stop by at least once just to meet with your instructor.

Office Hours:

<table>
<thead>
<tr>
<th>Cheyenne Campus</th>
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<tr>
<td>Tue/Thur:</td>
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<td>7:15 – 7:45, 12:30 – 1:30</td>
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<tr>
<td>Wednesday, Friday:</td>
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<tr>
<td>9:30 – 12:30</td>
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<td>or By appointments</td>
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Appointments: Please email me to make appointments – I will be happy to meet you almost any other time too.

Course Information: IS-115 - Introduction to Programming

Description: This is a first course in programming. It deals with the ideas of typical processes, internal computation, input/output, decision and control, and typical application. This course emphasizes problem solving methods and algorithm development.

Outcomes: Upon completion of the course this students will be able to:

1. Describe computer hardware and an operating system,
2. Develop algorithms in terms of pseudo codes and flow charts,
3. Design and code a program that processes user input and produces output. This program will perform simple input operations, formulation of mathematical formulas
into the programming language and perform simple output operations,
4. Design and code a program that uses basic arithmetic operations (add, subtract, multiply, divide). This program will include the use of primitive variable types,
5. Design and code a program using IF statements in comparisons and using the WHILE and FOR statements in repetition. This program will demonstrate good structured programming practices.

**Location:**
This is an online course so most of the work will be done online. The online course shell will be used to post assignments, quizzes and grades. Also, I recommend that you send me your questions about assignments and grades via canvas so I can check your work and respond quickly. You can also send questions from the assignment or quizzes too.

**Textbooks:**
**Required:** Prelude to Programming – concepts and design*, 6th edition.
* - you do not need any package – all you need is just the book.

No need to purchase: There are several good online books available on Python. We will be using one of the e-books. Here is the link: [http://www.swaroopch.com/notes/python/#intro](http://www.swaroopch.com/notes/python/#intro)

Also, I will provide Python material in the class.
Python online tutorial: [http://docs.python.org/2/tutorial/](http://docs.python.org/2/tutorial/)

**Software:**
We will be using two software that you may have never used before:

1. Raptor: It is free flowcharting software to learn programming concepts without learning syntax of a programming language. You can download and install it on your computer. **Appendix-D of the text can help you all about RAPTOR including where to download it from and how to install it.**
   You can download it from: [http://raptor.martincarlisle.com/](http://raptor.martincarlisle.com/)

2. We will also be using **Python** – a high-level programming language available for free
   You can download it from: [http://www.python.org/getit/](http://www.python.org/getit/)

**Course Contents:**
**Input, process, output:** To understand the activity of programming, first step is to learn about three fundamental steps – input, process, output. In the first step we should also become familiar with the computing environment, and recognize syntax and logic errors.

**Variables (or data types):** To store information in a computer and then to be able to manipulate them, we need variables, as name suggests, where values can vary. Different programming languages come with different types and number of variables.

**Decision Making:** To be able to implement decisions using if statements, understand how to group statements into blocks, learn how to compare integers, floating-point numbers, strings, and objects, recognize the correct ordering of decisions in multiple branches, and program conditions using Boolean operators and variables.

**Iteration and Looping:** To be able to program loops with the while, for, and do statements, avoid infinite loops and off-by-one errors, understand nested loops.

**Introduction to Objects and Classes:** To understand the concepts of classes and objects, realize the difference between objects and object references, become familiar with the process of implementing classes, be able to implement simple methods, understand the purpose and use of
Constructors, understand how to access instance fields and local variables, and appreciate the importance of documentation comments.

**Method of Instruction**

Students will be expected to read the text, do the suggested programming projects, and do projects/exercises assigned. Each topic should require you to think about solving problems, developing steps to solve the problem in some logical order. You textbook provides you with activities that will require you to sit in front of computers and do projects. While doing those projects, you must ponder upon the steps of what you are doing and why you are doing. **Answer to those questions may help you learn programming.**

Through recorded lectures, I plan to explain concepts, do an example and give you a small project to work on in the class.

**Emails:**

All email responses, during the weekdays, will be within 24 hours. I may not get to my email during weekends.

**File Submission**

All assignments will be submitted online on Canvas. When submitting assignments you can attach files. **In case you find any difficulties in submitting assignments, please let me know asap.**

**Computer Lab at the CSN**

Both, raptor and python, software should be available on computer lab’s computers. However, lab assistants may not be able to help you on how to use them. But I am available on the Cheyenne campus daily and so if you work there (or anywhere else), and have problems just call me and I may be able to help you on phone.

### Grading policy

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Syllabus quiz</td>
<td>1%</td>
<td>Due ASAP</td>
</tr>
<tr>
<td>Assignments and quizzes</td>
<td>34%</td>
<td>Due weekly</td>
</tr>
<tr>
<td><strong>Exams - 1</strong></td>
<td>15%</td>
<td><em>In person, in class or testing center</em></td>
</tr>
<tr>
<td><strong>Exam-2</strong></td>
<td>25%</td>
<td><em>In person, in class or testing center</em></td>
</tr>
<tr>
<td><strong>Final Exam</strong></td>
<td>25%</td>
<td><em>In person, in class or testing center and comprehensive</em></td>
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<tr>
<td>Overall Grade</td>
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<tr>
<td>90-100%</td>
<td>---A</td>
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<tr>
<td>80 - 89.99%</td>
<td>-B</td>
<td></td>
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<tr>
<td>70 - 70.99%</td>
<td>-C</td>
<td></td>
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<tr>
<td>60 - 69.99</td>
<td>----D</td>
<td></td>
</tr>
<tr>
<td>Below 60%</td>
<td>----F</td>
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**Syllabus Quiz:** You must take syllabus quiz and get a perfect score in order to be able to see assignments and projects. You can take this syllabus quiz as many times as you need. Let me know if you are unable to get a perfect score after few attempt.

**Assignments:** There will be one assignment per chapter. It must be submitted on due date for grading. It is important to do well in assignments in order to get good grade. You will have possibly 10 assignment/projects for this course. All will be graded. **Only a randomly selected set of problems may be graded but you must submit complete assignment. However, points will given for graded and ungraded problems.**

**Technical difficulties:** I understand that you will be doing assignments and projects at your home computers. However, technical difficulties, of any kind are your responsibility. You must submit your work on due date otherwise you may lose points for that assignments. I will

**Exams:** We will have two exams – both will have short answer type and programming project type questions. They are to be taken in person either in a classroom I will reserve for you or at the testing center. If you will do homework regularly then these exams will be easier.
on you, but it will be impossible to do them without practicing programming projects.

<table>
<thead>
<tr>
<th>Final Exam:</th>
<th>It will be a comprehensive final exam. However, most questions will come from the new materials covered after the exam-2.</th>
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<tbody>
<tr>
<td>Exams location</td>
<td>All exams are given in person in classroom or you can take them in testing center. You will have more than one day to take the exams. I will reserve rooms on Wednesday and Friday morning and evening to give exams. You can also do them in testing center even though I will prefer you to take them in my presence so I can help you should there be any issues with questions.</td>
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<tr>
<td>Missed Exam – make up policy</td>
<td>There is no makeup for missed exams for any personal reasons. You will be given more than one day and enough advance notice.</td>
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<tr>
<td>Extra credit:</td>
<td>I will give extra credit for class participation. There is a discussion board available on canvas. There will be a separate location for each chapter. In order to get extra credits you must participate in discussion on each chapter. You can post your questions on topics, you can answer to someone’s questions, you can mention how to study certain topic etc. I want you to contribute to the class.</td>
</tr>
<tr>
<td>W grade</td>
<td>I will not be able to give any student a W grade. You must withdraw from the class by going to registrar office before the drop date given in the college schedule. You will only be able to get earned grade from me.</td>
</tr>
<tr>
<td>Incorrect grading</td>
<td>You are responsible to review your graded exams and assignments. If you feel that you are marked off points incorrectly, please send an email to your instructor as soon as possible and mention the question you want him to review.</td>
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### Policies and College Resources

| Disability Resource Center: | If you have a documented disability that may require assistance, you will need to contact the Disability Resource Center located on each campus and can be contacted at the following phone numbers. Cheyenne: 702.651.4045, Henderson: 702.651.3759, and West Charleston: 702.651.5644. Please visit [http://www.csn.edu/administration/student/services/disability/index.asp](http://www.csn.edu/administration/student/services/disability/index.asp) for more information. |
| Academic Honesty:          | Academic dishonesty of any kind will not be tolerated. Any incident of academic dishonesty will be reported to the College's Administration, and the most serious course of action will be recommended. For more information, please visit the Student Academic Integrity Policy: [http://www.csn.edu/uploadedfiles/2010.08.11%20FINAL%20FacSenIntegritydraft.pdf](http://www.csn.edu/uploadedfiles/2010.08.11%20FINAL%20FacSenIntegritydraft.pdf) |
| Religious Holidays:        | (From the CSN Student Handbook) CSN is sensitive to the religious obligations of its students. Any student missing class, quizzes, examinations or any other class work because of an observance of religious holidays shall, whenever possible, be given an opportunity to make up the missed work. **You must notify the instructor in writing of such an event before the date of occurrence.** This policy shall not apply in the event that administering the assignment at an alternate time would impose an undue hardship on the instructor or the College which could not have been reasonably avoided. |
**Withdrawal Policy**

Please refer to the **Important dates** section of the Spring 2014 schedule to learn about the withdrawal dates. Please know that no instructor will be able to grant you a W grade, so you must withdraw yourself if you want a W grade.

**Additional Notes:**

**Additional Notes: My responsibilities:**

1. I will reply to your e-mail messages within one day. Replying to phone calls may take at most two days.

2. I will make sure to accommodate all your learning needs and will answer your questions in a timely manner.

3. I will try my best to resolve any issues.

4. I will return feedback and your grade on assignments within one week of the due date.

**Your responsibilities:**

1. Stay active in classroom discussions and activities. Let me know if you find any discrepancies in the syllabus, course material, or activity due dates, as soon as possible.

2. Watch the deadlines for exams and ask questions. 3. Do the best you can in the class and don’t hesitate to ask for help.

3. You will review my feedback on your assignments and will let me know of any questions or concerns as soon as possible.

You are always welcome to come to my office during the posted office hours or make an appointment to see me outside of the office hours.

Instructor reserves the right to make changes to the syllabus with proper notification to students well in advance. This action will only be taken for students benefits.
## IS 115 Material Schedule

(Subject to change with prior notice)

<table>
<thead>
<tr>
<th>Date</th>
<th>Material covered - Class/Home</th>
<th>Assignment &amp; Exams</th>
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<tbody>
<tr>
<td>Week 1</td>
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- Syllabus and Introduction.  
- Downloading and installing Raptor software on your computer (details given in Appendix D)  
- Introduction to Raptor.  
- Chapter 0 - Introduction  | Syllabus Quiz – ASAP  
Assignment -1 |
| Week 2 |  
- Overview of the Canvas Learning system  
- Chapter 1 – An Introduction to Programming  
  - Variables, input, processing, output  
- Introduction to Rapter | Assignment-2 |
| Week 3 |  
- Chapter 1 – An Introduction to Programming-cont  
- Chapter 2 – Data Representation  
  - Decimal and Binary Representation  
  - Hexadecimal System  
  - Converting one system to another  
  Note: No questions from Integer and floating point numbers | Assignment-3 |
| Week 4 |  
- Chapter 3: Developing a program  
- Putting together programs in Raptor | Assignment-4 with programming projects |
| Week 5 |  
- Simple programs using Python  
- Catch up week | |
| Week 6 |  
- EXAM 1 – First 80 minutes – Covers Chapters 0-3  
- Chapter 4 – Selection structures: Making Decisions | Exam -1 |
| Week 7 |  
- Chapter 4 – Selection structures: Making Decisions  
- Decisions in Python  
- Chapter 5 – Repetition Structures: Looping | Assignment-5 |
| Week 8 |  
- Chapter 5 – Repetition Structures: Looping  
- Repetition in Python  
- Chapter 6 – More about Loops and Decisions | Assignment 6 |
| Week 9 |  
- Chapter 6 – More about Loops and Decisions | Assignment 7 |
| Week 10 |  
- Chapter 7 – Arrays: Lists and Tables | |
| Week 11 |  
- EXAM 2 – In person 80 minutes – Covers earlier concepts Chapter 1 to chapter 6  
- Arrays in Python  
- Chapter 8 – Searching and sorting | Exam-2 |
| Week 12 |  
- Chapter 9 – Program modules, Subprograms, and Functions  
- Subprograms in Python  
- Chapter 10 – Sequential Data Files | Assignment 8 |
| Week 13 |  
- Chapter 10 – Sequential Data Files  
- Sequential Data Files in Python  
- Chapter 11 – An introduction to Object-Oriented programming | Assignment 9 |
| Week 14 |  
- Chapter 11 – An introduction to Object-Oriented programming (OOP)  
- OOP in Python  
- Review | Assignment 10 |
| Week 15 |  
- Catch up, Review and comprehensive final exam | Final Exam |