LAMAR UNIVESITY
COLLEGE OF ARTS AND SCIENCES
Calendar Year: 2013

Department: COMPUTER SCIENCE

Unit Goals for 2013 and Accomplishments

1.   The most important goal was to get ABET re-accreditation. All the Faculty and Staff members have been involved in writing the Self-Study ABET Report and Supplimentary documents. We had the ABET visit on October 21-22, 2013. They found two weaknesses: minimal evidence of periodic updating the educational objectives and minimal evidence of assessing the online courses communication skills. A detailed answer was sent in January 2014 to ABET.

2.   Adopting the new changes in the LU core curriculum to our B.S. in C.S. and C.I.S. Many changes have been submitted and approved by all the committees, and the Coordinating Board on Fall 2013 and Spring 2014.

3.   Continuing the yearly assessment and preparing the 6-year self-study for the ABET accreditation. All Faculty continued this goal.

1.   Compare enrollment (SCH + Student FTE) data for the past three (3) years. Comment on trended data and actions taken this year.

		Fall 2011		Fall 2012		Fall 2013	
		Female	Male	Female	Male	Female	Male
CIS	White	3	10	3	16	1	16
	Black	4	4	2	5	6	8
	Hispanic	0	0	0	1	0	0
	Asian	0	2	0	2	0	2
	American-Indian	0	0	0	0	0	0
	Multiracial	0	0	1	0	1	1
	Intl	0	0	0	0	0	1
	Unknown	1	0	0	1	0	2
	TOTAL	8	16	6	25	8	30
CS	White	4	65	7	80	11	100
	Black	8	26	7	19	6	19
	Hispanic	1	5	1	10	1	14
	Asian	0	2	4	4	2	6
	American-Indian	0	1	0	1	0	1
	Multiracial	1	0	0	0	0	3
	Intl	0	1	1	2	1	1
	Unknown	1	1	0	2	0	2

	TOTAL	15	101	20	118	21	146
MCS	White	0	1	0	3	0	2
	Black	0	0	0	0	2	0
	Hispanic	0	0	0	0	0	0
	Asian	0	1	1	3	2	3
	American-Indian	0	0	0	0	0	0
	Multiracial	0	5	0	0	0	0
	Intl	5	23	6	24	11	26
	Unknown	1	2	0	0	0	0
	TOTAL	6	32	7	30	15	31

	Fall 2011	Fall 2012	Fall 2013
CIS	283	390	428
CS	1430	1665	2070
MCS	311	318	396

Undergraduate major enrollment has increased from 140 in 2011 to 169 in 2012 (hence, an increase of 21%) and 205 in 2013 (hence, an increase of 21% compared to 2012) for an overall increase of 46% over three years. With respect to Semester Credit Hours (SCH) from 2010 to 2011 the number from undergraduate credit hours increased from 1713 to 2055 for a 20% increase and from 2012 to 2013 the number from undergraduate credit hours increased from 2055 to 2498 for a 22% increase. The overall SCH increase over three years is 46%. These are very good numbers, which show a steady growth in enrollment especially in 2013.

Enrollment in the MCS program went from 38 in 2011 to 37 in 2012 and to 46 in 2013 for a decrease of 2% followed by a dramatically increase of 24%, respectively. The SCH increased from 311 in 2011 to 318 in 2012 and 396 in 2013 which is up 2% for 2012, followed by a dramatically increase of 25% in 2013. It appears that the figures are acceptable to the department. The reasons they come to Lamar are usually based on country, cost, resources and housing available on campus, and, perhaps most important, the reputation of the school and program. Our graduates appear to be very satisfied according to the results of anonymous exit surveys and testimonials from graduates who have found employment. Hopefully, the U.S. will continue to grant visas to high potential students to study in this country and more areas will become familiar with Lamar due to active recruitment. We learned that the Graduate Studies website for students has been improved. Our department is also looking into ways of improving advisement and the curriculum for the final project as ways to retain graduate students.

2.   Examine unit's ability to contribute to teaching, research, and service missions of the organization.

       The CS faculty is competitive with the faculties of similar institutions in teaching, research and service. We are looking to hire a new Assistant Professor, expert in one of the following areas: computer graphics, high performance computing, computational

science and scientific computing, security and privacy, computer vision, speech and natural language processing, data mining and cloud computing, and bioinformatics and computational biology. Our faculty continue to publish in prestigious international journals and conference proceedings and to be awarded NSF grants. We have a very active faculty in teaching and service as well with several members either in faculty senate or previously holding leadership positions in faculty senate. As long as our numbers of students remain stable, we should continue to perform strongly.

3. Compare graduation rates for past three (3) years, what do these numbers/trends mean and what do you need to change or improve?

				FY11	FY12	FY13	Three Year Total
11010100	2	BS	COMPUTER SCIENCE	4	10	8	22
11010100	2	BSCIS	COMPUTER INFORMATION SCIENCES	4	10	3	17
11070100	3	MSCS	COMPUTER SCIENCE	13	14	14	41

Both BS and BSCIS degrees are treated as one program by the Texas Higher Education Coordinating Board standpoint (that is, the both their CIP codes are identical with 11010100). For the past three years, our undergraduate total is 22, while the graduate total is 41. We did not have so many graduating C.I.S. majors in 2013 because we have less and less students majoring with a C.I.S. degree. We continue to hope that adding a new specialization in game programming and graphics will improve our undergraduate enrollment.

4. Institutional Effectiveness Plans—Summarize how your unit is doing in setting, evaluating and using data to make revise, maintain, add or eliminate topics or courses.

Each year, our department does an assessment report which is based on the ABET accreditation process. The reports are at http://cs.lamar.edu/abet/abethome.htm. We document our Educational Objectives, Student Outcomes, Performance Criteria, Targets, and faculty responsible for various aspects of the assessment. We take the data collected and analyze it. The data are both direct and indirect, qualitative and quantitative. We then document what actions we are going to take and for what reasons in order to improve the program. Our efforts at continuous improvement include closing the loop and monitoring the results of our improvements to see whether they have been effective. Each year the entire faculty meets several times in the fall to consider the results of the previous academic year and to approve recommendations from the Assessment Committee and the Curriculum Committees. Periodically members of the department attend workshops and symposiums hosted by ABET to update programs on the latest changes in the ABET process of accreditation. The next visit from the ABET organization will be in October 20-22, 2013.

As part of the process, we look not only at curriculum, but also at other matters including student satisfaction with advisement, scheduling, instruction in teamwork and leadership, opportunities for independent study, participation in student organizations, and

knowledge of the impact of computing on the well-being of the environment and global society.

Student Workers

1.   Number employed and how utilized

There were 60 students hired between January 1 and December 31 in 2013. These students were mainly used as graders and teaching assistants, but there were nine that worked as network technicians, two that were webmasters, and three that were office assistants. that were office assistants.

Our records indicate the following of student workers:
Spring 2013
- *1   Office Assistant*
- *1   Webmaster*
- *4   Technicians*
- *3   Teacher Assistants*
- *13   Graders (Student and Grad Students)*

Summer 2013
- *1   Office Assistant*
- *1   Webmaster*
- *4   Technicians*
- *8   Teacher Assistants*
- *6 Graders (Student and Grad Students)*

Fall 2013
- *2   Office Assistants*
- *1   Webmaster*
- *4   Technicians*
- *11 Graders (Student and Grad Students)*

2.   Total costs/semester and year

Total Cost for Spring 2013: $19,103.75.00
Total Cost for Summer 2013: $36,312.50
Total Cost of Fall 2013: $51,775.87
2013 Total: **$107,192.12**

Faculty Productivity Measures
1.   Publications

__2__ # of Manuscripts submitted not yet published
__19__ # of Manuscripts published

__17__ Refereed
__2__ Non-refereed

__0__ # Books published (book chapters)

2.   Professional Presentations

__0__ Local presentations
__2__ State / Regional
__0__ National
__13__ International
__15__   TOTAL #

3.   Research Grants (# and amount)

_____ Internally Funded – Lamar University of TSUS

Grant Title	Amount
Research Enhancement Grant, Lamar University - Title – Efficacy of Data Serialization Formatting Methods for Mobile Environment, *May 2012-May 2013*, PI is Dr. Kami Makki	$5,000

_____ State Funded

Grant Title	Amount
Total	

_____ National Funded

Grant Title	Amount
2012 - 2017: co-PI of the National Science Foundation Grant "*Addressing the Gulf Coast Region's Graduation Rate Crisis in Mathematics and Computer Science*", Award No. DUE-1154606, PI is Dr. Kumer Das, co-PIs: D. Lawrence Osborne, Dr. Daniel Dale, Dr. Stefan Andrei	$583,096
2012 – 2013: Academic Partnership Grant #CS5014 "Building an Online Computer Science Course with Embedded Signing Avatars for Deaf and Hard of Hearing Students.", PI is Dr. Stefan Andrei	$3000
Sept. 2009 – 2014: $400,000 from National Science Foundation (NSF), "CAREER: An Effective Integration of Research and Education on High-Speed and Energy-Efficient Interconnects for Multi-Core and Multi-Thread Systems," PI is Dr. Jane Liu	$400,000
September 9, 2010 - December 31, 2013: Principal Investigator on Students Advancing through Involvement in Research Science Talent Expansion Program (STAIRSTEP) grant from the National Science Foundation; additional support of award, PI is Dr. Peggy Doerschuk	$199,270
2011-2013: National Science Foundation's research project "Computer Algebra Research Student Support for the 17th International Conference on Applications of Computer Algebra (ACA 2011)" (NSF-1115922). PI is Dr. Quoc-Nam Tran	$7,000

2009-2013: National Science Foundation's research project "Efficient Groebner Bases Computation in Boolean Rings for Temporal Logic Reasoning and Model Checking" (NSF-0917257). PI is Dr. Quoc-Nam Tran	$221,000
Total	$1,413,366

4.   Teaching/Program Grants (# and amount)

_____   Internally Funded – Lamar University or TSUS

Grant Title	**Amount**

_____   State Funded

Grant Title	**Amount**
Total	

_____   Nationally Funded

Grant Title	**Amount**

5.   Faculty holding office in national/international professional organization - **Only**

Faculty	**Organization**	**Office**
Stefan Andrei	The *2013 Texas STEM Conference*, http://www.math.lamar.edu/activities/SSTEM/, Lamar University, October 5, 2013	Member of the Program Committee and Session Chair
Stefan Andrei	The *10th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, http://www.icinco.org/, July 29 - 31, 2013, Rejkyavik, Island	Member of the Program Committee
Stefan Andrei	The *15th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2013)*, http://synasc13.info.uvt.ro, IEEE Computer Society, September 25-28, 2013, Timisoara, Romania	Member of the Program Committee
Stefan Andrei	*The Journal of Broad Research in Artificial Intelligence and Neuroscience*, ISSN 2067-3957 (online), ISSN 2068 - 0473 (print), **www.brain.broadresearch.org**	Member of the Editorial Board of BRAIN
Stefan Andrei	The *2013 IEEE International Conference on Green Computing and Communications*: *Metrics, Models, Algorithms, Systems, and Architecture*, http://www.china-iot.net/GreenCom2013.htm, Beijing, China, August 20-23, 2013	Member of the Program Committee
Stefan Andrei	The *6th IEEE International Conference on Service Oriented Computing and Applications*	Member of the Program Committee

	(SOCA 2013), http://conferences.computer.org/soca/, IEEE Computer Society, December 14-16, 2013, Hawaii, U.S.A.	
Kami Makki	Second International Workshop on Networking and Communication, December 11-13, 2013, Jeju Island, Korea.	Technical Program Committee Member
Kami Makki	International Symposium on Security in Computing and Communications (SSCC'13), August 22-24, 2013, Mysore, India.	Technical Program Committee Member
Kami Makki	TIBiDa Workshop of IEEE ATC-2013 Conference Autonomic and Trusted Computing, Sorrento Peninsula, Italy, December 18-21, 2013.	Technical Program Committee Member
Kami Makki	The 2013 IEEE International Symposium on Anonymity and Communication Systems (IEEE ACS 2013), Melbourne, Australia, July 16-18, 2013.	Technical Program Committee Member
Kami Makki	The 4th International Conference on Mobile, Ubiquitous, and Intelligent Computing (MUSIC 2013) SCS/IEEE, 4-6 September, 2013, Gwangju, Korea.	Technical Program Committee Member
Kami Makki	Symposium on Performance and Evaluation of Computer and Telecommunications Systems, Genoa, Italy, July 8-11, SPECTS'13.	Technical Program Committee Member
Kami Makki	WISE 2013 International Workshop on Data Quality and Trust in Big Data (QUAT 2013), In conjunction with the 14th international conference on Web Information Systems Engineering (WISE'13), 13 Oct 2013, Nanjing, China.	Technical Program Committee Member
Kami Makki	Technical Program Committee Member, International Conference on Data Communication Networking (DCNET 2013), 29 – 31 July, Reykjavík, Iceland, 2013.	Technical Program Committee Member
Kami Makki	International Conference on Wireless Information Networks and Systems (WINSYS 2013), 29 – 31 July, Reykjavík, Iceland, 2013.	Technical Program Committee Member
Kami Makki	International Conference on Computer, Information and Telecommunication Systems CITS 2013, Piraeus-Athens, Greece, May 7-8, 2013.	Technical Program Committee Member
Kami Makki	International Journal of Computer Science Applications & Information Technology (IJCSAIT), Publisher- Academy Research and Publication Center. AR Publication.	Editorial Board Member
Kami Makki	International Journal in Foundations of Computer Science & Technology (IJFCST), Academy & Industry Research Collaboration Center Publisher.	Editorial Board Member
Kami Makki	International Journal of Advances in Digital Media and E-Learning (ADML), American Human & Sciences Research Center.	General Editor-in-Chief
Kami Makki	International Journal of Sensors, Wireless Communications and Control (SWCC), Bentham Science Publisher	Editorial Advisory Board Member
Kami Makki	The International Journal of Privacy and Health Information Management (IJPHIM), IGI, Publisher	Associate Editor
Kami Makki	International Journal on Cryptography and Information Security (IJCIS), Academy &	Editorial Board Member

	Industry Research Collaboration Center (AIRCC) Publisher	
Kami Makki	International Journal of Networking (JNW), Science Academy Publisher	Associate Editor-in-Chief
Kami Makki	International Journal of Research and Reviews in Wireless Sensor Networks (IJRRWSN), Science Academy Publisher United Kingdom	Associate Editor-in-Chief
Kami Makki	Journal of Information Assurance and Cybersecurity, JIACS, IBIMA Publishing.	Editorial board member
Kami Makki	International Journal of Communications (JMC), Academy Publisher.	Editorial board member
Kami Makki	International Journal for Infonomics (IJI), Infonomics Society Publisher.	Editorial board member
Timothy Roden	Journal of Graphics Tools (JGT).	Associate Editor
Timothy Roden	International Journal of Computer Game Development and Education (IJCGDE).	Associate Editor
Bo Sun	International Journal of Sensor Networks, Sept. 2010 - Present	Associate Editor

6.   Faculty Honors

Faculty	Honors
Peggy Doerschuk	STAR Award for the STAIRSTEP program
Stefan Andrei	ACM Senior Member

7.   Student Honors and Accomplishments

Does your Department have a Mirabeau Scholar? **Yes**   No

We have six Mirabeau Scholars, two awarded in 2011: Kaitlyn Hinch and Brenden Smith and four awarded in 2013: Cameron Henry, Christopher LaChance, Shane Granger, and Timothy Gonzales. We describe their status in the below table. It is first time when the Department of Computer Science has so many Mirabeau Scholars awarded in a year.
If yes, please state their involvement and progress to date.

Student	Honors/Accomplishments
Kaitlyn Hinch	GPA = 3.871 (Dean's List)
Brenden Smith	GPA = 4.0 (President's and Dean's Lists)
Gonzales, Timothy	GPA = 3.897 (President's and Dean's Lists)
Granger, Shane	GPA = 3.58l (Dean's List)
Henry, Cameron	GPA = 4.0 (President's List)
LaChance, Chris	GPA = 3.368

8.   Development activities undertaken by you or faculty in your area.

Most of the Department of Computer Science Faculty are involved in research, publishing papers and writing grants. All of the Department of Computer Science Faculty are involved in teaching, improving their courses and revising their online courses. All Faculty submitted their assessment materials, necessary for the ABET accreditation. In addition, Faculty uploaded their assessment results in the online website. All Faculty reviewed publications including journals, books, and conferences.

9.   HEAF summary (goals accomplished, dollars spent and major goal for next year)

Product	Company	Date	Total
Dell S2740L 27" Monitor (15)	SHI Government Solutions Inc.	4-1-13	**$5,310.30**
Alienware Aurora-R4 225-2262 (15)	SHI Government Solutions Inc.	4-8-13	**$34,141.05**
Catalyst 4500 E-Series 48-Port PoE+Ready (1)	Netsync Network Solutions	10-20-13	**$4,028.56**
Corsair HX1050 Power Supply Unit Internal 1050 Watt (10)	SHI Government Solutions Inc.	10-21-13	**$2,060.00**
Corsair Vengeance Pro Series – Memory 8GB (9)	SHI Government Solutions Inc.	10-29-13	**$981.00**
		TOTAL	**$46,490.91**

In 2013, the renovation of instructional lab in Room 216 was over. It is now divided into 2 labs (Game Design and Development and Computer Architecture), one of which will have 16 computers and the other 14.

In addition, the renovation of Maes 202 (Commons Area) was completed. It appears students are enjoying studying in the commons area.

Major HEAF goals for next year:

1. We plan to finish the renovation of Pantry Lounge in Maes 210, Conference room (59 A), and Copier room (59B) all supported by Lamar University;

2. We also need five machines Alienware Aurora-R4 225-2262 to complete the Game Development Laboratory as well as three more tables and five chairs. These items are important for us.

3. The regular three-year equipment renewal as a requirement of ABET accreditation will continue case-by-case.

Major goals for course fee monies for this year:

Goal Accomplished	Dollars Spent
Licenses for Matlab and related software	$1,058.40
Seagate Barracude hard drive	$161.12
Oracle software updates and licenses	$3,379.40
Microsoft Subscription	$1,437.00
Hernandez Office Supplies	$202.96
Office Depot	$1,481.94
Manning's Office Supplies	$448.32
TOTAL	**$8,169.18**

10.   Evaluation of accomplishments of your unit this year.

The new Game Development lab located in room 218 opened in August 2013. Dr. Timothy Roden is the Director of this lab. The students seem to appreciate learning about the areas of computer graphics and computer gaming.

Our new Senior Administrative Associate, Mrs. Denise Rode, has brought order and organization to our department Office. She is recognized already for her ability to interact with all types of people and to use technology to improve the efficiency of our operations. The entire faculty appreciates the improvement in all procedures.

The ABET report has been done and submitted to the ABET Headquarters and the ABET team members. Dr. Timothy Roden coordinated the Assessment activities and the writing of the self-study report and supplementary appendix.

Our faculty is looking carefully at our graduate program to ensure the quality of the curriculum and advisement.

The CUDA Teaching Lab is now in room 212B. The space and equipment is ready to be used for students. The Director of this lab has been changed from Dr. Tran to Dr. Osborne.

11.   Report of centers in your department (*goals accomplished, problems, and major goals for next year*).

Research Labs in Computer Science Department served as both research and teaching areas for many students. The research labs are as follows:
Maes 104-106: Computer Architecture (Dr. Liu);
Maes 201: Robotics and Outreach (Dr. Doerschuk);
Maes 208: Database Design (Dr. Makki);
Maes 209: Wireless Sensor Networks (Dr. Sun);
Maes 209 B: Real-time Systems (Dr. Andrei);
Maes 95: Game Design and Development (Dr. Roden).

These labs enable their directors to complete the requirements of grant proposals. Among the problems are keeping the equipment up-to-date since in most cases, no money was placed in the grant nor promised by an entity at Lamar for sustaining the activities begun by the grant. Our goals are simply to continue to advance the state of computing through dedicated research.

In addition to research labs, we designated room 97 for the ABET Assessment to be used by our Faculty to keep records of assessments, and to conduct the analysis of the assessment.

12.   Report of activities/accomplishments of Endowed Chairs in your department.

N.A.

13.   Report any initiatives under taken this year by your unit.

The CS department participated in the renovation of the second floor of Maes during 2012.

14.   Identify special projects or initiative you plan for next year.

1.   Finish the renovation of the faculty and staff lounge. Currently, our department does not have one. We are using part of a custodian's storage room for mailboxes and a microwave, but it is not appropriate to serve as a lounge due mainly to space.

15.   Any **BRAG** points not identified in the above.

None that we are aware of.