Course	ESE 124
Title	Computer Techniques for Electronic Design (Programming Fundamentals)
Credits	3
Course Coordinator	Dr. Alex Doboli (Light Engineering 241; Email: alex.doboli@stonybrook.edu) Office Hours: Wed 1-3PM
Description	The course presents fundamental and more advanced C programming concepts. Lectures discuss the C language constructs and exemplify their using in relevant programming applications. The course also introduces fundamental concepts in electrical and computer engineering, such as bitwise operations, text file scanning, stack-based computation, table-based finite state machine implementation, hash tables, and linked lists. Scheduled lab activities focus on devising, implementing, debugging, and validating C programs for the concepts discussed in class. A course project focuses on an developing a more extensive C program that comprehensively utilizes the programming concepts discussed during the semester.
Prerequisite	Major or AOI
Course Outcomes	- An ability to develop algorithmic solutions for fundamental computing problems - An ability to develop C programs for fundamental algorithms - An ability to debug, test and validate C programs - An ability to effectively document C programs
Textbook	A. Hilton, A. Bracy, "All of Programming", 2015, ISBN: 9780996718202
Major Topics Covered in Course	1. Demo C program for simple calculator, #include, constants (#define, const), variables, keywords, simple operators, expressions, functions 2. Basic types (char, bool, int, short, long, float, double), more on operators, logic operators, bitwise operators (**Program: simple programs to illustrate bitwise operations**) 3. Conditionals (if, switch), loops (for, while, do, break, continue) 4. Loops (**Program: using loops and conditionals to build a scanner**) 5. Structured types (struct, union), type definitions (typedef) 6. Arrays, strings (**Program: number sorting**) 7. Abstract data types (*.h, *.c files) (**Program: stack abstract data type**) 8. Pointers, pointer arithmetic 9. Functions, variable scopes (**Program: table-based FSM implementation**) 10. Pointers, pointer arithmetic, dynamic memory allocation

	11. Linked lists (**Program: linked lists**) 12. Linked lists 13. Multiple-linked lists 14. Overview
Course Webpage	

Grading: Midterm exam (30%), Final exam (40%), Weekly home works (15%), Course project (15%)

Extra credit: 5% extra credit can be assigned by the instructor based on in-class participation using Turning Point Clicker system.

Instructional/Student Responsibilities: the University Senate's Undergraduate Council updated the University's statement of Minimal Instruction and Student Responsibilities in Fall 2008. Please review it carefully. Also listed are the Minimal Undergraduate Student Responsibilities. You may wish to copy these for your classes or direct students to the website. Both statements may be found in the Academic Policies and Regulations section of the on-line Undergraduate Bulletin: http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/policies_expectations/min_instructional_student_resp.php

Student Accessibility Support Services (SASC) - Disability Support Services (DSS) is now known as**Student Accessibility Support Services (SASC).** At the end of this email are two new very important SASC policies.   Please take the time to review them as they directly impact how faculty will interact with this important office going forward.

Accessibility of Course Content: It is important for all students to have equal access to course materials at all times. For this reason, when your pedagogy includes videos or audio, captions or a transcript **must be made available** at the same time the media is posted. To insure access for students with print disabilities, electronic documents should be created following accessibility best practices. At a minimum, PDF and PowerPoint materials should also be posted as a Word Document. The National Center on Disability and Access to Education (NCDAE), has posted '*Cheatsheets'* detailing common accessibility best practices to enable the creation of accessible PDF, word, PowerPoint and web materials (including how to caption YouTube videos) at: http://ncdae.org/resources/cheatsheets

If you have questions regarding how to make your course content accessible please contact**Student Accessibility Support Services (SASC)** for assistance. (2-6748 or sasc@stonybrook.edu)

All requests for a disability related accommodation must originate with SASC. If a student directly approaches you for a disability related accommodation and you have not received a letter from SASC, please inform the student to contact SASC using the information provided on your syllabus. You should not accept any disability related documentation from the student.

Student Participation in University-Sponsored Activities: Students may be required to miss class as a result of their participation in an event or activity sponsored by the University. Please see the on-line Undergraduate Bulletin for the policy regulating the accommodations that should be made for these students: https://www.stonybrook.edu/sb/bulletin/current/policiesandregulations/policies_expectations/participation_univsponsered_activities.php

Withdrawals from Classes: The academic calendar, published in the Undergraduate Class Schedule, lists various dates that students must follow. Only the Arts and Sciences Committee on Academic Standing and Appeals or the Engineering and Applied Sciences Committee on Academic Standing may grant permission for a student to withdraw from a course after the deadline. The same is true of withdrawals that will result in an academic under-load. A note from the instructor is not sufficient to secure a withdrawal from a course in the above circumstances.

Exceptions to University and College Graduation Requirements: Neither individual faculty members nor departments may grant waivers or substitutions for general education requirements or any other College-wide or University-wide requirements. Students should be directed to the Division of Undergraduate Education or the CEAS Undergraduate Student Office for information about the process for requesting an exception.

Family Education Rights and Privacy Act (FERPA): Stony Brook University maintains various student records to document academic progress as well as to record interactions with University staff and officials. To protect the student's rights to privacy, and to conform to federal and State laws the University has an established policy for handling students' records.

With very limited exceptions, student information must not be transmitted by any University employee to anyone outside the University without the express written release by the student or pursuant to a lawfully executed subpoena/order, coordinated by the Office of University Counsel.

Please refer to the following campus website for guidance with laws regulating confidentiality of student records and dissemination of other student personal and academic information:

http://www.stonybrook.edu/commcms/registrar/policies/ferpa.php

Please note that without a signed FERPA release faculty cannot discuss a student with his/her parents under any circumstances.

Learning Objectives: It is expected that all course syllabi will contain measurable learning objectives. This is always good pedagogical practice and a University requirement.

Posting of Course Syllabi: All course syllabi should be available to students as early as possible for the upcoming semester, but definitely must available before the first day of class. We ask that you **post your course syllabi in the Syllabus area** of your Blackboard courses prior to the start of the upcoming semester.

CELT will then collect these from Blackboard and place them into Classie (which is password protected) to provide students the ability to review course syllabi and the course requirements prior to the start of the semester and provide a central repository for syllabi in the event of a campus or national emergency.

If you have concerns about your syllabi being collected and posted on this site, please reach out to our staff for assistance at CELT@stonybrook.edu.

Stony Brook Curriculum: All First Time Full Time and transfer students are following the Stony Brook Curriculum to satisfy their general education requirements. For additional information please

see: http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/categoriesandlearningoutcomes.php

Continuing students who followed the DEC at their point of matriculation will continue to do so until they graduate.

Religious Holiday Statement: All faculty should be familiar with the Religious Holiday Statement and Academic Calendar found on the Office of the Provost Homepage:

http://www.stonybrook.edu/commcms/provost/faculty/handbook/employment/religious_holidays_policy.php

The Academic Calendar can also be found on the Registrar's website:

https://www.stonybrook.edu/commcms/registrar/calendars/academic_calendars

It is important that you respond appropriately to all student requests for accommodation. A good practice is to remind students at the beginning of the course that they should notify you of all potential conflicts prior to the end of the add/drop period.

Responding to Student Disruptions in the Classroom: Faculty should be aware of the policies related to student disruptions in the classroom. You can find this information at the following link:

http://www.stonybrook.edu/commcms/studentaffairs/ucs/policies/disruption

Please be advised that Dr. Julian Pessier, Director, University Counseling and Psychological Services and I are available to meet with you and your department to discuss this or related matters of concern.

Critical Incident Management: Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

Student Success Resources: One concern often expressed by faculty is not being sure where to refer students who need assistance. A helpful resource is the "For Students" section linked from the Stony Brook homepage:

http://www.stonybrook.edu/for-students as well as the Division of Undergraduate Education website:

http://www.stonybrook.edu/commcms/due/index.html

Please share this information with colleagues and students.

Academic Success and Tutoring Center: This important program opened in September 2013. Please be sure that your students are aware of the available services. Information can be found at: http://www.stonybrook.edu/commcms/academic_success/

Required Syllabi Statements: The University Senate has authorized that the following required statements appear in all teaching syllabi on the Stony Brook Campus. This information is also located on the Provost's http://www.stonybrook.edu/commcms/provost/faculty/handbook/academic_policies/syllabus_statement.php

Americans with Disabilities Act/Student Accessibility Support Center Statement:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations, If any, are necessary and appropriate. All information and documentation is confidential.

https://www.stonybrook.edu/commcms/studentaffairs/sasc/current_students/accommodation.php

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Student Accessibility Support Center. For procedures and information go to the following website:

https://ehs.stonybrook.edu//programs/fire-safety/emergency-evacuation/evacuation-guide-people-physical-disabilities

Academic Integrity: Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at:

https://www.stonybrook.edu/commcms/academic_integrity/