



ITDEV-154-500

Class Dates: September 3, 2020 - December 17, 2020

Semester FA 2021

Virtual

INSTRUCTOR INFORMATION

Instructor: Mark Cribb

Office: Virtual

Office Hours:

Monday 6-8 pm

Wednesday 6-8 pm

Phone: (414) 297-7765

Email: cribbm@matc.edu

COURSE INFORMATION

Course Number: ITDEV-154-500

Course Description: This course focuses on advanced data structures used in Programming. Students will solve problems by using advanced data structures such as trees, queues, stacks, linked lists, and heaps. MATC strongly recommends that students complete ITDEV- 115, or have the equivalent skills, prior to enrollment in this course

Dates: September 3, 2020 - December 17, 2020

Credits: 3

Course Format: Virtual

Pre-requisite Courses: ITDEV-121, ITDEV-140, or ITDEV-185

Location: Virtual via Blackboard Collaborate

Textbook: None required

Supplies:

- Modern Windows or Apple computer
- Internet access
- Web browser such as Google Chrome
- Visual Studio 2017 Community Version or later

Course Outcome Summary: You have the opportunity to learn the following skills in this course:

<https://docs.google.com/document/d/131Yuy7MjBbfBVWi9V5PFru3Qp5aO0KGvBEV9a73GBEo/edit?usp=sharing>

Class Calendar

Topic/Assignment List

<u>Class</u>	<u>Topic</u>	<u>Assignments</u>	<u>Due Date</u>
Week 1	Intro, Syllabus, Tools	Assignment 1	09/13
Week 2	Measuring Algorithm Performance	Assignment 2	09/27
Week 3	Linked List		
Week 4	Linked List	Assignment 3	10/04
Week 5	Stack		
Week 6	Queue	Assignment 4	10/18
Week 7	Recursion		
Week 8	Binary Tree	Assignment 5	11/01
Week 9	Binary Search Tree		
Week 10	Heap	Assignment 6	11/15
Week 11	Sorting		
Week 12	Sorting / Hashing		
Week 13	Hashing	Assignment 7	11/29
Week 14	Review		
Week 15	Final Project		
Week 16	Final Project	Final Project	12/13

NOTE: This schedule is subject to change at my discretion.

COURSE GRADING INFORMATION

Total points for the semester will be accumulated based on assignments, exams, and an individual project. The maximum number of points is 1000. Any extra credit assignments will help the student accumulate total points, but will not be added to the grading scale.

No late assignments will be accepted without instructor permission prior to the due date.

Assignments (700 points)

Students will submit the activities in the Assignments section of the Blackboard classroom.

Assignments will be available in the Assignments section of the Blackboard classroom and are due by the date and time listed on the Class Calendar.

Students can discuss the activities and share answers using the group discussion or chat sessions available in Blackboard, or work with partners and team members, but the work submitted by a student must be their own work. MATC academic policy will be enforced for all work submitted.

Students that have a question about an activity should first attempt to resolve the issue with their partner. Partners that cannot solve an issue should attempt to resolve the issue with their team members. Teams that cannot solve the problem should contact the instructor.

Exams/Quizzes

NA

Projects (300 points)

Final Project: The student will complete Project 1 worth **300 points**. The instructor will provide requirements for Project 1.

All projects must utilize technologies learned in class.

The projects will be available in the Assignments section of the Blackboard classroom and will be due by the date and time listed in the Class Calendar. No late projects will be accepted without instructor permission prior to the due date. The projects may only be submitted in the Assignments section of the Blackboard classroom.

Students are encouraged to discuss issues, questions, and concerns with classmates in the Discussion Board or Classroom.

Participation/Attendance

Due to classroom activities, it is best for students to attend each class period. If a student is unable to attend a class period, the student is responsible for notifying the instructor before missing a class period and obtaining notes from classmates taken during class.

Students are required to participate in class. Programming is only learned by active participation. Class activities are designed to allow the student to develop programming skills while in a collaborative setting. The skills in the activities are associated with current content and are

preparation for completing assignments and exams. If a student does not complete the activity in class, it is highly recommended that students complete the activity outside of class. These activities will not be graded, but not participating in the activities will affect the ability to complete required work.

Grading Scale

The following grading scale will be used to determine the final grade for this course.

Grade Total Points

A	950 – 1000
A-	900 – 949
B+	850 – 899
B	800 – 849
B-	750 – 799
C+	700 – 749
C	650 – 699
D	600 – 649
U	< 600

RESPONSIBILITIES AND POLICIES

Student Rights and Responsibilities

Students are expected to be familiar with MATC policies and procedures.

Student Handbook: <http://www.matc.edu/student/studentlife/codeofconduct.cfm>

Academic Dishonesty

Academic dishonesty includes, but is not limited to, cheating, collaborating with another without the approval of the instructor, plagiarizing, stealing the work of another, falsifying records of work, and assisting another student in any of the above. Academic dishonesty is a violation of the Student Code of Conduct: <http://www.matc.edu/student/studentlife/codeofconduct.cfm> If an instructor believes that an act of academic dishonesty may have occurred, he or she should meet with the student to discuss the alleged conduct (if possible). If the instructor determines that an act of academic dishonesty did occur, the instructor may choose one of the following responses: warn the student of unacceptable behavior, reprimand the student, and issue an alternative assignment/test, reduce the grade for the project or examination, remove the student from the course and submit a Withdrawal ("W"), or assign a failing grade for the course.

- The Student Code of Conduct is the definitive document on student conduct (including academic dishonesty) and the judicial system at any campus. For more information, call 414-297-7859.

Withdrawal Procedures

You may be dropped for absenteeism when:

1. Your consecutive absences exceed one class or the accumulative based on late attendance
2. You fail to meet attendance requirements of licensing agencies.
3. You pose a safety hazard to yourself or others because of missed instruction critical to safe class or lab performance.

4. You are unable to make up instruction missed in a lab/shop class.
5. You have not attended class during the first two weeks of the term.
6. If you have documented health or unusual personal problems affecting your attendance and your instructor agrees that you can make up the work, you may be allowed to continue and may be advised to use MATC support services (e.g., child care, financial aid, counseling, academic support, etc.). However, if your instructor determines you cannot complete the work or you will hinder instruction of other students, you will be withdrawn. To **appeal** you must go to the academic dean and request reinstatement. If you are appealing, you may stay in class until the drop is official, unless your presence may cause a safety hazard to yourself or others.

Course Attendance Policy

Regular attendance is essential to successfully complete this class. If you must miss class for any reason I highly recommend contacting me in advance to discuss. Missing class is certain to negatively impact your overall grade, and will likely cause you to miss crucial class discussions, assignments, etc., so do your best to come to every class period. A class absence is defined as missing more than ½ of a scheduled class period. Three (3) absences and/or (2) consecutive absences are sufficient grounds for instructor-initiated withdrawal from the course.

I expect students to work according to the schedule in the Class Calendar section of the syllabus. Homework, projects and exams must be submitted by the due dates outlined on the Topic/Assignment List included within the syllabus. Any weekly time period without work submitted or access to Blackboard materials will be considered an absence. Any (2) consecutive weeks without work submission is sufficient grounds for instructor withdrawal.

If you are more than 3 homework assignments behind, or if you are not posting to the Discussion Board or sending me e-mail replies for more than 10 days, you may be dropped from the course. You are responsible for completing all course requirements.

You must check your MATC e-mail AND login to Blackboard routinely during the week in order to keep up with the homework and to make sure you receive all class announcements.

How to Succeed in this Course

- Check your MATC email regularly
- Log in to the course web site daily
- Communicate with your instructor
- Create a study schedule so that you don't fall behind on assignment
- Utilize Student Support Services (tutoring, Academic Support Centers, Library)
- Take responsibility for your own learning.
- Be prepared for class and be an enthusiastic participant during class
- Treat others with tolerance and respect
- Act responsibly and reliably in group work
- Set high standards for your work
- Seek help during instructor office hours

Learner (Student) Responsibilities

Instructor Responsibilities

As your instructor, I commit to communicating openly and frequently with you about this class. I will maintain a professional, safe learning environment adhering to the policies of the college.

Blackboard class mail is the primary method of communication. You can expect a reply to communication within 24-48 business hours. I will also be available during my office hours.

Personal Conduct Policy

Please make sure your cell phone is turned off before entering class. Usage in the classroom in any form is prohibited. Class begins promptly at the designated starting time. Lateness to class is disruptive for me and the class and is strongly discouraged. Please make every effort to be on time and ready for class.

I strongly encourage a very participatory environment in the classroom. All questions and comments must be treated with high level of respect. Please do not talk over your peers or your instructor to assure everyone's voice is heard during our discussions.

If you contact the instructor via class mail with a question, you can typically expect a response within 24 hours. All correspondence with your instructor should be professional in nature as this is good practice for the real world. Inappropriate language, tone and format are unacceptable. **Please no "texting" language.**

Academic Support, Tutoring, and NetTutor You are encouraged to take advantage of the [Academic Tutoring Services](#). Traditionally students who utilize these valuable resources are more apt to succeed in their classes.

In addition each MATC student may use 12 free hours per course per semester of tutoring from one of the leading tutoring services in the nation, [NetTutor](#). It allows students to get help 24/7/365.

Non-Academic Student Assistance Any student who faces challenges securing their food or housing or may be facing other life challenges that are negatively impacting their performance in this course is urged to contact a [MATC pathway advisor](#), or the [MATC Student Resource Center](#) to understand whether additional resources, such as food, transportation, counseling, etc., may be available. Also, please notify me if you are comfortable in doing so, and I will help you find additional information or support as appropriate and available.

Technical Support Information (MyMatc, InfOnline, Gmail, and Blackboard)

Computer difficulties are not a long-term excuse for non-participation.

For technical assistance 24 hours a day, 7 days a week, please contact the MATC Help Desk:

Phone: **414-297-6541**

- Monday - Friday, 7:30 a.m. to 7:00 p.m.
- Saturday - Sunday, 8 a.m. to 4 p.m. (Voicemail Attendant Only)

Additional Student Assistance

Any student who faces challenges securing their food or housing or may be facing other life challenges that are negatively impacting their performance in this course is urged to contact a MATC counselor, or the MATC Foundation to understand whether additional resources may be available. A number of community support resources and the Hunger Task Force Food Pantry are located on the 8th Floor of Foundation Hall on the Downtown Campus. Also, please notify your instructor if you are comfortable in doing so to enable him or her to provide additional information or support as appropriate and available.

MyMATC, Blackboard and Email

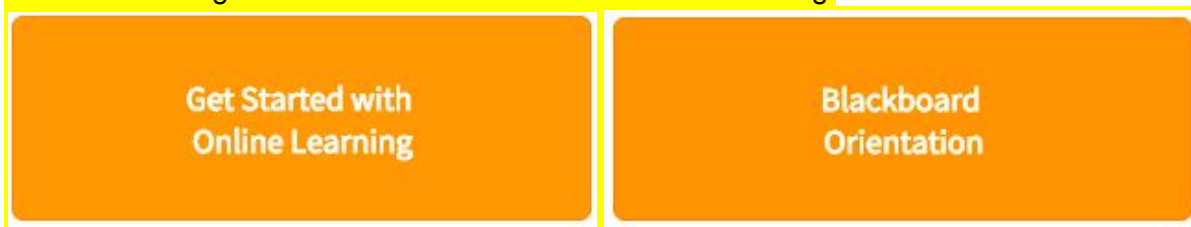
Students log into MATC portal, Blackboard, school email, and campus computers using their MATC network account username and password. Log into the MATC portal: <https://mymatc.matc.edu/> and use the Blackboard module links to view your courses. Student assistance:

http://ecampus.matc.edu/student_support

Online Orientation Students who are good candidates for online or blended learning:

- Demonstrate good time management skills
- Exhibit strong self-discipline
- Are highly communicative
- Are strongly self-motivated to learn
- Demonstrate good critical thinking skills
- Have basic technology skills, including: basic computer navigation skills, word processing skills, online communication skills, and Internet navigation skills.

Click on the images for more Information about Online Learning:



COVID-19 Health and Safety procedure All students must complete [required safety training](#) and [health screening form](#) before returning to campus. You will be required to comply with safety protocols including wearing personal protective equipment (PPE) and maintaining social distancing. Specifically, masks must be worn and the mask must cover both your nose and mouth. Masks will be provided or you can choose to wear your own appropriate mask that complies with the [MATC Student Code of Conduct](#). You will not be permitted to return to campus for your class if you do not take these required steps. Do not return to campus if you feel ill. Contact your instructor prior to the start of class to report your absence.

Grade Appeal The policy can be located [the Student Handbook](#)

Compliments/Complaints procedure I appreciate feedback about what helps you be successful, and the best time to give me that feedback is during the course while I can implement your suggestions. Therefore, if I am doing something that is helpful to your learning, please let me know so that I can keep doing it. In the same way, if you have a suggestion for something that would make your learning experience more positive, I'd like to know that, too. Please feel free to email me or call me. If you are uncomfortable giving me feedback directly or you feel that your concerns have not been addressed, please use [MATC's Complaint/Compliment Process](#) (follow [this advice](#) to see the steps you might want to take before issuing a complaint).

Ombudsperson Services The MATC Office of the Ombudsperson (Ombuds) was established in June 2020. The Ombuds office serves as an informal, neutral, independent and confidential resource that empowers and enables students and student groups to manage through and resolve their college-related issues, conflicts or concerns that may be affecting their student experience. Students interested in exploring an alternative path to solving their problems can contact the MATC's Ombudsperson, Yolanda Hodges by phone at 414-297-6294 or by email at ombuds@matc.edu or you can follow the link below to submit an [Ombuds Inquiry Form](#) and you will be contacted within 48 hours. Click [here](#) to learn more about when you should consider contacting the Ombuds Office.

Grade Appeal Process

Within fifteen (15) business days from the date grades are due (or submitted if done so after the due date), the student shall contact the instructor who issued the final grade and discuss the grade in question. The contact or the discussion should occur or be documented in writing via email. If the student is unable to contact the faculty member, he or she may seek assistance through the instructor's Associate Dean.

If the student and instructor are unable to resolve the dispute, and the student wishes to pursue the matter, he or she shall contact the Associate Dean in writing within five (5) business days of the faculty member's decision. The student must indicate the course number, the instructor's name, and the reasons for disputing the final grade on a Grade Appeal Request form.

The full policy can be located here:

[Academic Grade Appeal](#)

Student Complaint Procedure

MATC has established a formal system to assist students in resolving academic problems and course-related issues. In order for a complaint to be valid, the following 4 steps must be followed in sequence:

Step 1: Meet with the instructor to discuss any questions related to the course (requirements or assignments) or if you are experiencing academic problems. If the issue is unresolved after meeting with the instructor...

Step 2: Meet with the Associate Dean of the department. If the issue is unresolved after meeting with the Associate Dean...

Step 3: Meet with the Dean of the department. If the issue is unresolved after meeting with the Dean...

Step 4: Go to The Office of Student Life for assistance.

Official complaints can be submitted via this link:

<http://www.123contactform.com/form-1441195/Student-Concern-And-Feedback-Form>

If you have college-related concerns or problems – either academic or nonacademic in nature – or have complaints or disputes involving college policies, services, employees, or other students, you are encouraged to utilize the services of the Office of Student Life. This office provides assistance and guidance in resolving issues that are pertinent to you. For assistance, call:

- Milwaukee Campus — 414-297-6229
- North Campus — 262-238-2218
- South Campus — 414-571-4715
- West Campus — 414-456-5304

Syllabus Changes

As your instructor, I retain the right to make changes based on the timeline of the class, feedback from learners and/or logistical issues and will inform you as soon as a change is made.

Incomplete Policy

The incomplete policy in this course is in accordance with the statement in the MATC College Catalog. Incomplete grades are given only with the student is unable to complete the course due to unusual circumstances. It is not intended for the student who merely falls behind in the required work. To be eligible for an incomplete grade the student must be passing with a grade of C or better. An incomplete form must signed one week prior to the end of class and arrangements must be made with the instructor for completion of the course during the following semester. If the remaining course work is not completed during the following semester, the grade becomes a U.

Statement of Non-Discrimination

MATC does not discriminate against any student or applicant for admission on the basis of race, color, sex, pregnancy, political affiliation, source of income, place of business, residence, religion, creed, ethnicity, national origin (including ancestry), citizenship status, physical or mental disability, age, marital status, family responsibilities, sexual orientation, gender, gender identity, veteran or military status (including special disabled veteran, Vietnam-era veteran, or recently separated veteran), predisposing genetic characteristics, domestic violence victim status or any other protected category under applicable local, state or federal law, including protections for those opposing discrimination or participating in any complaint process on campus or externally.

If you believe you have been the subject to unlawful discrimination, or want to report a concern, please speak with your instructor, or complete the online reporting form:

https://cm.maxient.com/reportingform.php?MilwaukeeAreaTC&layout_id=2

Americans with Disabilities Act (ADA) Statement

If you have a disability that impacts your academic performance and wish to request an accommodation, contact Student Accommodation Services

(<http://www.matc.edu/student/resources/needs.cfm>, for details).

They may require documentation regarding your disability to enable them to comply with your request. Admission of a disability is voluntary and will be handled in a confidential manner. MATC does not discriminate against individuals with disabilities and fully complies with the Americans with Disabilities Act. To ensure your academic success in your program, you are strongly encouraged to provide your instructor with a copy of the Instructor Notification Form from Student Accommodation Services.

Title IX Regulations

Title IX is a federal law that prohibits sex discrimination. Sex discrimination includes sexual harassment, sexual violence, and any other sex-based misconduct, relationship violence, discrimination based on pregnancy, and the failure to provide equal opportunity in all areas of schooling such as admissions, educational programs or activities, and athletics.

In accordance with Title IX, any type of sexual discrimination or other unlawful discrimination or harassment is taken seriously and is promptly investigated by the college. Complaints or concerns about sexual discrimination or harassment may be filed through the MATC report form at:

https://cm.maxient.com/reportingform.php?MilwaukeeAreaTC&layout_id=2

In addition, MATC's **Title IX Deputy & Student Complaints Administrator** is available to provide information concerning the college's policies, resources and to discuss concerns related to Equal Opportunity issues, including sexual misconduct or sexual harassment.

Interim MATC **Title IX Deputy & Student Complaints Administrator - Nina Powell**.

Phone: **414-297-6306**

Email: **powelln@matc.edu**

Reports of sexual assault, stalking, domestic abuse and other criminal activity should be made to MATC Public Safety at 414-297-6200.

Title IX also prohibits discrimination on the basis of pregnancy or related conditions. If you need to be absent due to medical conditions relating to pregnancy and maternity leave, such absences will be excused as long as deemed medically necessary by a student's doctor. You will be given the opportunity to make up missed work. Students needing assistance as a result of a pregnancy or related condition must contact the Student Accommodation Services at 414-297-6750.

Emergency/Evacuation Statement

Every Milwaukee Area Technical College building is equipped with a mass notification system that will be used by the Department of Public Safety to provide directions during an emergency. Students can also receive text messages with school closing and other emergency notifications from our RaveAlert system. Sign up at <https://www.getrave.com/login/matc>

All classrooms are equipped with an Emergency Response Guide which provides guidelines for dealing with emergencies. An electronic version of the guide is available at: http://www.matc.edu/public_safety/upload/Emergency_Procedures_Guide.pdf

Students are asked to review these guidelines so they are familiar with emergency procedures. Please notify your instructor during the first week of the semester if you have a condition that may limit or affect your ability to evacuate the classroom/building in an emergency.

Clery Act Compliance

In compliance with the Clery Act, MATC publishes an Annual Security Report, which discloses campus security policies and three years of selected crime statistics. This report is available to all students and hard copies can be obtained from any MATC Public Safety office during normal business hours. An electronic version can be found at: http://www.matc.edu/public_safety/index.cfm?cssearch=580950_1#clery

MATC also publishes a Daily Crime Log which discloses all crimes reported to the Public Safety Department for the past 60 days. This log can be found at: http://www.matc.edu/public_safety/index.cfm#stats

PROGRAM OUTCOMES

Employers will expect program graduates to:

1. Design software systems
2. Develop software applications

MATC CAREER ESSENTIALS

MATC's *Career Essentials* are the formal method to assess career readiness or soft skills. Career Essentials consist of seven (7) competencies that program students are to demonstrate by the time they complete a program. They are listed in the image below.

1	Effective Communication through Speaking and Listening
2	Effective Communication through Writing
3	Mathematical Competency
4	Effective Problem Solving
5	Global Awareness
6	Professionalism
7	Technology Competency

Every program course will include an evaluation of at least one (1) Career Essential, facilitated through Blackboard. The purpose of Career Essentials assessment is to evaluate student soft skills within the context of their program and to provide those results to the students. The results of this assessment will indicate where students are at any point in their progress throughout their time at MATC. Note-Career Essential assessments are not part of your regular grade.

Typically, students complete a Career Essentials Assessment through a familiar assignment submission process in Blackboard. See [these instructions](#).

If you have questions about the Career Essentials competency and assessment in your course, please contact your instructor.

Once an instructor grades a Career Essentials assignment, you will be able to view your results through the My Grades and Goal Performance tools in the course. [See these instructions](#) to learn more.