Course Syllabus
Del Mar College

GUAS 2372/2472

Digital Mapping with UAS, 3-2-4, 80 (UAS 102)
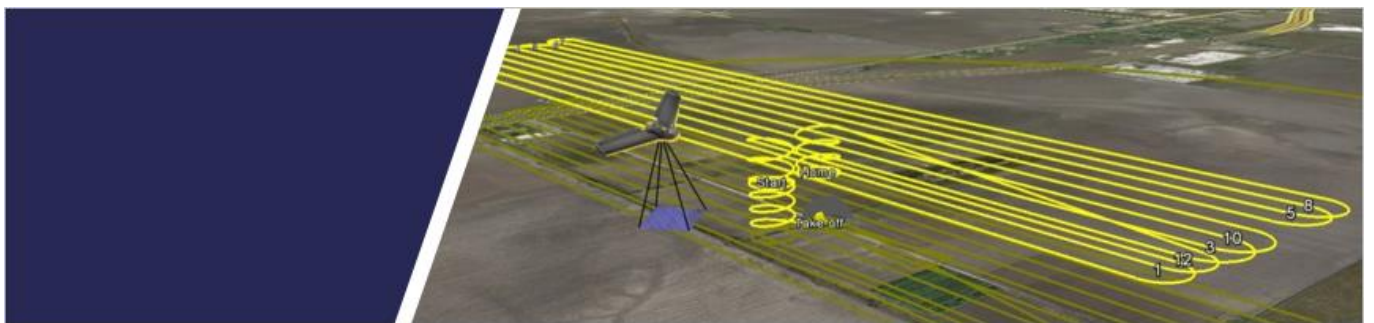
Office Location:

Course Location:

Course section days:

Course section hours:

Office days:

Office hours:

Phone: Office,   **Mobile**

Email:

Skype:

Twitter:

GUAS 2372/2472

Digital Mapping with UAS, 3-2-4, 80

COURSE DESCRIPTION: This course introduces students to the fundamentals of mapping with small Unmanned Aircraft Systems (soaps) using digital imaging sensors to produce high resolution, spatially accurate 2D and 3D geospatial data products. The course will cover the full spectrum of UAS mapping from survey design to data processing to product assessment. Students will learn the principles of UAS data acquisition for photogrammetric purposes including spatial referencing and establishment of ground control. Industry relevant commercial software will be utilized to process image sequences and derive planimetric maps, reflectance products, and 3D models of the terrain. Analysis workflows will be conducted to assess the spatial fidelity of derived data products and optimize results for client needs. Techniques learned in this course can be applied to a variety of geospatial applications and various examples will be presented. This is the second of the four courses required to earn the UAS Marketable Skills Award (MSA).

LEARNING OUTCOMES/COMPETENCIES:

1. The student will be able to design UAS survey missions to collect appropriate spatial and spectral resolution data.
2. The student will demonstrate understanding of spatial accuracy and geoferencing approaches for UAS data.
3. The student will be able to process UAS data to generate geospatial data products such as orthomosaic images, 3D point cloud data, and Digital Surface Model (DSM).

4. The student will be able to analyze the quality of UAS-derived geospatial data products and produce a quality report.
5. The student will be able to adapt processing workflows to improve data quality.
6. The student will be able to synthesize UAS-derived geospatial data products in a GIS to perform 2D and 3D mapping of natural and built environments.

Software, apps and accounts;

- Canvas App
- FAA Account
- FAASafety Team account
- FAA UAV Registration Account
- ESRI Global Account
- ESRI AGOL GeoTech Org Account
- eMotion 3
- Pix4D
- Google Earth pro
- ArcGIS Online Org Account
- ArcMap Desktop Advanced
- Drone 2 Map Org Account
- Zephyr UAS Simulator
- FAA ArcGIS Flight Navigation App
- B4U Fly FAA App
- AR Parrot Free Flight App
- Free Flight Pro
- DJI Flight Plan App
- DJI Follow Me App
- Prepware Remote Pilot app
- Avare App

GENERAL DESCRIPTION OF THE SUBJECT MATTER OF LECTURES OR DISCUSSIONS BY WEEK:

Week 1:	Week2:
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Week 3:	Week 4:
•	•

Week 5:	Week 6:
•	•
Week 7:	**Week 8:**
•	• **TNRIS GIS Forum**
Week 9:	**Week 10:**
• **GIS Day Week**	• **Thanksgiving recess**
Week 11:	**Week 12:**
•	•
Week 13:	**Week 14:**
•	•
Week 15:	Week 16:
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TECHNOLOGY REQUIREMENTS:

- You are required to have high-speed or broadband Internet access.
- Students must have Office 2016 available with Word, Excel, PPT, and Access
- Students are expected to regularly check their DMC email and log into Canvas daily. In addition online resources are available through www.delmar.edu (Links to an external site.)Links to an external site.

METHODS OF EVALUATION:

Assignments: Word, Excel, PowerPoint & Access Documents	65%
Quizzes: Word, Excel, PowerPoint & Access Quizzes	15%

Final Exam – Integrated application hands-on final project (4 parts)	10%
Individual Presentation	5%
Group Presentation	5%
Total	100%

- **Tests:** Students are expected to take their tests during the week the unit is scheduled.
- **Attendance**: Measured by you logging into your online classes three – five times a week**.** All students must submit their work to me within the specified time period. This includes financial aid students waiting for their monies. You can reserve and use class textbooks at the Del Mar Library. There are no acceptable excuses for not submitting your assignments during the allotted time period.
- **Absence:** You will be counted *absent* if you do NOT post to the discussion boards weekly and you fail to submit your assignments for the week. I am here to help you and I will do everything in my power to assist you in getting your assignments submitted. (Always keep your instructor informed). In the event that you are unable to complete the course, you are directed to follow the instructions in the student handbook for a formal withdrawal from class. Check the date for withdrawal with an automatic "W". (SB 1231 Course Drop Limitation for Undergraduates applies.)
- **Makeup/Extra credit work is NOT given**. You must complete your assignments and participate in class discussions. *You will be penalized one letter grade for each day late*.
- **Collaborative Learning and Discussions**. You must participate in collaborative chapter assignments and discussions topics. Active participation in discussion topics account for **10%** of your grade in this class.
- **Due Dates:** All assignments are due weekly on or before Monday at midnight.

EXPECTED CLASS-ROOM ETIQUETTE:

Online-based:

- **Participate**. Post your comments, questions, and answers in the Discussion Boards
- **Ask for Help**. If you have any difficulties, call the Help Desk immediately at 698-2330. Send an email to me, and post your problem on the Discussion Board.
- **Collaborate**. Please share your ideas, questions, help, suggestions, and concerns on the Discussion Board.
- **Be Courteous** – No inappropriate comments or offensive statements

- **Absence.** You will be counted absent if you do NOT post to the current week's discussions and /or fail to submit your assignments for the week.

COLLEGE POLICIES:

- **Incomplete ("I") Grade: will only** be assigned according to the guidelines found in the Del Mar College Catalog and Student Handbook, "Incomplete Grade (I)", page 57. A written agreement between the student and the instructor as outlined in the Student Handbook will be necessary for course completion. This agreement will be completed at a date no later than the last day of the semester in which the student is enrolled for the class.
- **Honesty/Ethics:** Students are expected to maintain the integrity of the College by avoiding dishonesty in their own behavior and by expecting honest behavior from their fellow students. One of the requirements for passing a course is that students do their own work. Meeting this requirement means avoiding plagiarism, collusion, and cheating. See college website and DMC 2010-11 catalog page 56 applies.
- **Student Rights and Responsibilities.** While attending Del Mar College, students have specific responsibilities and rights in this academic society. Likewise, a specific standard of conduct is also expected of our students within this society. For a successful academic experience, students and teachers must have mutual respect for each other. Refer to the Student Handbook, page 89, for addition information and clarification concerning this specific topic.
- **Class Attendance.** Students are responsible for attendance and are advised that excessive absences will adversely affect their grades or their continued enrollment in the course. Regular and punctual call and laboratory attendance is expected of you. A record of attendance will be kept by instructors, beginning the first day of class. If attendance is unsatisfactory, the instructor will request your withdrawal from class. DMC 2010-11 catalog page 60 applies.

DMC Peer Tutoring Program

The DMC Peer Tutoring Program is available to all DMC students at no extra cost. Students can spend as much time as needed with tutors. On average, students that seek tutoring within the first month of the semester have an increased probability of successfully passing their course.

DMC Peer Tutoring Program location: Student Success Center, room SC 111. Summer Hours Open Monday -Thursday 8:00 am - 5:00 pm; Friday 8:00 am - 12:30 pm. Contact Bob Klepac MS IT, Tutor Support Services Coordinator at (361) 698-2267 or Tutor Desk at (361) 698-2259. You can visit our website for live Online Tutoring options and workshops.