



**“The West has always
been a much more
complicated place than
the East.”**
(Bock and Bock 2000)

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Instructor: Dr. Daniel Shustack
Office: 225D F-CSI
Email: Daniel.shustack@mcla.edu
Phone: 413-662-5301
Office Hours: TBA and by appointment

Course Description for catalog: Explores the physical, biological and social environments of the historic and contemporary American Southwest through a case study of southern Arizona. Through multi-day field trip to southern Arizona, students will visit and experience southern Arizona’s topography, weather, natural areas including the Sonoran desert, desert grasslands, riparian woodlands, and high elevation conifer forests. Throughout the course, students will consider how various people groups from the ancient Hohokam, to Spanish conquistadors and friars, to Apache Indians, to U.S. homesteaders and prospectors, to modern-day urbanites and U.S./Mexico border migrants use and survive in this landscape. Due to the nature of this course, all participants should be in good physical condition.

Summary: In southern Arizona, mountains reaching to over 9000 feet punctuate the expanses of the Sonoran desert found at elevations from ~1000-3500 feet. This result is dramatic topography called “sky islands.” These unique landforms, intersecting with the seasonal and elevational patterns of temperature and moisture, allow for a high concentration of species diversity and natural communities normally found over much greater latitudinal ranges. The extremes of the Sonoran desert environment have influenced human use and habitation of this area for 1000s of years. This course will consider how people like the ancient Hohokam, Spanish conquistadors and friars, Apache Indians, U.S. homesteaders and prospectors, and modern-day urbanites and U.S./Mexico border migrants use and survive in this landscape. Major themes covered during this course will include: desert species and adaptations, elevational gradients, fire ecology, mining, human use of this region, Spanish and US history, border issues, urban expansion, federal land management agencies, water use, and others.

Course Objectives:

- a. Understand desert ecology and desert adaptations, including morphological and behavioral adaptations, that species (including humans) have for survival in the desert
- b. Understand and explore the environmental history of the Arizona borderlands
- c. Apply environmental and ecological concepts to examples in southern Arizona
- d. Experience the desert and “sky islands” of southern Arizona

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Relation to ENVI major: This course meets one of the required courses in the ENVI “Society” requirement area. This course will use an environmental history framework to study and understand this landscape. Issues related to the management of this landscape will also be a major components of this course. However, in the process there will still be lots of environmental science, field biology and ecology.

Pre-Requisites: Permission of instructor; ***You must be in good physical condition!*** Students who have taken prior environmental science or ecology courses will get the most out of this course.

Statement on accessibility and physical demands of this course: Participation in this course will be physically demanding and all participants must be in good physical condition to participate. Participants must be able to hike over rough terrain for extended periods of times in potentially high temperature conditions. You will be asked to demonstrate this ability by completing a hike with me up Pine Cobble (Williamstown, MA) sometime this fall. This is a safety issue and is very important! Weather permitting, in Arizona, we may also do some kayaking or canoeing (yes, there is some water in the desert).

Canvas Course Area: Course materials will be available through Canvas. The two required reports and weekly reading assignments should be submitted on Canvas.

Teaching Methods and Course Structure:

Pre-trip meetings: There will be at least **seven** 75 minute required course meetings in advance of the spring break trip. These meetings will be used to provide an introduction to the history and ecology southern Arizona, **discuss course readings**, explain course requirements, and organize gear and prepare the participants for the trip.

Field Trip to Arizona: We will travel with our gear, fly into Tucson (or Phoenix), rent minivans, and drive about exploring the Arizona borderland region for 8-10 days. The participants in the course (limited to a group size of 10) will share activities, experiences and meals together. The days will be long as we fit in as many amazing experiences and site visits as possible. Except for a few visitor centers and museums, most of this trip will occur out-of-doors. Accommodations will be camping each night on public land in developed or primitive campsites. During the trip we will meet with local experts. Each student will give two mini-presentations on their selected course topics. Throughout the course the instructor will provide context and “mini-lectures” to help orient us to each site. Because of the terrain and topography, exploring many of these areas will require a certain level of physical ability.

2018 Travel dates: the trip will be between March 7-20 and will be 8-10 nights, with the trip overlapping 1-3 regular class days before or after spring break (you will have to be excused from other classes on those days). This uncertainty is due to the fluctuating costs of airfare and car rentals. Once participants are confirmed, I will finalize airline schedules that maximize our time in Arizona at the lowest costs. Travel dates will be finalized ~mid Oct 2017, but until then, participants should keep their calendar open between March 7 and 20. As soon as the flights are confirmed I will inform all participants.

Text, Resources and Required materials: Assigned weekly readings will include non-technical overview information of the American Southwest and Arizona in particular. These materials will be provided on Canvas. Students will be required to find their own technical sources for completing their reports.

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Additional course fee: \$1550. If funds remain after the trip, they will be reimbursed to students.

Payments are due to the Bursar's office according to this schedule:

\$300 deposit, due upon acceptance into the course

\$625 due Oct 6, 2017

\$625 due Jan 26, 2018

The deposit will reserve your space and is only refundable until Oct 6th. After Oct 6th, if someone takes your place on the trip, your payments *minus* the costs of any ticketed items (i.e., airplane tickets) with your name on them can be refunded. Otherwise any money paid is not refundable. If *at any point* you decide to cancel your participation, your cancellation must be in writing to Prof. Shustack. You must be enrolled in the course to participate in this class. If you are expelled from the college for spring semester you will not be able to receive a refund for any named-ticketed items. This strict refund policy is one of the ways we are able to keep the cost of this trip as low as they are.

Graded Activities:

Attendance at pre-trip meetings and post-trip debriefing meetings (10%) The meetings prior to the Arizona field trip are essential and mandatory. Participants will receive context and content on our course. We will also organize materials and gear for the trip.

Weekly reading assignments prior to trip (15%) Six required readings (book chapter, website, or articles) will be provided on Canvas. You are required to read and write brief responses to these required readings.

Site theme report (25%) Each student will select one of the sites (or some part of a site) which we will visit during the field trip. Each student should generate a 100-1500 word report that summarizes the importance of this site and describes key features and history of this site. Major themes and lessons learned from this site should also be described. When we reach this site during our field trip, the student will serve as our "expert" by providing an introduction and overview for the site. The student expert will help focus the attention of the other students on key aspects of this site.

Species report (25%) In consultation with the instructor, each student will select one representative plant or animal species of southern Arizona. Students will generate a 1200-1500 word report summarizing relevant biology and ecology of this species. The report should also describe the threats and conservation actions for this species or community. When we encounter this species or community during our field trip, students will give an impromptu lesson to the rest of the group about this species.

Course journal (25%) Journal entries should be copious and frequent, with at least one entry per day of the actual trip. Each daily entry to your journal should contain 5 parts: 1) observations about what you see, experience or read, 2) further questions that come to mind based on your observations, 3) thoughts that relate your observations to prior experience and comparison to Massachusetts, 4) subjective, personal reflections on what you are learning and experiencing, 5) anything else you think is worth writing down! You will be graded based on insightful and meaningful journal entries that clearly demonstrate your processing and learning of concepts and content. You will also be given several directed entries throughout the trip. Journals are due a couple weeks after we return from Arizona.

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Academic Honesty: All aspects of the MCLA honor code apply to this course
(<http://www.mcla.edu/Academics/academicresources/registrar/academicpolicies/>)

Students with Disabilities: If you anticipate anything that would prevent the smoothest possible participation in this course in all its components, please meet with Dan to discuss as soon as you realize this may be an issue.

Late Assignment Policy: Both reports are due one week before we leave for the Arizona field trip. Assignments that are not completed one week in advance of our departure will be reduced by 25%. Reports that are not completed before the trip will be reduced 50%. Journals are due April 1. Your possible score will be reduced 25% for each week your journal is late.

Attendance Policy: All students are expected to participate in all the pre-trip meetings and all activities while in Arizona. If you decide to stay at camp one day you might get left behind as we will be constantly on the move! All students are also expected to participate in all pre-trip meetings.

Communications: Prior to the course travel email is the preferred method of contact with me. You are also welcome to call me at school (413-662-5301 or at home 413-664-6317). While on our trip in Arizona you will be able to personally contact me at any time. Many of the areas we will visit in Arizona will **not** have cell service or wifi, so be prepared for that situation.

Time zone: Also, note that Arizona is in a different time zone and they do not change their clocks for daylight savings time. [In 2018, AZ will be 2 hours ahead until March 11, after which AZ is 3 hours ahead. Keep this in mind for communication with 'home' on the east coast.]

Travel documents: You will need government issued id to board the airplane. If you are not a US citizen, you **MUST** have your passport issued from your nation of citizenship. At times, we will be close-enough to literally toss a stone over the US-Mexico border. US Border Patrol agents are abundant here and Border Patrol checkpoints are common. Border Patrol agents may request documentation at these checkpoints that we will pass through.

Equipment: (We will also thoroughly review packing lists prior to the trip.)
Tent (or space in someone else's; must have rain fly and good staking system)*
Tent pad (recommended for the rough, rocky desert ground)
Sleeping bag (at least a 40 degree bag, but a 25 degree bag recommended just in case of a cold snap)
Sleeping pad (recommended)
Field clothes (field pants that unzip to make shorts are really handy. We will try to make one stop to do laundry during the trip. Detailed clothing list provided later.)
Rain coat
Towel & wash cloth
Sun hat with visor
Winter hat
Sunglasses
Binoculars*
Camera (optional)

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One pair of sneakers

Flip flops (for shower/walking around camp)

Sturdy, high quality, hiking boots with solid tread and ankle support (make sure you have at least 20 hours in these boots! NO, NO, NO, NO **new** boots!)

Two refillable water bottle, 1 liter/quart each.

Day backpack

Head-lamp

Personal toiletries

Government issued id

MCLA student id card

The ENVI Department has tents and binoculars that you can borrow for the trip.
Space will be tight. Please pack your gear in soft baggage.

We will be camping throughout the week. Dinners will be prepared as at camp on camp stoves. During our pre-trip planning meetings we will ensure that all students have the required camping materials. The ENVI program will have some materials for our use including camping stoves, food preparation equipment, coolers, head lamps, first aid kit, etc.

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tentative itinerary (MCLA spring break 2018: March 12-16)			
day	date	location	Topics
Thursday	3/8	Fly to Tucson, AZ night: Tucson Mountain Park	climate, desert wisdom
Friday	3/9	Arizona-Sonoran Desert Museum Saguaro National Park (west) night: Tucson Mountain Park	introduction to desert ecology, spring wildflowers desert adaptations, desert species, geology, National Park history
Saturday	3/10	Sweetwater Wetlands Casa Grande National Historic Site Kitt Peak night: Tucson Mountain Park	urban water, reclamation ancient desert people, petroglyphs, water intensive agriculture astronomy
Sunday	3/11	Cabeza Prieta National Wildlife Refuge Tonono O'odham Indian Reservation Night: Organ Pipe Cactus National Monument	ranching, Sonoran pronghorn, copper mining (Ajo) reservation system, contemporary Indians
Monday	3/12	Organ Pipe Cactus National Monument Quitobaquito Spring (OPCNM) Night: Organ Pipe Cactus National Monument	management in border regions, organ pipe cactus, NPS oases, rare species (pupfish), spring wildflowers
Tuesday	3/13	Asarco Mining Tumacoria National Historic Site Nogales: Primera Alta Museum night hike Night: Lake Patagonia State Park	copper mining, reclamation Spanish history, Anza Trail border town history astronomy, Sonoita Creek Natural Area desert grasslands, desert homesteading
Wednesday	3/14	kayaking on lake Patagonia-Sonoita Creek, TNC Preserve Paton Hummingbird Center Night: Lake Patagonia State Park	birding, water history, hydrology, state conservation land trusts (TNC), water management, riparian communities Tucson Audubon, birds
Thursday	3/15	Audubon Ranch Murry Spring Clovis Site Fort Huachuca Night: Kartcher Caverns State Park	Audubon, grazing, history of ranching prehistory people/climate/biogeography military lands
Friday	3/16	Cave Tour Agua Caliente Night: Molina Basin, Mt Lemmon	cave geology springs, Tucson history, ranching history, urban conservation
Saturday	3/17	Catalina Highway, Mt Lemmon Night: Catalina State Park	high elevation communities, sky islands pine-oak woodlands, coniferous forests
Sunday	3/18	fly back to Albany	

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Weather information. Typically, spring is very pleasant in Southern Arizona, also heat waves and cold spells are possible. Dan will provide last minute packing suggestions based on the 10-day forecast in the few days before we leave for Arizona.

Tucson, AZ Weather (March averages from weather.com)

4 Avg 71° 46°	5 Avg 71° 47°	6 Avg 72° 47°	7 Avg 72° 47°	8 Avg 72° 47°	9 Avg 72° 47°	10 Avg 72° 47°
11 Avg 73° 48°	12 Avg 73° 48°	13 Avg 73° 48°	14 Avg 73° 48°	15 Avg 73° 48°	16 Avg 74° 48°	17 Avg 74° 48°
18 Avg 74° 49°	19 Avg 74° 49°	20 Avg 75° 49°	21 Avg 75° 49°	22 Avg 75° 49°	23 Avg 75° 49°	24 Avg 75° 49°

Ajo, AZ weather (March averages from weather.com)

4 Avg 73° 51°	5 Avg 74° 51°	6 Avg 74° 51°	7 Avg 74° 51°	8 Avg 74° 52°	9 Avg 75° 52°	10 Avg 75° 52°
11 Avg 75° 52°	12 Avg 75° 52°	13 Avg 76° 52°	14 Avg 76° 53°	15 Avg 76° 53°	16 Avg 76° 53°	17 Avg 77° 53°
18 Avg 77° 53°	19 Avg 77° 53°	20 Avg 77° 53°	21 Avg 78° 53°	22 Avg 78° 54°	23 Avg 78° 54°	24 Avg 78° 54°

Patagonia, AZ weather (March averages from weather.com)

4 Avg 69° 33°	5 Avg 70° 33°	6 Avg 70° 33°	7 Avg 70° 33°	8 Avg 70° 33°	9 Avg 70° 33°	10 Avg 70° 33°
11 Avg 71° 34°	12 Avg 71° 34°	13 Avg 71° 34°	14 Avg 71° 34°	15 Avg 71° 34°	16 Avg 72° 34°	17 Avg 72° 34°
18 Avg 72° 34°	19 Avg 72° 34°	20 Avg 72° 35°	21 Avg 73° 35°	22 Avg 73° 35°	23 Avg 73° 35°	24 Avg 73° 35°

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Miscellaneous Information: (updated 4/6/2017)

- 1. Will this class count towards degree requirements?** For ENVI majors this course will satisfy one of your "Society" course requirements. For all MCLA students this will counts toward the 39 required upper level credits.
- 2. What is the weather like in Southern Arizona in March?** Daytime highs average in the 70s and nighttime lows in the 40s and 50s. HOWEVER, it is possible, though unlikely, to have extended cold periods, especially at the higher elevation sites. It is also possible to have extended hot periods in March with daytime temperatures in the 90s. The night always feels cooler in the desert, so we will pack for this reality as well. Rain is very unlikely, but still possible. So, bring a rain jacket, warm clothes, and warm weather clothes.
- 3. What is the format of the course?** This is an intense field-based course. There are several pre-field trip components. You will need to do some background reading on your two selected topics before we leave for the trip. You will have to write two papers to be submitted before we depart. We will have several pre-trip overview and planning meetings during the semester. The rest of the course is in the field in Arizona. The days are long but rewarding! We will always be starting early, usually by 8 am, and a couple days we will start closer to 6 or 7 am. Every day will be packed with multiple activities including hikes, tours, paddling, etc. with conservationists, rangers, and ecologists. The day will "end" with our group dinner between 5-8 pm. Each night at dinner, I will give a mini-lecture on the material for the next day and we will also use this time for informal student presentations (i.e., no powerpoints, a verbal presentation and Q&A based on the research you did before the trip). You should not have any trouble falling asleep each night! This should give you a "flavor" of what to expect, yet each day will be different.
- 4. How much time will I need to devote to this course?** Expect a similar time-commitment as with any other course (i.e., ~45 hours of engaged time per credit). In the case of this course, most of the engaged time will occur during our extended field trip in Southern Arizona. There you will be engaged for 10+hours/day. Really, I'm not kidding. It is probably more like 12+ hours per day. Then you'll have time to sleep and do your bathroom stuff, but don't plan on catching-up on your leisure reading or work on classwork during our trip to Arizona.
- 5. What about dangerous animals?** They are many dangerous animals and plants in Southern Arizona. In particular, rattlesnakes and scorpions are present. Typically, in mid-March these species are still mostly hiding underground, but if the daytime temperatures get about 85 we'll be extra cautious. Always check your shoes before you put them on too. There are many plants that have fish-hook barbs and will really stick into you. You will learn very quickly to avoid these!
- 6. Should I be able to swim?** There is a strong possibility that we will do one canoe paddle on a tame lake. If it is really warm you might want to swim or wade in the lake. You can always wear a life jacket and just float if you need to, so swimming ability is not absolutely necessary.
- 7. What is included in the trip fee?** Here is what is *not* included: anything you buy at the airports,

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souvenirs, and junk food and soda, and any clothes or equipment you have to purchase (i.e., you need your own sleeping bag). Everything else is included: transportation to the airport from North Adams, airfare, ground transportation in AZ, admission and costs for all activities in AZ, snacks, all meals in AZ, etc.

8. **Are there any hidden fees?** Not that I know of. I suggest bringing \$30-40 in cash for any souvenirs you might want to buy. If you like candy bars and soda you should plan to buy those on your own. If you don't have a sleeping bag you will need that before we leave.
9. **Why is the trip fee \$1550?** The major costs of this trip are the airfare and minivan rentals. In general, it costs more to fly to the west coast and to fly over spring break. These account for the largest part of the total trip cost. I will do my best to get the best rates possible, but there is much outside of my control.
10. **What will happen if there is a weather delay at the airport?** If our trip is delayed or altered due to weather (e.g., snow delays at airports) or circumstances outside my control there is nothing that I can do about that and will not be able to refund money for unexpected reasons like this. We will absolutely continue our trip as smoothly as possible.
11. **What travel documents do I need?** For the airport you need either a state-issued driver's license or id. You can also use a passport for check-in. Everyone **MUST** bring your MCLA college id. If you are **not** a U.S. citizen, you **MUST** bring your passport from your nation of citizenship **AND** your U.S. Visa issued by the US Department of State as we will pass through several Border Patrol check-points in Arizona.
12. **What is the payment schedule for the trip fee?** This will be set up in order to stagger the costs to the participants in coincidence with when the trip fees must be paid (i.e., campsite costs, airline costs, etc.).
13. **What happens if the trip runs over budget?** I try to budget very conservatively so this will not happen. In four previous similar trips, we have always come under budget each time and student have received a refund. However, plane tickets, gasoline and food prices and even the minivan rental rates all can fluctuate between now and when the prices are "locked-in."
14. **How many people can go on the trip?** There are spaces for 10 people. This group size is based on fitting our gear and ourselves into minivans and maximizing each individual experience on the trip. Group size also influences per person costs because of the shared costs of the minivan, gasoline, and campsites.
15. **Will I have any free time to explore on my own?** Most days will be scheduled from ~8 am to ~8 pm. At each site there will be some free time in small chunks of time (15-30 minutes). There may be one or two larger blocks (2-3 hours) of free time. I will always give optional activities during this "free time" or you might choose to do some other activity like hiking, renting a bicycle, taking a nap, or catching up on journaling. Please do not ask to use the rental vans during these times. I promise that you will not have time to get bored during this trip!

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- 16. Will I have time to go shopping?** We will go to the grocery store to buy food and some supplies. There will be a couple gift shops at visitor centers at places like state and national parks and refuges. You will have some incidental opportunities to buy trinkets along the way, but there will not be any dedicated shopping time.
- 17. What will we eat?** We will take turns cooking dinner at our campsites. We'll have a hearty dinner each night. We will eat dinner as a group. Breakfast and lunch will be on-your-own, meaning you can prepare whatever you want from the cache of food in the coolers and vans. We'll keep a supply of bread, wraps, cheeses, crackers, corn chips, salsa, oatmeal, granola bars, cereal, eggs, pb&j, fruits and veggies, juices, and whatever else you want. No raw meat will be permitted in the coolers. Already cooked meats (i.e., deli meats) can be carefully wrapped and stored in the coolers and be used for breakfast or lunch. Dinners will be vegetarian as we will all be sharing the same dinner. Don't worry omnivores, we'll still eat very well! If we eat a meal at a restaurant (which would be included in trip costs), you are welcome to order meat then.
- 18. Will I see the Grand Canyon?** This trip is covering the very southern part of Arizona. The Grand Canyon is in the northern part of the state. Even in spending 8-10 days in the borderlands of Arizona we will only see some of the highlights of this area.
- 19. Can I use financial aid for the additional course fee?** Yes, I think so. Please see the financial aid office to find out these details. I'm not sure exactly how that works.
- 20. I've never been camping before. Can I still do this?** Sure, as long as you are flexible and willing to learn. You will quickly learn how to set up a tent and cook over a camp stove. Each pair will take turns cooking dinner for the group on one night. You'll learn how to do this as well.
- 21. Do I have to sleep in a tent?** Of course not! You are welcome to sleep under the stars, but hotels or campers are not an option. The bugs generally are not an issue in March, so you might really want to sleep under the stars, but you must have space in a tent.
- 22. This is an upper level course. Do I need to be a junior or senior?** Not necessarily. You will be permitted to take this course with my permission. In general, I am looking for individuals with a thirst of knowledge and an adventurous spirit. Some environmental background (i.e., ENVI 150/152 or self-taught knowledge) is helpful. If you have not previously taken a course with me or I do not know you otherwise, I will conduct an informal "interview" with you to get a sense of whether you would be a good fit for this group. The cohesion of this group is critical to a successful trip. There is no room for bad attitude or those who are not flexible and willing to go with the group.
- 23. How does the registration work for this course?** Because of the requirements for planning this trip I need to confirm your participation before you can register. You will need to sign up with me, submit payments to the Bursar before you actually sign up for the course with the Registrar. That will happen later in Oct or Nov.
- 24. Will there be access to toilets and showers?** Usually, yes. We will have some day trips into more remote areas without facilities. However, most nights we will camp at a developed

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campground at local, state or national parks. There you will have access to showers, running water and flush toilets. We may have one or two night without running water directly at the campsite. Some of the developed campgrounds might not have a shower.

- 25. Can I bring my electronics?** Sure, but it is up to you to secure them. A hot car is often not a good mix for electronics. I do not recommend you bring laptops. A tablet would probably be ok. Phones and ipods, no problem. Most of the developed camp sites will have outlets for charging. You will also be able to charge electronics while we are driving around.
- 26. Can I use my phone?** Sure, no problem. Just keep it to appropriate times like evenings after dinner. Some of the sites and areas we will visit may not have cell service, depending on your service provider. You might want to check your coverage map and inform anyone who might be trying to reach you.
- 27. How physically demanding is this course?** Stamina is the most important physical attribute required. You should be able to remain physically active over long days in the field. Mostly, this means being able to stand on your feet and walk over uneven terrain. However, we will do some hiking around the mountains, and up and down elevations, so you must be able to handle this physical aspect as well. The elevation changes from ~1300 ft to ~9000 feet, but we will not hike that whole range at one time. You should be very comfortable hiking elevation gains/losses of 600-1200 feet over a span of a few hours. In order to sign up for this course I will ask you to complete a hike up and down Pine Cobble in Williamstown. This physical requirement is for your own safety. Individuals who are not used to this sort of physical exertion could place themselves in jeopardy if they are not able to complete a hike (i.e., getting up a mountain and not being able to get down, etc.)
- 28. If I'm interested, what is my next step?** Send me an email to tell me this. I will want to chat with you to make sure this is a good fit for you and then we can talk about next steps.