



October 17, 2013

TO: Mark Zoran, Chair, Graduate Council

THROUGH: Patricia A. Hurley, Associate Dean, College of Liberal Arts *PAH*

FROM: Cynthia Werner, Head, Department of Anthropology *CW*

SUBJECT: Proposal for New M.S. in Maritime Archaeology and Conservation

Approved by GC:  
*[Signature]*  
 Mark I Zoran  
 Chair  
 12-12-13

During the 2012-13 academic year, the Department of Anthropology went through the Academic Program Review process. The external reviewers made a number of useful recommendations for the department, including a recommendation to develop a new master’s degree program that took advantage of the department’s existing strength in nautical and maritime archaeology. In response to this suggestion, I formed an ad hoc committee to prepare the proposal which is now under review. During the October 7<sup>th</sup> faculty meeting, this proposal was unanimously approved by all faculty in the department.

Most of the courses required for this degree are already offered in the department. The proposal includes one new course (ANTH 608 – Skills in Maritime Archaeology), which will be an essential part of the new program.

The new degree will be in addition to the three degrees currently offered by the department (BA, MA and PhD). In contrast to the existing master’s degree which provides general training in all fields of Anthropology, the new degree will provide more specialized and technical training in maritime archaeology and conservation. Students who complete the degree will be prepared for jobs in maritime museums, cultural resources management firms, and a variety of government agencies.



## New Bachelor's and Master's Degree Cover Page/Signature Page

**Directions:** An institution shall use this form to propose a new bachelor's or master's degree program. In completing the form, the institution should refer to the document *Standards for Bachelor's and Master's Programs*, which prescribes specific requirements for new degree programs. Note: This form requires signatures of (1) the Chief Executive Officer, certifying adequacy of funding for the new program; (2) a member of the Board of Regents (or designee), certifying Board approval, and (3) if applicable, a member of the Board of Regents or (designee), certifying that criteria have been met for staff-level approval. NOTE: Preliminary authority is required for all engineering programs. An institution that does not have preliminary authority for a proposed engineering program shall submit a separate request for preliminary authority prior to submitting the degree program request form. That request shall address criteria set in Coordinating Board rules Section 5.24 (a).

**Information:** Contact the Division of Academic Affairs and Research at 512/427-6200 for more information.

### Administrative Information

1. **Institution:** Texas A&M University
  
2. **Program Name** – Master of Science in Maritime Archaeology and Conservation
  
3. **Proposed CIP Code:** 45.030101.00
  
4. **Number of Required Semester Credit Hours (SCHs)** (*If the number of SCHs exceeds 120 for a Bachelor's program, the institution must request a waiver documenting the compelling academic reason for requiring more SCHs*): 32
  
5. **Brief Program Description** – Describe the program and the educational objectives: The Department of Anthropology proposes to offer a Master of Science in Maritime Archaeology and Conservation degree in the Nautical Archaeology Program (NAP), which is one of the Department's four programs. The department currently offers two graduate degrees: an M.A. in Anthropology and a Ph.D. in Anthropology. The proposed degree will provide more specialized training in maritime archaeology in order to provide maritime archaeologists with the technical skills, which are in growing demand in a variety of professional settings, by tailoring the curriculum in a way that better meets the needs of potential employers. The degree will prepare students for jobs in maritime museums, cultural resource management firms (including firms that perform work for the offshore oil industry), and government agencies at federal and state level. The program will retain existing courses that provide a solid academic background in nautical and maritime archaeology - for which Texas A&M is already reputed as the best in the world – while adding new courses that focus on specific practical skills that are desired by potential employers. The development of this new program will include the creation of an advisory board composed of recognized professionals in academia, the offshore industries, cultural resource management firms, maritime museums and state and federal agencies. Students in the proposed program will benefit from research opportunities and internships available through the Center for Maritime

Archaeology and Conservation (CMAC) and the Institute of Nautical Archaeology (INA). The program will be open to a limited number of students on a competitive basis.

6. Administrative Unit – Identify where the program would fit within the organizational structure of the university (e.g., *The Department of Electrical Engineering within the College of Engineering*): Department of Anthropology, College of Liberal Arts
  
7. Proposed Implementation Date – Report the date that students would enter the program (MM/DD/YY): Fall 2015 - 08/26/2015
  
8. Contact Person – Provide contact information for the person who can answer specific questions about the program:

Name: Dr. Cynthia Werner  
Title: Department Head  
Email: werner@tamu.edu  
Phone: 979-458-4037

## Signature Page

1. Adequacy of Funding – The chief executive officer shall sign the following statement:

*I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.*

---

Chief Executive Officer

Date

2. Board of Regents or Designee Approval – A member of the Board of Regents or designee shall sign the following statement:

*On behalf of the Board of Regents, I approve the program.*

---

Board of Regents (Designee)

Date of Approval

3. Board of Regents Certification of Criteria for Commissioner of Assistant Commissioner Approval – For a program to be approved by the Commissioner or the Assistant Commissioner for Academic Affairs and Research, the Board of Regents or designee must certify that the new program meets the eight criteria under TAC Section 5.50 (b): The criteria stipulate that the program shall:

- (1) be within the institution’s current Table of Programs;
- (2) have a curriculum, faculty, resources, support services, and other components of a degree program that are comparable to those of high quality programs in the same or similar disciplines at other institutions;
- (3) have sufficient clinical or in-service sites, if applicable, to support the program;
- (4) be consistent with the standards of the Commission of Colleges of the Southern Association of Colleges and Schools and, if applicable, with the standards or discipline-specific accrediting agencies and licensing agencies;
- (5) attract students on a long-term basis and produce graduates who would have opportunities for employment; or the program is appropriate for the development of a well-rounded array of basic baccalaureate degree programs at the institution;
- (6) not unnecessarily duplicate existing programs at other institutions;
- (7) not be dependent on future Special Item funding
- (8) have new five-year costs that would not exceed \$2 million.

*On behalf of the Board of Regents, I certify that the new program meets the criteria specified under TAC Section 5.50 (b).*

---

Board of Regents (Designee)

Date



## **Request For New Masters Degree**

### **Master of Science in Maritime Archaeology and Conservation**

**1. Institution:** Texas A&M University

**2. Program Name:** Master of Science in Maritime Archaeology and Conservation

**3. Program Description:**

The Department of Anthropology proposes to offer a Master of Science in Maritime Archaeology and Conservation degree in the Nautical Archaeology Program (NAP), which is one of the Department's four programs. The department currently offers two graduate degrees: an M.A. in Anthropology and a Ph.D. in Anthropology. The proposed degree will provide more specialized training in maritime archaeology in order to provide maritime archaeologists with the technical skills, which are in growing demand in a variety of professional settings, by tailoring the curriculum in a way that better meets the needs of potential employers. The degree will prepare students for jobs in maritime museums, cultural resource management firms (including firms that perform work for the offshore oil industry), and government agencies at federal and state level. The program will retain existing courses that provide a solid academic background in nautical and maritime archaeology - for which Texas A&M is already reputed as the best in the world - while adding new courses that focus on specific practical skills that are desired by potential employers. The development of this new program will include the creation of an advisory board composed of recognized professionals in academia, the offshore industries, cultural resource management firms, maritime museums and state and federal agencies. Students in the proposed program will benefit from research opportunities and internships available through the Center for Maritime Archaeology and Conservation (CMAC) and the Institute of Nautical Archaeology (INA). The program will be open to a limited number of students on a competitive basis.

**4. Administrative Unit:**

Department of Anthropology, College of Liberal Arts

**5. Proposed Implementation Date:**

Fall 2015 - 08/26/2015

**6. Contact Person:**

Name: Dr. Cynthia Werner

Title: Department Head

Email: [werner@tamu.edu](mailto:werner@tamu.edu)

Phone: 979-458-4037

## I. Need

A. Job Market Need. The development of SCUBA (self-contained underwater breathing apparatus) after World War II shed light on the importance of the world's submerged cultural heritage. Underwater archaeology was recognized as a scientific discipline in the early 1960s, after the excavation of the Cape Gelidonya Bronze Age shipwreck by Professor George F. Bass (now Distinguished Professor Emeritus at Texas A&M University), which fundamentally changed the world's understanding of seafaring and trade in the Eastern Mediterranean at the end of the second millennium B.C.

In 1975 Texas A&M University recruited Dr. Bass, who is commonly referred to as 'the father of underwater archaeology,' to develop the first graduate program in the world in nautical archaeology, granting degrees in Geography in the first years, and in Anthropology since 1978. Over the last 50 years, the importance of maritime archaeology has expanded both nationally and internationally, and the number of employed maritime archaeologists worldwide has greatly increased. The Texas A&M graduate program in nautical archaeology is world-renowned.

The development of nautical archaeology as a scientific discipline coincided with the international consensus about the importance of submerged cultural heritage and impacted national and international policies. Around the world, legislation has created the need for new and specialized jobs in cultural resource management (e.g. the state of Texas Antiquities Code Title 9, Chap. 191 of the Texas Natural Resource Code as amended through 9/1/97; the U.S. the 2004 Sunken Military Craft Act, Sections 1401 through 1408; or the 2001 UNESCO Convention on Underwater Cultural Heritage). Compliance with increasingly complex legislative mandates has generated a rising demand for maritime archaeologists trained in Cultural Resource Management to enable compliance with statutes in rivers, lakes, and salt water settings, typically at various governmental levels, but also in large industrial applications (oil exploration) as well as in support of coastline site developments.

Recovery of artifacts from submerged environments complicates the ability to stabilize and protect the recovered material. There are special, unique challenges for the conservation of artifacts from salt-water environments, where the artifacts become encrusted with corrosion products and marine growth. Texas A&M University has established itself as a world center of excellence in the conservation of maritime artifacts. For example, the material remains of Chevalier de la Salle's ship *Belle*, lost in 1686 at Matagorda Bay, Texas, and excavated by the Texas Historical Commission in 1997 were sent to Texas A&M for conservation, which is still ongoing. More recently, the wooden ship discovered underneath the World Trade Center was removed and shipped to the Texas A&M Riverside Campus Conservation Laboratory for study and conservation. Expanding the training available to maritime conservators, and recognizing their advanced education with this new degree, will meet worldwide demands for conservation experts in preserving both organic and inorganic materials.

Each year the department admits 8 to 10 students from a highly qualified pool of 35 to 60 applicants who are interested in pursuing an M.A. or Ph.D. in Anthropology with an

emphasis in nautical/maritime archaeology. Some of the Ph.D. graduates have pursued academic careers, while others pursued careers as professional archaeologists. Former M.A. students who have specialized in maritime archaeology are currently employed in museums, conservation facilities, cultural resource management firms, and at various levels of government service, including state archaeology offices, the National Oceanographic and Atmospheric Administration, and the US Navy. In recent years, there has been a growing demand for maritime archaeologists in cultural resource management, and to support offshore industries, particularly in oil and natural gas exploration.

The current demand for maritime archaeologists merits the development of a new degree with greater focus on maritime archaeology and conservation. The proposed M.S. program is an outgrowth of the existing M.A. in Anthropology. Currently, M.A. students are broadly trained as anthropologists, though they may choose to take a curriculum that focuses on maritime archaeology and conservation. Students who complete the new M.S. degree will complete a curriculum that is more specialized and technically-oriented towards maritime archaeology and conservation.

There are two primary reasons for developing a new degree: First, there is a need to tailor the contents of the M.S. degree to the needs of the job market, especially those of the developing offshore industry. In the words of Daniel Warren, Senior Marine Archaeologist at C&C Technologies Inc.: *"It takes us months to find even remotely qualified applicants and then we have to put them through extensive training to develop basic skills in these areas."* In this regard, the title of the new degree will benefit graduates on the job market. The second, related, justification is that the new degree will place increased emphasis on technical and scientific skills; thus an M.S. is more appropriate than an M.A.

B. Student Demand. The student demand is clearly expressed in the number of applications received for graduate studies. In the past decade, the Nautical Archaeology Program has received between 35 and 60 applicants per year for both the M.A. and Ph.D. degree.

C. Enrollment Projections – We are planning to accept an average of five students per year for the M.S. program. The attrition figures for the past decade (2004-2013) are approximately 10% per year for an average student intake of 9 to 10. We expect the majority to graduate at the end of their second academic year.

In this context, we expect to graduate four to five students per year after the third year.



Year	New Students	Attrition	Graduation	Cumulative Headcount
1 (FY16)	5	0	0	5
2 (FY17)	5	1	0	9
3 (FY18)	5	0	4	10
4 (FY19)	5	1	4	10
5 (FY20)	5	0	5	10

## II. Quality

A. Degree Requirements. The number of credit hours required will comply with University and Department rules, and will be a minimum of 32 credit hours. A thesis on an approved topic is also required. This is essential for graduates to become registered as professional archaeologists.

	Non-thesis SCH	Thesis SCH	Clock Hours
a. *Foundation Courses: prerequisite/leveling (explain any special circumstances)	NA	0	
b. Required Courses (of all students)  (list course names w/prefix & course numbers)	NA	13	
c. Recommended Elective Courses (list course name w/ prefix & course numbers)	NA	6-12*	
d. Additional Elective Courses (list elective areas only)	NA	0-6*	
e1. Thesis/Dissertation	NA	0-4*	
e2. Internships	NA	3	
<b>TOTAL SCH REQUIREMENTS</b>	NA	32	

\*See program below

A. Curriculum – The new curriculum will encompass a strong component geared to the job market. These are expressed in three ways:

- a) The creation of a new course – Skills in Maritime Archaeology – that will be composed of short seminars taught by invited professionals. This course, which is mandatory, will not only familiarize the students with the demands of the job market and the best ways to acquire the necessary skills to be competitive, but will create opportunities for students to network and establish working relations that may lead to increased job opportunities.
- b) The revision of some of the contents of some of the courses, to accommodate the constant technological developments, for instance in the offshore industry, and the needs of the employers.
- c) Most courses will continue to have a strong theoretical component, which is the hallmark of the Nautical Archaeology Program.

Prefix and Number	Required Courses	SCH
ANTH605	Conservation of Archaeological Resources I	4
ANTH611	Introduction to Nautical Archaeology	3
ANTH615	History of Wooden Shipbuilding	3
ANTH608	Skills in Maritime Archaeology	3

Prefix and Number	Recommended Elective Courses	SCH
ANTH602	Archaeological Methods and Theory	3
ANTH603	Seafaring Life and Maritime Communities	3
ANTH606	Conservation of Archaeological Resources II	3
ANTH607	Historical Archaeology	3
ANTH610	Outfitting and Sailing the Wooden Ship 1400-1900	3
ANTH612	Pre-Classical Seafaring	3
ANTH613	Classical Seafaring	3
ANTH614	Books and Treatises on Shipbuilding	3
ANTH616	Research and Reconstruction of Wooden Hulls	3
ANTH617	Conservation of Archaeological Resources III	3

ANTH618	Medieval Seafaring in the Mediterranean	3
ANTH628	New World Seafaring	3
ANTH629	Post Medieval Seafaring	3
ANTH633	Deep-Submergence Archaeology	3
ANTH636	Computer Graphics in Archaeology	3
ANTH639	Gender, Ethnicity and Class in Archaeological Research	3
ANTH642	Research Design in Anthropology	3
ANTH644	Classical Archaeology	3
ANTH645	Cultural Resource Management	3
ANTH654	Archaeological Photography	3
ANTH684	Anthropology Internship	3-9

We intend this new M.S. to be an intensive experience that will stimulate contact between our students and scholars from around the world, provide them with basic technical skills in demand in the market, and subject them to intense theoretical training. The duration of the M.S. is two academic years, as indicated in the program below:

**1<sup>st</sup> Semester (min. 10 credits)**

- ANTH611 – Introduction to Nautical Archaeology (3 credit hours)
- ANTH615 – History of Wooden Shipbuilding (3 credit hours)
- ANTH605 – Conservation I (4 credit hours)

**2<sup>nd</sup> Semester (min. 10 Credits)**

- ANTH6XX – Skills in Maritime Archaeology (3 credit hours)
- ANTH602 – Archaeological Methods and Theory (3 credit hours)
- One elective course (3 credit hours)
- ANTH691 – Research Hours - Approving the thesis proposal and the thesis table of contents (1 credit hour)

**Summer Semester (min. 3 credits)**

The summer semester will consist of either an internship (684) or excavation training, either in the Conservation Research Laboratory at A&M Riverside Campus, or in other institutions, such as museums, state offices, the Park Service, private companies, etc.

**3<sup>rd</sup> Semester (min. 7 credits from the list below)**

- ANTH691 – Research Hours - Writing the thesis (1 to 3 credit hours)
- Additionally, 6 credit hours from the list of elective courses presented above.

**4<sup>th</sup> Semester (min. 1 credit)**

ANTH691 – Research Hours - Writing the thesis (1 or 2 credit hours, to a maximum of 8 hours of 684 and 691 combined)

Additionally, 3-6 credit hours from the list of elective courses presented above.

Students will complete the M.S. in Maritime Archaeology and Conservation within two years of study. Students will be required to write a short thesis in order to complete the degree, as the completion of a thesis is essential for obtaining certain types of positions as professional archaeologists, and also to be listed on the Registry of Professional Archaeologists (RPA).

C. Faculty -- There is no need to hire any new faculty. The Nautical Archaeology Program has seven dedicated faculty who all have the same teaching load (2 courses per semester). These faculty can fill all the needs of the M.S. in Maritime Archaeology.

Name of <u>Core</u> Faculty and Faculty Rank	Highest Degree and Awarding Institution	Courses Assigned in Program	% Time Assigned To Program
Deborah Carlson	Ph.D. in Classics, The University of Texas, Austin	ANTH613, ANTH644, ANTH689	100%
Filipe Castro	Ph.D. in Anthropology, Texas A&M University	ANTH614, ANTH616, ANTH618	100%
Kevin Crisman	Ph.D. in American Civilization, University of Pennsylvania	ANTH603, ANTH610, ANTH628, ANTH629	100%
Donny Hamilton	Ph.D. in Anthropology, The University of Texas, Austin	ANTH605, ANTH607	100%
Cemal Pulak	Ph.D. in Anthropology, Texas A&M University	ANTH611, ANTH615	100%
Wayne Smith	Ph.D. in Anthropology, Texas A&M University	ANTH606, ANTH617, ANTH636, ANTH654	100%
Shelley Wachsmann	Ph.D. in Near Eastern Archaeology, Hebrew University, Jerusalem, Israel.	ANTH608, ANTH612, ANTH633	100%

There is no need to hire any extra support faculty at this time because the elective courses included in the M.S. program are already offered by the Nautical Archaeology

Program. All of the courses proposed for the program are also available to Ph.D. students in Anthropology.

The teaching load will not change as a result of this new program. Faculty in the department are already teaching many of the courses mentioned above. The primary difference is that the courses will now be applied to the new M.S. degree program, in addition to the Ph.D. program.

As it already happens, faculty will teach courses and mentor M.S. students by serving on graduate advisory committees.

Texas A&M University has a strong institutional commitment to the principle of diversity in all areas. In that spirit, admission to the Texas A&M University's M.S. in Maritime Archaeology and Conservation is open to all qualified individuals. Texas A&M does not discriminate on the basis of an individual's disability and complies with section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) as amended in its admissions, accessibility, treatment and employment of students in its programs and activities.

The Texas A&M University's M.S. in Maritime Archaeology and Conservation conforms with the university's normal requirement for admission to graduate studies - a scholastic record which, over at least the last two years of full-time academic study in a degree program, gives evidence of the applicant's ability to do successful graduate level work. Admission to the program is competitive, and is evaluated by the faculty of the Anthropology Department. Successful application conforms with overall admission criteria for the University, and is based on the entire record of the applicant, including:

- holding an accredited baccalaureate degree (of at least three years) from a college, institution or university of recognized standing, or its equivalent;
- an official score on a standardized test (Graduate Records Examination);
- official transcripts, including degree confirmation;
- letters of recommendation;
- professional and/or academic experience and performance;
- promise of ability to pursue advanced study and research satisfactorily;
- adequate preparation to enter graduate school in Nautical Archaeology;
- Statement of Purpose Essay.

Texas A&M University, the College of Liberal Arts, and the Anthropology Department are committed to providing an educational and work climate that is conducive to the personal and professional development of each individual. In all of its activities, the Anthropology Department strives to sustain an open exchange of ideas in an environment that embodies the values of academic freedom, responsibility, integrity, and cooperation, and provides an atmosphere of mutual respect.

In support of those goals, the department will take steps to recruit students from diverse backgrounds into the proposed Master of Science in Maritime Archaeology. A diverse student body enriches graduate education by providing a multiplicity of views and perspectives that enhance research, teaching, and the development of new knowledge.

E. Library – Built with consistent strategic purchases over three decades, Texas A&M Evans Library holds one of the best maritime archaeology libraries in the world, and Cushing has amassed an extensive collection of rare books that is unique worldwide. Additionally, the Department of Anthropology holds a collection of maritime archaeology and conservation books as well, which includes the J. Richard Steffy collection of books and notes, donated by his family after his death.

F. Facilities and Equipment – The Department of Anthropology occupies a large building with one floor dedicated to maritime archaeology (15,200 square feet). Additionally, the Nautical Archaeology Program operates a large conservation laboratory at Texas A&M Riverside Campus. During the recent Academic Program Review (2012-13), the external review team noted that our facilities are among the best in the nation.

Founded in 2005, the Center for Maritime Archaeology and Conservation operates eight laboratories and supports faculty and student field research projects around the world. Five of its laboratories support research focused on discoveries from shipwreck sites: the J. Richard Steffy Ship Reconstruction Laboratory, the New World Laboratory, the Old World laboratory, the Ship Model laboratory and the Wilder Imaging Laboratory. The remaining three laboratories are devoted to conservation of archaeological materials from marine environments: the Conservation Research Laboratory, the Archaeological Preservation Research Laboratory, and the Archaeo-Genomics Laboratory.

The Institute of Nautical Archaeology maintains a fully operating research and conservation center in Bodrum, Turkey. The Bodrum Research Center (BRC) is a comprehensive facility unlike any other in Turkey where INA staff and visiting scholars work year-round to conserve and restore artifacts raised during INA shipwreck surveys and excavations. TAMU faculty and students conducting fieldwork and research in Turkey have access to all the facilities and equipment of the BRC, which include a dormitory and kitchen, research library, computer lab, research ships, diving equipment, and recompression chambers. INA also owns and makes available various pieces of research equipment (sonar, metal detectors, cameras, ROVs, dive gear, etc.) to TAMU faculty and students engaged in archaeological fieldwork both in North America and overseas. The INA Archaeological Committee provides start-up funds to help applicants (largely current and former TAMU students) launch research projects around the world. INA's scholarly reputation means that, in many cases, Archaeological Committee approval is instrumental in helping young scholars compete for external funding. Historically, the majority of student projects benefiting from the financial support of TAMU

faculty endowments and INA Archaeological Committee funds have concluded as M.A. theses and Ph.D. dissertations in Anthropology.

**G. Accreditation** – Although there is no accreditation board for graduate programs in maritime archaeology and conservation in the US, it is our intention to create an informal advisory board to keep us updated in terms of professional and industry trends, the technological evolution of the discipline, and market demands.

**H. Evaluation** – The proposed master's degree program will rely on the evaluation and assessment procedures that have been developed in the Department of Anthropology. These procedures are continually revised as needed. The foundation of evaluation effectiveness is the collation and maintenance of accurate data. As such, data for students in this program will be recorded beginning with applicant information, acceptance percentages, yield, and other admissions information. Then, each cohort will be tracked throughout the educational process, including classes taken and class performance, fieldwork experience, thesis performance, time to graduate, and ability to find a job in the field following graduation. Along with measurable data, faculty and students will be periodically surveyed to detect and correct qualitative issues regarding specific classes, training opportunities, and other potentially desired changes.

This degree is designed to fill a need in the anthropology/maritime archaeology community, allowing graduates to quickly find employment in their specific area of emphasis (conservation, museum curatorship, cultural resource management, deep sea survey, etc). The effectiveness of the educational program will be quickly borne out by the ability of graduates to find jobs in their chosen subspecialty, and also by the resulting demand signal felt in applications for future classes. Lessons learned from assessments performed against recorded data and qualitative survey information will allow for a constant cycle of improvement in the curriculum, ensuring future graduates are fully prepared for immediate success in the job market.

### **III. Costs and Funding**

There are no new costs associated with the new M.S. The new degree will rely on faculty who are already members of the Department of Anthropology, and existing funds within the department will be sufficient to meet the costs of adding this degree program.