

CIS 101 – Beginning Programming

Course Syllabus and Calendar – Fall 2013

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Brigham Young University–Hawai‘i

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1 Overview

Computers are great. But they are also really stupid.

By stupid, I mean computers only understand really simple commands. Anything complex must be built up out of these simple commands.

Programming is the art of building up the fun and interesting things that you want to be done, starting from just the really simple commands that the computer can understand.

Sometimes it is frustrating. Sometimes it is very satisfying.

This class teaches powerful knowledge. It teaches skills by which you can better serve those around you. It teaches skills you can “take to the bank.”

There are many fine programming languages. Our programming language will be Perl.

1.1 Preparation

We assume you have no programming experience whatsoever. We expect you can read, type, send and receive email, and visit web sites. We will teach you everything else you need to know.

1.2 There May Be Changes

Like all courses I teach, I will be keeping an eye out for ways this one could be improved. Changes generally take the form of opportunities for extra credit, so nobody gets hurt and some people may be helped. If I make a change to the course and it seems unfair to you, let me know and I will try to correct it. If you are brave enough, you are welcome to suggest ways the class could be improved.

I may digitally record the audio of my lectures some days. This is to help me improve my teaching materials.

2 Course Details

2.1 About the Course

- **Course Number:** CIS 101
- **Title:** Beginning Programming
- **Course Description:** Extensive hands-on software development and testing using variables, arrays, instruction sequences, decisions, loops, and subroutines. May also include dynamic web pages (CGI) and regular expressions.
- **Textbook:** Introduction to Programming Using Perl and CGI, by Don Colton.

- **Classroom:** GCB 111
- **Start/End:** Mon, Sep 9 to Mon, Dec 8
- **Class Time:** MWF 12:10 to 13:10
- **Final Exam:** Fri, Dec 13, 13:00–15:50

2.2 My Websites

Here is a list of my other websites that you may encounter this semester.

- <http://byuh.doncolton.com/cis101/> is my course homepage. It has links to everything else, including the study guide and the textbook.
- <http://ipup.doncolton.com/> has the textbook I wrote for this class.
- <https://dcquiz.byuh.edu/> is the learning management system for my courses.
- <http://byuh.doncolton.com/> is my campus homepage. It has my calendar and links to the homepages for each of my classes.
- <http://doncolton.com/> is my off-campus homepage.

2.3 About the Instructor

- **Instructor (me):** Don Colton
- **My email:** doncolton2@gmail.com
- **My Office:** GCB 128
- **Office Hour:** MWF 13:10 to 13:40.

I have reserved GCB 111 on MWF 13:20 to 14:20 as “CIS 101L” so my students and others can study in a lab setting and meet with each other and with me. The room is available as an Open Lab for your use either individually or in groups, for my class or for other classes. MWF 13:10 to 13:40 I will be present in GCB 111 or in my office to assist students that come.

2.4 About the Study Guide

I provide a study guide for this course. The study guide provides current details and specific helps for each assignment. It provides guidance for taking the exams.

<http://byuh.doncolton.com/cis101/2135/sguide.pdf> has the study guide for this course.

The study guide will be updated regularly throughout the semester, as new assignments are given.

The study guide provides details about (what I consider to be) my very liberal policy on regrading and late work. I have a liberal policy because I want every student to complete every assignment and learn everything that was involved. And I know that things come up to prevent you from doing everything on time.

3 Learning Objectives

By the conclusion of this course, students will demonstrate the ability to write clear and correct programs that utilize the following techniques.

- sequences of simple steps
- simple variables (scalars)
- decisions (if, else, elsif)
- looping (while, for, foreach)
- array and list variables
- subroutines

Students will demonstrate these major skills by creating, in timed and supervised situations, short programs that perform specific tasks.

In teaching the major skills, I also teach the following:

- dynamic web page creation
- dynamic response to web page inputs

4 Grading

Here is the actual grade distribution from Fall 2012: (35 students): grade average 2.69, 4.0x13 3.7 3.0x4 2.7x3 2.4x2 2.0x2 1.7x4 1.4 0.7x2 0.0x3 (Wx2).

Here is the actual grade distribution from Winter 2013: (24 students): grade average 2.22, 4.0x6 3.7 3.0x5 2.7x3 2.4 0.0x8.

Grading is based on Effort (30.0%), Activities (13.5%), Final Project (4.0%), and Exams (5.25%). Plus there is about 10% extra credit available.

4.1 Grading Scale

I use a 60/70/80/90 model based on 1000 points.

Based on 1000 points

930+	A	900+	A-	870+	B+
830+	B	800+	B-	770+	C+
730+	C	700+	C-	670+	D+
630+	D	600+	D-	0+	F

You need to earn a C or better (730 points or more) in the class if you plan to major in CS, IS, or IT. If you earn less, you must retake the class or change majors.

4.2 Tracking Your Grade

I keep an online gradebook so you can see how your points are coming along. It also lets you compare them with other students in the class (without seeing their names).

<https://dcquiz.byuh.edu/> is my personal Learning Management System. That is where I maintain my online grade book.

Your points are organized into three grade books: Overall, Effort, and Activities.

2135 CIS 101 Overall Grade Book: This includes the totals from Activity and Effort and adds your exam performance. It also shows your final grade.

2135 CIS 101 Effort Grade Book: This tracks the daily updates and study time.

2135 CIS 101 Activities Grade Book: This tracks your performance on in-class activities.

4.3 Effort: Daily Update (50 points)

Each day in class starts with the “daily update” (DU). It is my way of reminding you of due dates and deadlines, sharing updates and news, and taking roll. It is your way of saying something anonymously to each other and to me. It must be taken in class during the 10-minute window of time that starts 5 minutes before class and ends 5 minutes into class.

The DU is worth two points per class period, with 50 points expected (for 25 out of about 37 class pe-

riods), and about 75 points possible. Anything beyond 50 is extra credit. It is also a reward for coming on time, or close enough that you can do the update.

As part of the Daily Update, once a week I will ask you how much time you spent studying the previous week. I will use your report to update your study time points.

4.4 Effort: Study Time (250 points)

We award points for study time (ST), which is time spent engaging with materials directly related to this course.

Each week you are invited to report, on your honor, how many hours you studied during the previous week, Sunday morning through Saturday night. We award two “effort” points per hour of “study,” for a goal of 18 points (9 hours, including class time) and a maximum of 20 points (10 hours) per week, whether there is a holiday or not.

There are 14 weeks. $14 \times 18 = 252$. $14 \times 20 = 280$ (max). Anything beyond 250 points is extra credit.

Most students max out the study time points each week. This provides them with extra credit that helps ensure they get a good grade in the class.

Carry Forward: If you study more than the maximum time for which I will give credit, you are invited to report them, and also carry forward the extra hours and report them in the next week. For example, since 10 hours is the maximum that counts, if you studied 15 hours, you would report 15 hours of study, and I would count the first 10 hours. You would then take the remaining 5 hours and count it toward the following week.

There is no Carry Backward.

4.5 Effort Points are Optional

The effort points (daily update and study time) are there as a safety net. They are easy to earn. They help to make sure you will pass the class.

But when I calculate your final grade, I do it two ways:

- Counting every point, based on 1000 total points.
- Counting all but daily update and study time, based on 700 total points.

I grade both ways because some students have previous experience (or natural genius) and do not need to study as much.

I use whichever method gives you the best grade.

4.6 Activities: Daily (135 points)

On most days we will have an in-class activity assignment. Each will normally be worth 5 points.

Roughly 27 assignments x 5 points = 135 points. The total will be 135. Anything beyond that is extra credit.

The number of in-class activities is not perfectly predictable. The overall points will be adjusted so the full-credit values add up to 135 or more.

Points are assigned on a 0-to-5 basis as follows:

- 0: nothing found, or way too little.
- 1: It's a start. Runs without crashing.
- 3: Nice but missing something important.
- 4: Missing something minor.
- 5: Perfect. Totally meets the standards for achievement.

Bonus points may be given based on peer voting.

Some assignments may take two days and count double.

On activity work, you are encouraged to work with (but not just copy) your fellow students. We want everyone to get full credit on every assignment.

Every assignment will have ample opportunities for individual creativity. Duplicate work will break my heart.

4.7 Activities: Project (40 points)

(40) Project Points

- 10 Project CGI: write a dynamic web page
- 10 Project Pictures: use img tags
- 10 Project Multi Input: process multiple inputs
- 10 Project Hidden Fields: pass state (counter, etc)

The final project is due by 23:59 on Tuesday, the day after the last day of class. I plan to grade it early on Wednesday unless you have asked me to grade yours earlier.

Project points are earned for performance on out-of-class work. The project must be your own work. It should be fun. A game would be ideal. You are allowed to consult with others including websites but you are not allowed to cut and paste code written by others. Each online screen must clearly identify you as the author. It must accept user input. It should utilize hidden fields (state) that are needed for its operation.

Your final project cannot just be something we did in class. The in-class activities are good examples, and teach good principles, but they do not demonstrate understanding or creativity. If your project is based on something we did in class, it must go beyond it in some substantial and significant way.

<http://dc.is2.byuh.edu/cis101.2135/> is the place to link your project. It is the Student Projects page for this class. Link it to the "proj" slot.

See the study guide for a more detailed presentation of the official project details.

4.8 Skill: Exams (525 points)

There are 21 exam tasks. Each is a program for you to do during one of the final exams. Each is worth 25 points. Points for each question can be earned only once.

There are several exams given during the semester. Each one is a "final exam" in the sense that it covers everything we learn during the semester, and by completing it, you earn the points for it as though you had done it on the day of the actual final. Except for the last exam, they are called "early final" exams. Each early final lasts for about one hour. The last final lasts for about three hours. One practice exam is also given, for no credit, to help you understand how to do the other tests.

(525) Exam Points (21 tasks)

- 1 25p String Basic (1B)
- 2 25p Number Basic (2B)
- 3 25p Number Story (2S)
- 4 25p Number Decision (4D)
- 5 25p Number Decision Story (4S)
- 6 25p String Decision (5D)
- 7 25p String Decision Bracket (5B)
- 8 25p Repeat While (6W)
- 9 25p Repeat For (6F)
- 10 25p Repeat Last (6L)
- 11 25p Repeat Nested Loops (6N)

- 12 25p Lists Basic (7B)
- 13 25p Lists Loop (7L)
- 14 25p Arrays Basic (8B)
- 15 25p Arrays Loop (8L)
- 16 25p Split (8S)
- 17 25p Join (8J)
- 18 25p Subroutine Returns (9R)
- 19 25p Subroutine Positional Parameters (9P)
- 20 25p Subroutine Globals and Locals (9G)
- 21 25p Subroutine Variable Parameters (9V)

The study guide talks more about each of these tasks.

4.9 Other Extra Credit

Report an error in the published materials I provide. In this class, they include the following:

- The course website, parts relating to this semester.
- The course syllabus.
- The course study guide.
- The course textbook, since I wrote it.

Each error reported can earn you extra credit. (Typos in my email messages are common and do not count.)

5 Calendar

We meet about 37 times plus the final.

See the study guide for dates and deadlines.

5.1 Special Dates

Mo Sep 09 First Day of Instruction
 Fr Sep 20 **exam 0** practice test
 Fr Sep 27 **exam 1**
 Fr Oct 11 **exam 2**
 Fr Oct 25 **exam 3**
 Fr Nov 08 ISECON, No Class
 Mo Nov 11 **exam 4**
 We Nov 20 EIL Program Review, No Class
 Fr Nov 22 **exam 5**
 Fr Nov 29 Thanksgiving Friday, No Class
 Fr Dec 06 **exam 6**

Mo Dec 09 Last Day of Instruction
 Tu Dec 10 Project Deadline (23:59)
 Fr Dec 13 **exam 7** Final Exam, 13:00–15:50

The exam dates will not change unless there is a fire or a flood or something. Exams happen about twice a month. They are closed-book, closed-notes, closed-neighbor, etc. You can bring blank paper. **Some memorization is required.**

5.2 Excused Absences

You can see that I have built a bit of slack into the grading so you can miss a few days (or assignments) if you need to, and still earn an A. Taking a friend to the airport? Taking your spouse or child to the doctor? Taking a field trip for another class? No problem. You are excused.

If you have to miss an exam, since there are several exams and they have identical content, my advice is to study harder for one of the other exams. If you have to miss the last final, that's a bit more difficult, but it is still possible to do all the problems without taking all the exams.

Beyond that I do not offer special treatment to anyone except in HIGHLY unusual situations.

6 Support

The major forms of support are (a) open lab, (b) study groups, and (c) tutoring.

If you still need help, please find me, even outside my posted office hours.

6.1 Office Hour / Open Lab

I have reserved GCB 111 on MWF 13:20 to 14:20 as "CIS 101L" so my students and others can study in a lab setting and meet with each other and with me. The room is available as an Open Lab for your use either individually or in groups, for my class or for other classes. MWF 13:10 to 13:40 I will be present in GCB 111 or in my office to assist students that come.

The CIS department operates an open lab with tutors in GCB 111 most afternoons and evenings.

6.2 Study Groups

You are encouraged to form a study group. If you are smart, being in a study group will give you the opportunity to assist others. By assisting others you will be exposed to ideas and approaches (and errors) that you might never have considered on your own. You will benefit.

A good time for your study group to meet is immediately after class. Eat lunch together (carefully) and work on the class activities.

If you are struggling, being in a study group will give you the opportunity to ask questions from someone that remembers what it is like to be totally new at this subject. They are more likely to understand your questions because they sat through the same classes you did, took the same tests as you did, and probably thought about the same questions that you did.

Most of us are smart some of the time, and struggling some of the time. Study groups are good.

6.3 Tutoring

The CIS department provides tutoring in GCB 111, Monday through Friday, typically starting around 5 PM and ending around 11 PM (but earlier on Fridays). Normally a schedule is posted on one of the doors of GCB 111.

Tutors can be identified by the red vests they wear when they are on duty.

Not all of the tutors know about everything. But all of the tutors should know which tutors do know about whatever you are asking about, so they can direct you toward the best time to get your questions answered.

The best way to use a tutor is to show them something that you have written and ask them why it does not work the way you want. This can open the door to a helpful conversation.

Another good way to use a tutor is to show them something in the textbook and ask about it.

The worst way to use a tutor is to plunk down next to them and say, "I don't understand. Can you teach me?" If you did not try hard to read carefully, you are wasting everybody's time.

If you still need help, please come and see me, even

outside my posted office hours.

7 BYUH Learning Framework

I believe in the BYUH Framework for Learning. If we follow it, class will be better for everyone.

7.1 Prepare for CIS 101

Prepare: Before class, study the course material and develop a solid understanding of it. Try to construct an understanding of the big picture and how each of the ideas and concepts relate to each other. Where appropriate use study groups to improve your and others' understanding of the material.

In CIS 101: Make reading part of your study. There is more than we could cover in class because we all learn at different rates. Our in-class time is better spent doing activities and answering your questions than listening to a general lecture.

7.2 Engage in CIS 101

Engage: When attending class actively participate in discussions and ask questions. Test your ideas out with others and be open to their ideas and insights as well. As you leave class ask yourself, "Was class better because I was there today?"

In CIS 101: Participate in the in-class activities. Those that finish first are encouraged to help those that want assistance. It is amazing what you can learn by trying to help someone else.

7.3 Improve at CIS 101

Improve: Reflect on learning experiences and allow them to shape you into a more complete person: be willing to change your position or perspective on a certain subject. Take new risks and seek further opportunities to learn.

In CIS 101: After each exam, I normally allow you to see every answer submitted, every score given, and every comment I wrote, for every question. Review your answers and those of other students. See how your answers could be improved. If you feel lost, study the readings again or ask for help.

8 Standard Statements

All syllabi are encouraged or required to address certain topics. These are generally considered to be common sense, but we find that it is useful to mention them explicitly anyway.

8.1 Dress and Grooming Standards

The dress and grooming of both men and women should always be modest, neat and clean, consistent with the dignity adherent to representing The Church of Jesus Christ of Latter-day Saints and any of its institutions of higher learning. Modesty and cleanliness are important values that reflect personal dignity and integrity, through which students, staff, and faculty represent the principles and standards of the Church. Members of the BYUH community commit themselves to observe these standards, which reflect the direction given by the Board of Trustees and the Church publication, “For the Strength of Youth.” The Dress and Grooming Standards are as follows:

Men. A clean and neat appearance should be maintained. Shorts must cover the knee. Hair should be clean and neat, avoiding extreme styles or colors, and trimmed above the collar leaving the ear uncovered. Sideburns should not extend below the earlobe. If worn, moustaches should be neatly trimmed and may not extend beyond or below the corners of mouth. Men are expected to be clean shaven and beards are not acceptable. (If you have an exception, notify the instructor.) Earrings and other body piercing are not acceptable. For safety, footwear must be worn in all public places.

Women. A modest, clean and neat appearance should be maintained. Clothing is inappropriate when it is sleeveless, strapless, backless, or revealing, has slits above the knee, or is form fitting. Dresses, skirts, and shorts must cover the knee. Hairstyles should be clean and neat, avoiding extremes in styles and color. Excessive ear piercing and all other body piercing are not appropriate. For safety, footwear must be worn in all public places.

8.2 Accommodating Special Needs

Brigham Young University–Hawai‘i is committed to providing a working and learning atmosphere which

reasonably accommodates qualified persons with disabilities. If you have any disability that may impair your ability to complete this course successfully, you are invited to contact the Students With Special Needs Coordinator at 808-675-3518. Reasonable academic accommodations are made for all students who have qualified documented disabilities.

8.3 Plagiarism

We learn by watching others and then doing something similar.

Sometimes it is said that plagiarism is copying from one person, and research is copying from lots of people.

When you are having trouble with an assignment, I encourage you to look at not just one, but many examples of work done by others. Study the examples. See what you can learn from them. Do not automatically trust that they are right. They may be wrong.

Do not just copy. Do your own work. When I review computer code, sometimes I see quirky ways of doing things. They appear to work even though they may be wrong. And then I see someone else that has done it exactly the same wrong way. This does not feel like “doing your own work.” Cut and paste is pretty much an honor code violation. Read and learn is totally okay. Copying other ideas is okay. I don’t want to see any cut and paste.

<http://en.wikipedia.org/wiki/Plagiarism> has a wonderful article on plagiarism. Read it if you are not familiar with the term. Essentially, plagiarism is when you present the intellectual work of other people as though it were your own. This may happen by cut-and-paste from a website, or by group work on homework. In some cases, plagiarism may also create a violation of copyright law. If you borrow wording from someone else, identify the source.

Intentional plagiarism is a form of intellectual theft that violates widely recognized principles of academic integrity as well as the Honor Code. Such plagiarism may subject the student to appropriate disciplinary action administered through the university Honor Code Office, in addition to academic sanctions that may be applied by an instructor.

Inadvertent plagiarism, whereas not in violation of the Honor Code, is nevertheless a form of intellectual

carelessness that is unacceptable in the academic community. Plagiarism of any kind is completely contrary to the established practices of higher education, where all members of the university are expected to acknowledge the original intellectual work of others that is included in one's own work.

CIS 101: In this course group work is permitted and encouraged but you are not allowed to turn in work that is beyond your understanding, whether you give proper attribution or not. Make sure you understand what you are submitting and why each line is there.

CIS 101: On exams you are required to work from personal memory, using only the resources that are normally present on your computer. This means the exams are closed book and closed notes. However, you are nearly always allowed (and encouraged!) to test your programs by actually running them on the computer where you are sitting. Students caught cheating on an exam may receive a grade of F for the semester, no matter how many points they may have earned, and they will be reported to the Honor Code office.

Faculty are responsible to establish and communicate to students their expectations of behavior with respect to academic honesty and student conduct in the course. Observations and reports of academic dishonesty shall be investigated by the instructor, who will determine and take appropriate action, and report to the Honor Code Office the final disposition of any incident of academic dishonesty by completing an Academic Dishonesty Student Violation Report. If the incident of academic dishonesty involves the violation of a public law, e.g., breaking and entering into an office or stealing an examination, the act should also be reported to University Police. If an affected student disagrees with the determination or action and is unable to resolve the matter to the mutual satisfaction of the student and the instructor, the student may have the matter reviewed through the university's grievance process.

8.4 Sexual Harassment

BYUH's policy against sexual harassment complies with federal Title IX of the Education Amendments of 1972 to protect university students from student-to-student sexual harassment both in and out of the

classroom setting. Any incidents of such student-to-student harassment should be reported to either the Director of Human Resources (808-675-3713) or the Honor Code Office (808-675-3531). Allegations of sexual harassment are taken seriously. Upon receiving a report of sexual harassment, the Director of Human Resources will take appropriate action to resolve and correct conditions resulting from individual perceptions or from inappropriate behavior.