**Instructor Information**

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| Instructor: | Mike McMillan |
| Office: | IT 306i |
| Mailbox: | BTC 312 |
| Hours: | By appointment |
| Phone: | 501-812-2372 |
| Email: | mmcmillan@uaptc.edu |
| **\*All emails and telephone calls will receive a response within two business days.** | |

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| Chair: | April Hearne | 501-812-2843 | ahearne@uaptc.edu |
| Dean: | Angela Kremers | 501-812-2200 | akremers@uaptc.edu |
| \*If your emails and telephone calls do not receive a response within two business days, the appropriate chain of command is above. | | | |

**Course Information**

This course section meets on online.

**Catalog Description**

This course is a systematic study of the main data structures and algorithms of computer science – stacks, arrays, queues, linked lists, trees, graphs and hash tables. The implementation and analysis of the algorithms and programming techniques for sorting, searching, and performing other operations on these data structures, along with the efficiency of these operations, is emphasized.

**Course Materials**

There will be no primary textbook for the course this semester. I will be providing links to different readings and web sites, as well as supplying supplementary notes and tutorial web sites. Of course, you will need a C++ compiler of your choosing. I will also be demonstrating code using a C++ interpreter I've recently discovered.

**Mission Statement**

University of Arkansas – Pulaski Technical College provides access to high-quality education that promotes student learning and enables individuals to develop to their fullest potential.

**Institutional Learning Outcomes and General Education**

UA-PTC supports a college-wide institutional learning assessment program which concerns effective instructional methods and promotes student learning achievement by assessing:

1. Communication

2. Critical Thinking

3. Cultural Awareness

4. Information Literacy

5. Professionalism

6. Quantitative Literacy

7. Technology Literacy

For more information, please consult the following website: <https://uaptc.edu/sla>

**Department / Program Learning Outcomes**

1. Apply algorithmic, mathematical and scientific reasoning to a variety of computational problems
2. Design, correctly implement and document solutions to significant computational problems
3. Analyze and compare alternative solutions to computing problems
4. Implement software systems that meet specified design and performance requirements

**Student Learning / Course Outcomes**

Students completing this course will:

1. Be familiar with basic techniques of algorithm analysis
2. Master the implementation of linked data structures such as linked lists and binary trees
3. Be familiar with advanced data structures such as balanced search trees, hash tables, priority queues, and dictionaries/maps
4. Be familiar with several sub-quadratic sorting algorithms including quicksort, mergesort and heapsort
5. Be familiar with some graph algorithms such as shortest path and minimum spanning tree
6. Master the standard data structure library of a major programming language (e.g. Standard Template Library)
7. Master analyzing problems and writing program solutions to problems using the above techniques

**Policies**

**Report a Complaint or Concern**

UA-PTC takes very seriously complaints and concerns regarding the institution. Most complaints or concerns of a specific nature should be initiated and resolved at the campus level through normal college processes whenever possible. UA - Pulaski Technical College receives and resolves complaints using a variety of methods. To report a complaint or concern, please follow the link below.

https://www.uaptc.edu/report-a-concern-complaint

**UA-PTC Attendance Policy**

Education at UA-PTC requires students’ active involvement in the learning process. Thus, students are expected to attend all classes and actively engage in all learning assignments and/or opportunities provided in their classes. Class attendance should be treated as mandatory by all students as attendance will be taken by all instructors during the first two weeks of class. Additionally, a written policy on student attendance that is tied to course objectives and included in a course syllabus will be provided for each course by instructors.

**Departmental Attendance Policy**

Students should expect to log into the course website (via Blackboard) several times per week. Failure to log into the course at least once per week could lead to administrative withdrawal.

**Course Policies**

The UA-PTC Catalog rules and regulations will be enforced in this course at all times.

Please consult the following website for more information:

Professional behavior is required. Punctual attendance and intelligent participation are expected. Particulars as determined by the instructor are detailed in the paragraph below.

Appropriate behavior is expected for all communications, including any notes, email messages, or telephone conversations. Some guidelines for communication are included in this syllabus to help you.

**Grading Policy**

Letter grades will be based on the following scale:

|  |  |
| --- | --- |
| 90 to 100% | A |
| 80 to 89% | B |
| 70 to 79% | C |
| 60 to 69% | D |
| 0 to 59% | F |

Your course grade will be made up of weekly homework assignments (25 points each) and several projects spread out over the semester.

**Homework that is more than one week late will not be accepted. Your two lowest homework grades will be dropped when calculating your final grade. Tests, of course, cannot be late at all.**

\* Instructors have one week to provide feedback and post grades for all assignments unless otherwise noted by a departmental policy that has been approved by the Dean of the School.

In an online class, eligibility for Financial Aid is based on student participation. Logging into the course does not constitute participation. For purposes of roster certification, students must complete a gradable attendance artifact.

Please do your own work in this course. Copying other people's work or having someone do your work for you only hurts you. If I discover you are using someone else's work, I will give you a 0 for the assignment/exam/project. If it happens a second time, I will give you a F for the course.

**Academic Integrity**

It is expected that all students who attend UA-PTC conduct themselves in a manner appropriate for the college experience. Academic integrity is a vital component of collegiate behavior. The UA-PTC catalogue states, “The gaining of knowledge and the practice of honesty go hand-in-hand.”

The catalogue also states, “The responsibility and authority of initiating discipline arising from violations of the rules against dishonesty during the process of the course are vested in the instructor of that course.”

The complete Academic Integrity Policy is in the UA-PTC code of conduct.

**Accommodation Policy**

Services for Students with Disabilities: UA-PTC is committed to fulfilling all federal requirements as stated in the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and the American with Disabilities Amendments Act (ADAAA) of 2008. Accommodations are available to students who have documented disabilities. Students who request accommodations must register with the Disability Services Office (Main Campus: 501-812-2738 or South Campus: 501-812-2862) and must provide current and relevant documentation.

Students requesting accommodations should inform the instructor at the beginning of the course or as soon as accommodations are approved. It is the student's responsibility to provide their Accommodation Letter to the instructor. Accommodations are not retroactive and will only be provided once your instructor receives the Accommodation Letter.

**Student Code of Conduct**

All students are expected to abide by the UA-PTC Student Code of Conduct. For the full Student Code of Conduct, access the most current version of the UA-PTC Academic Catalog.

<http://uaptc.azurewebsites.net/docs/default-source/course-catalog/2017-18-academic-catalog.pdf?sfvrsn=a08a3038_2>

**Sexual Misconduct**

No person at Pulaski Technical College will, on the basis of gender, be excluded from participation in, be denied benefits of, or be subjected to sex discrimination, sexual harassment or sexual misconduct under any education program or activity. All college administrative policies and procedures regarding sex discrimination, sexual harassment, and sexual misconduct are in compliance with Title IX. Students who feel they are victims of sexual misconduct should contact the UA-PTC Title IX Deputy Coordinator for Students:

Michelle Anderson, Director of Student Life and Leadership

Campus Center Building Room 216

501-812-2756

manderson@uaptc.edu

**Course Evaluations**

Students may be asked to evaluate their instructor and course near the end of the semester. These student evaluations are very important to the improvement in the quality of instruction and course materials. All results are anonymous and shared with the faculty only after the semester is over and grades have been posted.

**Information Literacy**

UA-PTC is committed to the Information Literacy Competency Standards for Higher Education as established by the Association of College and Research Libraries and endorsed by the National Forum on Information Literacy. Therefore, all courses will incorporate an information literacy component so that, by graduation, all students will be able to recognize the need for information, then locate, evaluate, synthesize, and communicate information in an ethical manner. Information literacy encompasses critical thinking, research, media, technology, health, business, and visual literacy skills to produce lifelong learners who can make informed decisions in the workplace and in their personal lives.

**Tentative Course Schedule**

Week 1: Overview of course

Week 2: Review of arrays and vectors

Week 3: Lists

Week 4: Stacks

Week 5: Queues

Week 6: Linked Lists

Week 7: Trees

Week 8: Dictionaries

Week 9: Heaps

Week 10: Spring Break

Week 11: Algorithms

Week 12: STL Algorithms

Week 13: More STL Algorithms

Week 14: Graphs

Week 15: More Graphs

Week 16: Finals

**Final Exam Schedule:** See Finals Schedule on UAPTC web site..

Disclaimer: This schedule is a guide for the semester. The instructor reserves the right to amend the schedule as necessary.

**Course Agreement Form**

Read, complete, and return to instructor:

I have read the course syllabus for *[insert instructor’s name and course name here]* John Smith’s English Composition I class at Pulaski Technical College, and I understand its content. I also understand the rules for the class, and I will follow and abide by these rules, including those relating to attendance, assignments, grading criteria, plagiarism, and behavior.

Semester

Date

Print name

Signature

UA-UA-PTC Email address

Telephone