

# BIG BEND COMMUNITY COLLEGE

## AVIATION

### UNMANNED AERIAL SYSTEMS (UAS) – TECHNICAL MANAGEMENT



Due to the growing use of UAS and sensor technology in such areas as agriculture, entertainment, law enforcement, construction, recreation, wildlife, forestry, search and rescue operations, and independent consulting there is great demand for UAS related certifications.

UAS Technical Management is an Associate Applied Science (AAS) degree that prepares students with the knowledge, skills, and abilities to perform UAS operations.

This degree includes mechatronics and sensor technologies, system troubleshooting, programming, data collection and management, flight operations and mission planning, and the analysis of data and information using global positioning system (GPS) and geographical information system (GIS) tools.

Aside to the UAS degree, students may also earn a stackable Mechatronics Certificate of Achievement as they progress through the program and into the workforce or onto a university.

#### ENTRY REQUIREMENTS

- |  |   |
|--|---|
| <input type="checkbox"/> Complete Admissions and Placement processes | <input type="checkbox"/> Meet with UMS advisor prior to enrolling |
|--|---|

#### CREDENTIAL REQUIREMENTS

##### Mechatronics Certificate Requirements ( 49 Credits )

- |  |  |
|--|--|
| <input type="checkbox"/> ENGL& 101 - Composition I (5)<br><input type="checkbox"/> CMST& 220 – Public Speaking (5)<br><input type="checkbox"/> MAP 119 – Applied Math for Workforce Programs (5)<br><input type="checkbox"/> PSYC& 100 – General Psychology (5) or<br><input type="checkbox"/> SOC& 101 – Introduction to Sociology (5)<br><input type="checkbox"/> FAD 150 – Industrial First Aid and CPR (2) | <input type="checkbox"/> UMS 101 – Intro to Unmanned Aerial Systems (5)<br><input type="checkbox"/> MCT 101 – Mechatronics I (5)<br><input type="checkbox"/> MCT 102 – Mechatronics II (5)<br><input type="checkbox"/> MCT 103 – Mechatronics III (5)<br><input type="checkbox"/> MCT 120 – Robotics I (5)<br><input type="checkbox"/> MCT 129 – Independent Project (2-5) |
|--|--|

##### Degree Requirements ( in addition to certificate courses )

- |  |   |
|--|---|
| <input type="checkbox"/> CS& 131 – Programming C++ (5)<br><input type="checkbox"/> MATH& 141 – Pre-calculus I (5)<br><input type="checkbox"/> PHYS& 110 – Physics for Non-Science Majors (5)<br>or<br><input type="checkbox"/> PHYS& 114 – General Physics I (5) | <input type="checkbox"/> GIS 110 – Geographical Info Systems I (4)<br><input type="checkbox"/> GIS 210 – Geographical Info Systems II (3)<br><input type="checkbox"/> GIS 220 – Remote Sensing (3)<br><input type="checkbox"/> MCT 220 – Robotics II (5)<br><input type="checkbox"/> UMS 220 – Beyond Line of Sight (BLOS) Operations (3) |
|--|---|

##### Degree Electives ( minimum 10 credits )

- |   |  |
|---|--|
| <input type="checkbox"/> MCT 110 – Intro to Mechatronic Applications (3)<br><input type="checkbox"/> UMS 107 – Commercial Remote Pilot Certification (2)<br><input type="checkbox"/> UMS 142 – UAS Flight Lab (5) | <input type="checkbox"/> UMS 226 – UAS Remote Sensing Systems (5)<br><input type="checkbox"/> UMS 229 – Independent Project (2-5)<br><input type="checkbox"/> Advisor Approved Electives |
|---|--|

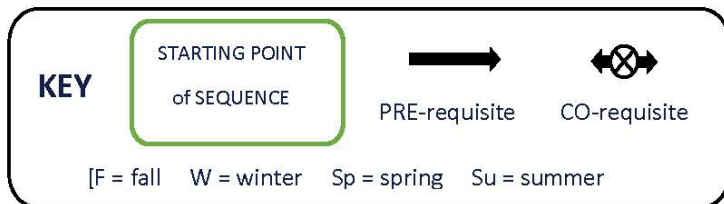
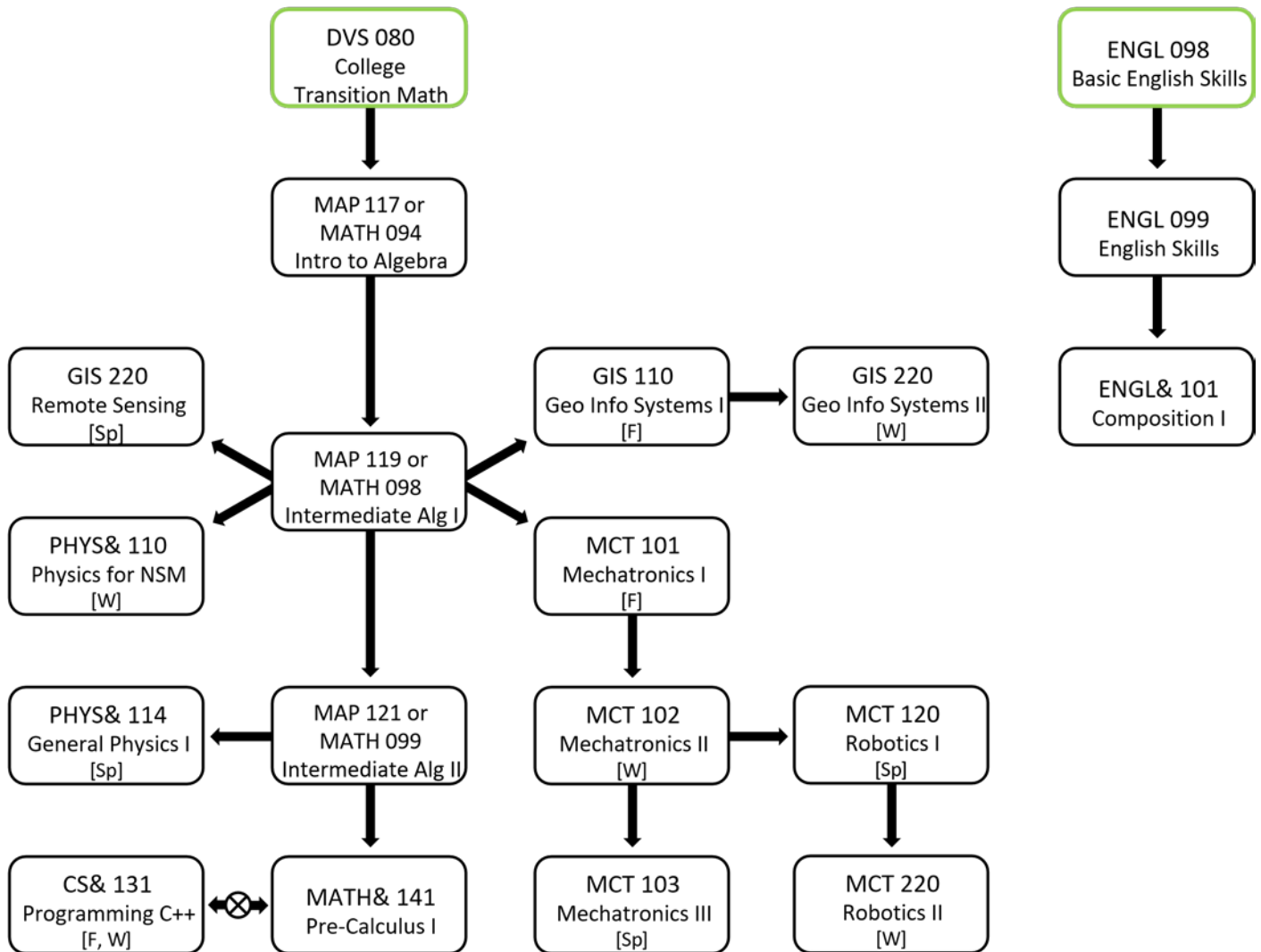
**90 TOTAL DEGREE CREDITS**

NAME:

SID:

## UAS TECHNICAL MANAGEMENT PRE-REQUISITE FLOW CHART

Start by talking with your assigned advisor to determine which courses to take first based on your placement scores.



- Program Courses WITHOUT PRE-requisites**

Required Courses

  - CMST& 220 – Public Speaking
  - FAD 150 – Industrial First Aid & CPR
  - PSYC& 100 – General Psychology
  - SOC& 101 – Intro to Sociology
  - UMS 101 – Intro to Unmanned Systems

Elective or Recommended Courses

  - UMS 107 – Commercial Remote Pilot Cert

**UAS TECH MANAGEMENT QUARTERLY PROGRAM PLAN FOR AAS-T DEGREE (YEAR ONE)**

**FALL (17 Credits)**

**WINTER (15 Credits)**

**SPRING 17 Credits)**

FAD 150 (2)  
 MAP 119-121/MATH 098-099 (5)  
 MCT 101 95)  
 UMS 101 (5)

ENGL&101 (5)  
 MATH& 141 (5)  
 MCT 201 (5)

Elective credits (5)  
 MCT 103 (5)  
 MCT 120 (5)  
 MCT 129 (2)

**ADVISING**

**FALL**

**WINTER**

**SPRING**

- BCC Foundation scholarship app
- Fill out FAFSA or WAFSA for next year
- Meet with your advisor

- Assess program plan with advisor

- Assess program plan with advisor

**QUARTERLY REGISTRATION PLANNING**

QUARTER  FALL  WINTER  SPRING  SUMMER

REGISTRATION CODE \_\_\_\_\_

CLASS	TITLE	CREDITS	DAYS	TIME	ITEM #

**QUARTERLY REGISTRATION PLANNING**

QUARTER  FALL  WINTER  SPRING  SUMMER

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**QUARTERLY REGISTRATION PLANNING**

QUARTER  FALL  WINTER  SPRING  SUMMER

REGISTRATION CODE \_\_\_\_\_

CLASS	TITLE	CREDITS	DAYS	TIME	ITEM #

NAME: \_\_\_\_\_

SID: \_\_\_\_\_

NAME: \_\_\_\_\_

**UAS TECH MANAGEMENT QUARTERLY PROGRAM PLAN (YEAR TWO)**

FALL (14 Credits)	WINTER (11-16 Credits)	SPRING (13-18 Credits)
CS& 131 (5) GIS 110 (4) Elective credits (5)	GIS 210 (3) MCT 220 (5) UMS 220 (3) PHYS& 110 or elective (5)	CMST& 220 (5) GIS 220 (3) PSYC& 100 or SOC& 101 (5) PHYS& 114 or Elective (5)

**ADVISING**

FALL	WINTER	SPRING
<input type="checkbox"/> Explore transfer options/apply <input type="checkbox"/> Access Career Services	<input type="checkbox"/> Assess program plan with advisor <input type="checkbox"/> Apply for BBCC graduation <input type="checkbox"/> Submit scholarship applications if transferring to a university	<input type="checkbox"/> Submit transcripts to university <input type="checkbox"/> Confirm university acceptance <input type="checkbox"/> Finalize professional application materials with Career Services

**QUARTERLY REGISTRATION PLANNING**

QUARTER <input type="checkbox"/> FALL <input type="checkbox"/> WINTER <input type="checkbox"/> SPRING <input type="checkbox"/> SUMMER			REGISTRATION CODE _____		
CLASS	TITLE	CREDITS	DAYS	TIME	ITEM #

**QUARTERLY REGISTRATION PLANNING**

QUARTER <input type="checkbox"/> FALL <input type="checkbox"/> WINTER <input type="checkbox"/> SPRING <input type="checkbox"/> SUMMER			REGISTRATION CODE _____		
CLASS	TITLE	CREDITS	DAYS	TIME	ITEM #

**QUARTERLY REGISTRATION PLANNING**

QUARTER <input type="checkbox"/> FALL <input type="checkbox"/> WINTER <input type="checkbox"/> SPRING <input type="checkbox"/> SUMMER			REGISTRATION CODE _____		
CLASS	TITLE	CREDITS	DAYS	TIME	ITEM #

**QUARTERLY REGISTRATION PLANNING**

QUARTER <input type="checkbox"/> FALL <input type="checkbox"/> WINTER <input type="checkbox"/> SPRING <input type="checkbox"/> SUMMER			REGISTRATION CODE _____		
CLASS	TITLE	CREDITS	DAYS	TIME	ITEM #

SID: \_\_\_\_\_

**Big Bend Community College**  
**WORKFORCE EDUCATION PROGRAM REQUIREMENTS**

NAME: \_\_\_\_\_

**Certificate of Achievement**

Students working toward a Certificate of Achievement need to develop a program plan with the faculty advisor in their Workforce Education area of interest. The plan must include all related instruction components. The Certificate of Achievement is designed to provide recognition for the student who has not completed an Associate in Applied Science degree program.

**Certificate of Accomplishment**

Students working toward a Certificate of Accomplishment need to develop a program plan with the faculty advisor in their Workforce Education area of interest. The Certificate of Achievement is designed to provide recognition for the student who does not complete a Certificate of Achievement or an Associate in Applied Science degree program.

**Changes or substitutions for course work in the college catalog must be listed and approved by the advisor.** It is essential that students meet quarterly with their advisor before registration to review progress and plan their program.

Each program plan must be approved by the Workforce Education program advisor and Dean of Workforce Education. Certificates will be issued out of the Dean of Workforce Education Instructional Services office.

**Certificate of Achievement**      **QTR & YR Completed:** \_\_\_\_\_

**Certificate of Achievement**      **QTR & YR Completed:** \_\_\_\_\_

Title of Certificate: \_\_\_\_\_

SID: \_\_\_\_\_

*Advisor Approval:*

\_\_\_\_\_  
Advisor

\_\_\_\_\_  
Date

*Program Completion Approval:*

\_\_\_\_\_  
Dean of Workforce Education

\_\_\_\_\_  
Date

\_\_\_\_\_  
Instructional Services Office Assistant

\_\_\_\_\_  
Date

NAME: \_\_\_\_\_

SID: \_\_\_\_\_

**Big Bend Community College**  
**WORKFORCE EDUCATION PROGRAM REQUIREMENTS**  
**Associate in Applied Science Degree**

**Credit Requirement:** Completion of the total credit requirements of the approved Workforce Education Program Plan. Minimum of 90 quarter hours. It is the student's responsibility to insure that he/she meets all of the technical and general education degree requirements.

**MATHEMATICS REQUIREMENT:** 3-5 credits\* in mathematics courses as stated in the approved Professional/Technical Program Plan.

BUS 102	Business Mathematics
MAP 100	Applied Mathematics (AMT)*
MAP 101	Applied Mathematics (AUT/WLD)
MAP 103	Applied Mathematics (MMT/LET)
MAP 117	Applied Mathematics for Workforce I
MAP 119	Applied Mathematics for Workforce II
MATH& 107	Math in Society
MATH& 141	Pre-calculus I
MATH& 146	Intro to Statistics
MATH 147	Finite Mathematics
*AMT program requires two MAP 100 credits	

**WRITTEN COMMUNICATIONS REQUIREMENT:** 3-5 credits in written communications courses as stated in the approved Professional/Technical Program Plan.

BUS 121	Business English
ENGL& 101	English Composition I
ENGL 109	Applied Technical Writing

**ORAL COMMUNICATIONS REQUIREMENT:** 3-5 credits in oral communications courses as stated in the approved Professional/Technical Program Plan.

AVE 225	Effective Communications in Flight Instruction
CMST 100	Human communications
CMST& 210	Interpersonal Communications
CMST& 220	Public Speaking

**HUMAN RELATIONS REQUIREMENT:** 3-5 credits in human relations courses as stated in the approved Professional/Technical Program Plan.

BUS 120	Human Relations on the Job
EDUC& 115	Child Development
PSYC& 100	General Psychology
SOC& 101	Intro to Sociology

**INDUSTRIAL FIRST AID REQUIREMENT:** 2 credits in Industrial First Aid or equivalent or higher certification as stated in the approved Professional/Technical Program Plan.

FAD 150	Industrial First Aid and CPR plus Bloodborne Pathogens
Current First Aid/CPR, First Responder, or EMT card	

Student Name \_\_\_\_\_ SID # \_\_\_\_\_

Approval: \_\_\_\_\_

Advisor \_\_\_\_\_ Date \_\_\_\_\_

Program Completion Approval: \_\_\_\_\_

Dean of Workforce Education \_\_\_\_\_ Date \_\_\_\_\_

Each program must be approved by the Workforce Education program advisor. Program changes and substitutions must be approved by the program advisor prior to application for degree.