COLLEGE OF DUPAGE
CIS 1400 – Programming Logic and Technique – Course Syllabus

Carolyn England
COD Main #: 942-4125 Voicemail Ext. 4125
Office: BIC 1544B (Division Office TEC1034)
Mailbox: BIC 1E01
Office Hours: see
https://www.cod.edu/faculty/websites/england/index.aspx
e-mail: england@cod.edu

CIS 1400 NET01
FALL SEMESTER 2024

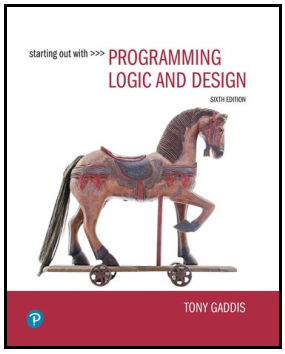
Location: Online

Course Name: CIS 1400 – Programming Logic and Technique

Credit and Contact Hours: 4 semester credit hours *(4 lecture hours)*

Prerequisites: MATH 0482 – Foundations for College Mathematics II OR
MATH 1115 – Technical Mathematics I OR
qualifying score on mathematics placement test OR
consent of instructor

Textbook (Required):



Starting Out with Programming Logic & Design by Tony Gaddis, Publisher: Pearson Education, Sixth Edition, ISBN-13: 978-0-13-760214-8.

Other Course Materials: Freely available Adobe Acrobat Reader for completing assignment forms, software for creating digital versions of design documents, assignment submission material in digital format (student should keep backup copies). MS Office 365 is available free for COD student use.

Course Description:

An introduction to computer-based problem-solving techniques. Includes software design tools such as structure charts, Input Processing Output (IPO) charts, flowcharts, pseudocode and Unified Modeling Language (UML) diagrams. Concepts such as documentation, structured design, modularity, Object Oriented Program (OOP) design, and event driven programming are covered. Programming of algorithms are implemented using a high level language that emphasize structured and object oriented design techniques. Repeatable for credit: No

Course Objectives:

Upon successful completion of this course, the student should be able to:

1. Explain steps used in program development cycle
2. Identify tools used in software design
3. Design algorithms to solve both verbal and written problems using Input Processing Output (IPO) charts, pseudocode, and flowcharts
4. Differentiate simple data types
5. Differentiate variables, constants, and literals
6. Apply concepts of structured program design such as modularity, sequence, selection, and repetition
7. Differentiate arithmetic, relational, and logical operators in algorithm design
8. Demonstrate variable scoping in program design for local and global variables
9. Apply data transfer techniques between modules using pass by value parameters, pass by reference parameters, and return values
10. Construct applications to use files for input and output
11. Implement arrays as structures to contain data
12. Apply searching and sorting algorithms in problem designs
13. Utilize a higher level programming language to code, test, and debug software designs
14. Implement concepts of abstraction and encapsulation using Object Oriented Programming (OOP) design
15. Create Unified Modeling Language (UML) diagrams for OOP design
16. Explain advanced OOP design techniques such as inheritance and polymorphism
17. Describe integration of Graphical User Interfaces (GUIs) and event driven programming
18. Create wireframe prototypes for GUI design

Topical Outline:

1. Software Development Lifecycle (SDLC)
2. Software design techniques
3. Program documentation
    a. Pseudocode
    b. IPO charts
    c. UML diagrams
    d. GUI wireframes
4. Computer based paradigms
5. Simple data types
6. Variables, constants, and literals
7. Control structures
    a. Sequential
    b. Selection
    c. Repetition
8. Arithmetic, relational, and logical operators
9. Local and global variable scope
10. Modularity, parameter passing, and return values
11. File access
12. Arrays
    a. Single dimensional
    b. Multi-dimensional
    c. Parallel
13. Searching and sorting algorithms
14. Programming and debugging
15. Test cases for desk checking, testing, and debugging
16. OOP design concepts
17. GUI and event driven programming

Course Requirements

Academic Honesty

Course related academic integrity is an important component of College policies and the Computer Information Science curriculum. **Submitted program code will be run through a plagiarism checker** such as codequiry (https://codequiry.com/) to ensure original work is submitted.

Student academic dishonesty includes but is not limited to:

- Dishonest use of course materials, such as student papers, examinations, reports and material posted on the Internet.
- Knowingly posting course materials of any kind on Internet sites such as (*but not limited to*) Course Hero and Chegg without the consent of the instructor.
- Knowingly assisting others in the dishonest use of course materials such as student papers, examinations and reports.
- Knowingly providing course materials such as papers, lab data, reports and/or electronic files to be used by another student as that student's own work.
- Plagiarizing, i.e., using language or ideas from materials without acknowledgement and/or copying work from other sources and submitting it as one's own. This includes the use of generative AI resources.
- Examples of plagiarism include but are not limited to:
  - Copying a phrase, a sentence, or a longer passage from a source (*including an Internet source*) and submitting it as one's own.
  - Summarizing or paraphrasing someone else's ideas without acknowledging the source.
  - Submitting group assignments individually as one's own independent work.
  - Copying or taking pictures of course materials such as videos, exams, quizzes or assignments and posting the copied items and/or pictures on the Internet **or** sharing these copied items and/or pictures with other students who have not yet completed the assignments.
  - Taking pictures or copying course materials that are considered confidential by the instructor such as exams or quizzes.

Coursework submitted by the student that is either found online, significantly similar to other submitted work, or violates any of the above conditions, is subject to one or more of the following:

- Grade of 0 for the assignment
- Failing grade for the course
- Completion of Academic Dishonesty Form for recording in the Judicial Database

The College policy on academic integrity can be found in the College catalog under Student Rights and Responsibilities, Code of Academic Conduct:

https://catalog.cod.edu/student-services-general-student-information/

Access and Accommodations

The College of DuPage is committed to the equitable access of educational opportunities for students with disabilities in accordance with The Americans with Disabilities Act, As Amended and Section 504 of the Rehabilitation Act of 1973. Any student who feels they may need an accommodation based on an illness, injury, medical condition, or disability (whether temporary or permanent) should contact the Center for Access and Accommodations to determine eligibility for accommodations and to obtain an official Letter of Accommodation. Connecting with the Center for Access and Accommodations is an important way to make sure that any student who has a need based on a disability, illness, injury, or medical condition is provided with appropriate accommodations. The Center for Access and Accommodations can be reached via email at access@cod.edu. Students may also initiate a request for services by going to www.cod.edu/access and clicking on the green box labeled "complete form to request accommodations."

If you are already registered with the Center for Access and Accommodations, please email me your Letter of Accommodation within **two weeks (14 calendar days) of the start of the semester** or within **one week (7 calendar days) of receipt of an official Letter of Accommodation** to ensure proper course accommodations are in place. **Please include the course and section number with your email so the proper accommodations can be made for the indicated course**. For your own privacy, please DO NOT send any private health documentation or Doctor's notes to me.

e-mail

Every attempt will be made to answer e-mail on a 24 hour turnaround basis (during the Monday through Friday week; weekend messages will be responded to during the next scheduled office hour). When sending an e-mail please indicate your name, in which course you are currently enrolled, the problem you are having, and how best to contact you with a resolution.

Grading Policy: Lab Assignments

Each topic contains a lab assignment. The lab assignment is a **fill-in pdf form** that you can use the freely downloadable **Adobe Acrobat Reader 7.0** or greater to complete. To achieve the maximum points for any topic lab assignment, the following requirements should be followed:

1. Assignments should be completed by downloading the pdf form for the appropriate topic, using Adobe Acrobat Reader (or Evince Document Viewer on Linux) to **include the student's name at the top** and complete any questions in the given text boxes. Assignment forms **missing a name** can lose up 10% of possible assignment points.
2. The pdf form should be saved (using Adobe Acrobat Reader or Evince Document Viewer) with the student's initials (remember to keep the pdf extension). For example, a student by the name of Peter John Perfect would use the following name for topic assignment number 1:

   PJPTopic1.pdf

   Make sure your answers are saved and viewable by Adobe Reader before submitting the form. If the form answers cannot be viewed by Adobe Acrobat Reader, they will not be graded and the student will receive a grade of 0 for the assignment.

   *Completion of the assignment form with a product other than Adobe Acrobat Reader often leads to **non-viewable answers, disabled point boxes, or forms without the ability to save grading feedback**.* To check if answers are **viewable** and with Adobe Acrobat Reader, right-click the pdf assignment file icon and select "Open with" to select Adobe Acrobat Reader and verify your completed selections and a total of **0.0** for the ungraded assignment points. Verify that grading feedback can be included on your submitted form by selecting "File > Save" or "File > Save As" to ensure instructor feedback can be included. If the form cannot be saved by Adobe Acrobat Reader, there will be **no grading feedback** included for the student. Multiple

submissions of assignments without the ability to add grading feedback will result in a 10% grading penalty for each assignment.

3. Any **source code files** created for completion of an assignment should be included with the pdf form for assignment submission. These files should be ASCII text files with the appropriate file extension for the given language. Each completed program should be in a single separate file that includes **a multi-line comment file header** comment with author, date, filename, class, and short description. Only a single source file will be graded for each assignment question/task; multiple source file submissions for the same assignment question/task are not allowed and will not be graded (*the source file with the latest time stamp will be graded*). **Source files that cannot be compiled or interpreted with the required version of the programming language will receive a maximum of one half the possible points for that part of the assignment.** The output from a **sample run** of the source code file should be included as **multi-line comment footer** at the end of the source code file.
4. Be sure to include any needed data, design, or resource files **as indicated in the assignment instructions**. All assignment files (data, design, or resource files) should be bundled into a **single .zip file** for final assignment submission. **Additional files not required for the assignment submission, or files bundled in a format other than .zip, will receive a grade of 0 for the assignment.**
5. All assignments should be submitted (i.e. *attach file and select 'Submit' button*) by the assigned due dates/times in order to get full credit. **Once the due date has passed, the submission link is removed from Blackboard and the lab can no longer be submitted through Blackboard for class credit.**

   In the event that ANY student experiences an unforeseeable circumstance that causes them to miss an assignment due date (**EXCEPT THE LAST ASSIGNMENT OF THE COURSE**), the student is given a **1 time option to complete** their assignment within **one week** (7 calendar days) of the original due date if the **instructor is notified within 72 hours** (3 calendar days) via email of the original due date to activate this option **AND** the student **obtains an email confirmation from the instructor upon receipt of the late assignment within 72 hours** (3 calendar days) of the student's assignment email submission. The assignment will be graded within 2 weeks (14 calendar days) of the late submission date and have a recorded grade of 0 **until the last week of the semester**. **After all other assignments for the semester have been submitted on time in the proper format**, the student's grade for the late assignment will be updated to reflect the earned points during the last week of the semester.
6. The student is encouraged to get clarification and assistance with any difficulties related to the assignment. There are several options available to the student (allow 24 hour turnaround for question response during the Monday to Friday week--weekend questions will be responded to during the next scheduled office hour):
   - Blackboard discussion board
   - direct contact with the instructor via e-mail or scheduled meeting during office hours

Grading Policy: Discussion Board Posts

There are several discussion board posts where students will further research some course concepts and report their results via a graded discussion board post. Follow posting instructions to maximize potential points. **Once the due date has passed, the submission link is removed from Blackboard and the post can no longer be submitted through Blackboard for class credit.**

Grading Policy: Quizzes

Each topic contains a quiz. To achieve the maximum points for any topic quiz, the following guidelines should be applied:

1. **Allow yourself enough time to complete the quiz in one sitting by the due date/time.** Quizzes should be **completed within the designated time limits** and **submitted by the due date/time**. Completion times **greater than 5 minutes** over the designated time limit will have points deducted from the final score (i.e. **10% of total possible quiz points for each 5 minute overage**). Quizzes **submitted more than 5 minutes after the due date/time** will have points deducted from the final score (i.e. **10% of total possible quiz points for each 5 minute overage**).
2. Click the "**Save**" button periodically to save your responses should you accidentally disconnect from Blackboard. This will allow some of your answers to be recorded.
3. The quiz clock runs from the time you first select "**Start**" to the time you click "**Submit**", regardless of whether the quiz is visible in your Browser. This implies that the **quiz clock does not stop running** if you decide to quit and come back later to complete the quiz.
4. Click the "**Submit**" button when you have completed the quiz. **Quiz submission links on Blackboard are visible only until their due dates. Once the due date/time has passed, the quiz submission link is removed from Blackboard and the quiz can no longer be submitted through Blackboard for class credit.**
5. Review additional recommendations found in "Tips for Taken an Exam" (http://www.cod.edu/it/blackboard/TipsforExams.html).

Grading Policy: Points and Final Grade

Points are distributed in the following manner:

Category	Possible
Lab Assignments	515
DB Postings	135
Quizzes	350
Total	**1000**

*The total possible course points for students in each category (and reflected on Blackboard) **may be** greater than listed above. Each student's calculated grade will be evaluated using the above possible total points. Any additional (i.e. above the possible in each category) points earned by the student will count towards overall extra credit in the course.*

Final Grades are earned using the following scale:

Accumulated Points	Grade	Percentage
900 – 1000	A	>= 90
800 – 899.9	B	80 – 89
700 – 799.9	C	70 – 79
600 – 699.9	D	60 – 69
599.9 or lower	F	< 60

Satisfactory/Fail/Incomplete

No Satisfactory/Fail/Incompletes will be given in this course.

The College policy on Satisfactory/Fail (S/F) Grade Option can be found in the College catalog under Academic Policies and Procedures, Earning College Credit:

https://catalog.cod.edu/academic-policies-procedures/

Student E-mail Accounts

Much of the correspondence for this course will occur via discussion boards, announcements, and file uploads. However, all COD students are issued a myACCESS user id that gives access to a variety of college information services. If you have not used myACCESS before, use the following link to get more information about myACCESS and Student Planning:

https://www.cod.edu/registration/myaccess-student-planning.aspx

The following site provides access to a variety of resources on how to get started using Student e-mail.

https://www.cod.edu/student_life/resources/information_technology/email/email_guide.aspx

The student is responsible for periodically monitoring their COD student e-mail account for any course related and/or official communication from the instructor.

Student Responsibilities

This course involves lecture, reading, online research, discussions, assignments, and quizzes. All courses require a **regular weekly** time commitment from the student in order to be successful. Recommendations estimate that for each credit hour, students should expect to spend an additional 2-3 hours doing homework, readings, and discussions. For example, a 4-credit hour class would require 4 hours of class/lecture time, plus 8-12 hours of study, resulting in **12-16 hours total weekly investment**.

Students experiencing difficulty with course material have the following available options for extra assistance:

- request instructor assistance through email or an appointment during scheduled office hours. Every attempt will be made to answer e-mail on a 24 hour turnaround basis (during the Monday through Friday week; weekend messages will be responded to during the next scheduled office hour). When sending an e-mail please indicate **your name**, in which **course you are currently enrolled**, the problem you are having, and how best to contact you with a resolution.
- utilize assistance and tutoring resources available through the **Institution Page** upon Blackboard login and through the "**Assist**" menu link in Blackboard

Withdrawal Policy

The last day to withdraw from this class is **11/10/2024**. After that date, students may file a Petition for Late Withdrawal through the Registration Office. Petitions for Late Withdrawal will be granted for extenuating circumstances only, including student illness, death in the immediate family, family emergencies, call to active duty, or other appropriate extenuating circumstances. The student will be required to provide appropriate documentation for all requests for Late Withdrawal. Prior to withdrawing from this class, students are encouraged to speak with the instructor.

The College policy on Withdrawals can be found in the College catalog under Academic Policies and Procedures, Course Withdrawals and Specialized Registration:

https://catalog.cod.edu/academic-policies-procedures/

Finally

Most students sign up for courses with the best intentions; however, circumstances can arise that challenge even the best students. **Successful course completion is a combined effort between instructor and student.** It is **my** personal goal to assist **all** students in learning and practicing course objectives throughout the semester to achieve material comprehension beyond the end of the semester. This is only accomplished with **your** help. If you are having difficulty with the course, the above requirements, or the College, please inform me as soon as possible (**before** a crisis develops) so that we can resolve them in a timely manner beneficial to all persons involved While it may be 'tempting' to acquire problem solutions from an alternate source and submit them as one's own in order to meet assigned due dates, it is not in a student's best interests to do so.

Course Schedule and Due Dates

Important course dates, readings, and the lab/evaluation schedule are listed below. To maximize one's mastery of the course material, textbook readings, video viewings, and online research should be done PRIOR to scheduled sessions and lab/quiz completion. This class progresses at a quick pace in order to cover all the objectives; falling behind in one's course preparation may affect one's comprehension of subsequent topics. For the purpose of maintaining this timely schedule, students experiencing difficulty with any topics should contact the instructor for additional assistance. Any revisions to the following schedule will be announced in class and posted on Blackboard.

To ensure successful course completion in a timely manner, various deadlines have been set. The deadlines set forth below are **firm deadlines,** which will not be extended *except for the* ***one time late lab submission*** *option as outlined under* ***Grading Policy: Lab Assignments***. **The deadline time for each listed day is 11:30pm.**

Use the Blackboard "**Course Material**" menu item to access the individual topics. ***Most*** components of a topic are available on the first day of the semester; however, **Discussion Board Postings, Assignments, and Quizzes are available only until their listed Due Dates. Once the due date/time has passed, the submission links are removed from Blackboard and the postings/assignments/quizzes can no longer be submitted through Blackboard for class credit.**

The wise student will complete Discussion Board posts, submit Assignments, and complete Quizzes earlier than their due dates. All grading for Discussion Board posts, Assignments, and Quizzes will commence **after** the assigned due dates. **A minimum of two week turnaround for grading of Discussion Board posts, Assignments, and Quizzes can be expected.**

Week	Topic/Textbook Chapters	DB Post Due Date (11:30pm)		Assignment Due Date (11:30pm)	Quiz Due Date (11:30pm)
1	**Course Introduction** **Topic 1 – Computers and Programming** Ch 1 – Introduction to Computers and Programming	Thu, Aug 22, 2024		Fri, Aug 23, 2024	Sat, Aug 24, 2024
2	**Topic 2 – Simple Data Types and the Sequential Control Structure** Ch 2 – Input, Processing, and Output	Thu, Aug 29, 2024		Fri, Aug 30, 2024	Sat, Aug 31, 2024
3-4	**Topic 3 – Selection Logic** *(2 weeks)* Ch 3 – Decision Structures and Boolean Logic	Wed, Sep 11, 2024 (Design)	Thu, Sep 12, 2024 (Review)	Fri, Sep 13, 2024	Sat, Sep 14, 2024

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Week	Topic/Textbook Chapters	DB Post Due Date (11:30pm)		Assignment Due Date (11:30pm)	Quiz Due Date (11:30pm)
5	**Topic 4 – Repetition Logic** Ch 4 – Repetition Structures	Wed, Sep 18, 2024 (Design)	Thu, Sep 19, 2024 (Review)	Fri, Sep 20, 2024	Sat, Sep 21, 2024
6-7	**Topic 5 – Understanding Modules** *(2 weeks)* Ch 5 – Modules			Fri, Oct 4, 2024	Sat, Oct 5, 2024
8	**Topic 6 – Understanding Functions** Ch 6 – Functions Ch 7 – Input Validation			Fri, Oct 11, 2024	Sat, Oct 12, 2024
9-10	**Topic 7 – Arrays** *(2 weeks)* Ch 8 – Arrays Ch 12 – Text Processing	Thu, Oct 24, 2024		Fri, Oct 25, 2024	Sat, Oct 26, 2024
11	**Topic 8 – Data Files** Ch 10 -- Files			Fri, Nov 1, 2024	Sat, Nov 2, 2024
12	**Topic 9 – Algorithms** Ch 9 – Sorting and Searching Arrays			Fri, Nov 8, 2024	Sat, Nov 9, 2024
	Last Day to Withdraw From Class	Sunday, Nov 10, 2024			
13-14	**Topic 10 – Object-Oriented Programming** *(2 weeks)* Ch 14 – Object-Oriented Programming			Fri, Nov 22, 2024	Sat, Nov 23, 2024
15-16	**Topic 11 – GUI and Event Driven Programming** *(2 weeks)* Ch 15 – GUI Applications and Event-Driven Programming			Fri, Dec 6, 2024	Sat, Dec 7, 2024
17	Course Final Summary and Feedback	Dec 13, 2024			