

# **Program Planning Summary Clemson University**

## **Master of Science in Social & Immersive Media (MS-SIM)**



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## PROGRAM PLANNING SUMMARY

### 1. Overview

We seek approval for a *New Graduate Program* – a Master of Science in Social & Immersive Media administered through Clemson University, 30 credit hours.

Designation of Science, Technology, Engineering and Math (STEM) programs, healthcare programs and Math/Science teacher education programs as qualified for supplemental Palmetto Fellows Scholarship and LIFE Scholarship awards—NOT APPLICABLE to this program

Delivery will be online and at the University Center of Greenville

### 2. Proposed date of implementation

August, 2011

### 3. Justification of need for the proposed program

The Master of Science in Social & Immersive Media (MS-SIM) is an online, cohort-based, interdisciplinary graduate degree program designed to prepare students to lead the design, development, evaluation, and advocacy of 21st Century platforms for work, play, and learning. Students enrolled in this degree program will learn fundamentals and advanced concepts via a shared, common core of four courses (12 hours), combined with multiple 4-course specialization tracks (12 hours) and two capstone courses (6 hours). The program of study consists of a total of 30 credit hours which can be completed in 1.5 years. This will be an interdisciplinary program, hosted by the SimHub at the University Center at Greenville, spanning all colleges, administered by the Graduate School as are the Ph.D. in Policy Studies, the MPA and the Ph.D. in Family and Community Studies.

The need for this master's degree has been articulated via a number of market sectors. Extensive discussions between Clemson, the University Center, and Lockheed Martin Corporation indicate a strong corporate interest. Similar discussions between Clemson, the Virtual Worlds Consortium, and educational organizations such as the North Carolina Virtual Public Schools indicate a strong educational component. For example, teachers need these skills to respond to the needs and wishes of the 21<sup>st</sup> Century learner. Further, discussions between Clemson and entertainment industries who hire our DPA graduates indicate another major market sector with high interest. Finally, we also believe that this program, because of the pervasiveness of these electronic technologies across society, can attract students from a wide range of bachelors programs as a first-in-nation degree that will yield significant economic impact.

- Consistent with the cash flow analysis that is presented later in this document, we believe that we can enroll 15 (or more) students in the initial cohort.
- We have developed plans to market this program via our industry-leading graduate web presence upon approval
- We strongly believe that Clemson holds the promise of developing the world's foremost program in this area

Clearly, the above is anecdotal evidence but at this point in the planning process we submit that it is a very strong endorsement to move forward. In each encounter, we have not only mentioned the delivery mechanism and goals but also the expected costs that are reflected in the cash flow analysis. Hence, we submit that the interest expressed from very significant individuals with full knowledge of costs is an excellent indicator that this program is addressing a well-acknowledged need in industry.

Students graduating with the MS-SIM should be able to develop and maintain web-based software, applications, hardware, and smart devices. They should be able to go beyond the webmaster role to take connectivity and immersive technology into their area of concentration. They should be able to teach/train those involved in K-12 on-line schools (education), those involved in human-centered computing (computer science), those involved in socially immersive media (business), and health care workers. This

teaching/training should involve relating advanced concepts to the layman, creating new sensibilities in communication, and showing individuals how to not just consume technology, but use it to create and connect to others.

21<sup>st</sup> Century Platforms go beyond web 2.0 and social media sites such as FaceBook. They involve the virtual world web and constructs/experiences such as Virtual Worlds, Augmented Reality, Simulators/Simulations, and Serious Games. Examples of these platforms include Second Life, Opensim, Teleplace, Active Worlds, the Teach-Me Simulator, and flight simulators. Examples of augmented reality can be seen in the simulated down lines on a TV-broadcast football game or viewing a painting at a museum through the camera on your smartphone.

#### **4. Anticipated program demand and productivity**

The program has been designed to be profitable with as few as 10-12 new students each year. Based on the feedback documented in the Section 3 we actually anticipate a much larger student population but the program will be very effective with 15 new students per year.

#### **5. Assessment of extent to which the proposed program duplicates existing programs in the state**

We are not aware of any programs in the state, the nation, or world that are similar in any way to this one. Clemson enjoys a position of market first-mover advantage by virtual of being the founding member of the Virtual World Consortium, which also include a very strong partner in the Greenville area (University Center).

#### **6. Relationship of the proposed program to existing programs at the proposing institution**

The proposed program simultaneously articulates with (1) all five colleges at Clemson University , (2) the Virtual Worlds Consortium, of which Clemson is a founding member, (3) the University Center of Greenville, which has already invested in the development of a major immersive simulation facility—the SimHub, and (4) a number of international partnerships concerning the development, use, and research into virtual learning environments.

The common core courses for the MS-SIM are HRD 880 Research Methods; CPSC 614 Human and Computer Interaction; SIM 800 Intro to Gaming/Virtual Worlds/Augmented Reality/Simulations; SIM 801 Advanced Gaming/Virtual Worlds/Augmented Reality/Simulations. There will also be two common interdisciplinary capstone courses (SIM 900 and 901) that will be project-based and contain portfolio work. Each specialization will include four concentration courses (education, computer science, for example) that will also constitute stand-alone certificates.

The education concentration courses will be HRD 860 Instructional Materials Development; HRD 890 Instrumentation for Human Performance Improvement; ED F 702 Advanced Educational Psychology; HRD 882 Knowledge Management for Improved Performance. The computer science concentration courses will be CPSC 810 Introduction to Artificial Intelligence; CPSC 616 Game Engine Construction; CPSC 870 Software Design; CPSC 681 (selected topics) Digital Image Graphics. Concentrations in Health Communications, Parks Recreation and Tourism Management (PRTM) and Nursing are in development.

The University Center of Greenville's SimHub is a place where faculty and students can investigate the teaching, research, and outreach potential of emerging social and immersive technologies. SimHub staff helps educators and students gain useful experience with 21<sup>st</sup> century tools such as virtual worlds, simulators, serious games, and augmented reality. Virtual Worlds are on-line, three-dimensional, collaborative social spaces through which users can interact in real-time. Augmented Reality applications combine GPS, web, and mobile devices to provide real-time layered perspectives of the physical world. Simulators immerse users in real-life or highly conceptual situations that are impractical, impossible, or too dangerous to do physically. Serious Games typically are highly-scripted, goal-driven environments in which participants engage in some type of quest to accumulate points or status.

**7. Relationship of the proposed program to other institutions via inter-institutional cooperation**

An exhaustive search of the internet reveals that only a few, peripherally related programs exist. Simply, our proposed degree program lies in a category of its own, although we predict that this situation is temporary and that the higher education industry will quickly begin to populate this taxonomy with degree programs as technology becomes more understood by the professoriate.

School	Program Title	Emphasis	Immersive Learning	Requirements (# 3 hour classes)	Estimated Program Price
Seaton hall	MHA	Management competencies for healthcare administration	Yes	2-3	>\$50,000
University of Washington	Certificate 9 CEU	Introduction to virtual world use	Yes	9 CEU	\$2,475
George Washington Univ.	Ed Tech Leadership	Educational Technology, delivered entirely online	(no) Web	36 hrs	\$1,175/hr
University of California Irvine	Undergraduate degree in video games	Computer games	Yes (20%)	Full undergraduate curriculum	~\$80,000

Within this landscape, the proposed program is unique and competitive and enjoys a significant first-mover advantage.

**8. Total new costs associated with implementing the proposed program (general estimates only)**

A complete cash flow analysis has been performed and the program has been shown to break even the very first program year. The first three years cash flow is shown below.

Year 1 Projected Budget						
Cohort #1	15 students					
		Per Course	Less	Net Rev		Per Year
Revenue			Debt Svc	Per unit		6 Courses
Registrations		15				
Fee/Cr Hr		\$600	\$60	\$540		
Fee/3 Cr Hr		\$1,800	\$180	\$1,620		
<b>Total Income</b>		<b>\$27,000</b>	<b>\$2,700</b>	<b>\$24,300</b>		<b>\$145,800</b>
Expenses						
Faculty Salary		\$6,000				
Fringe Ben	27.8%	\$1,668				
	Sal Exp	\$7,668				
CCIT	10%	\$2,430				
<b>Course Expenses</b>		<b>\$10,098</b>		<b>\$10,098</b>		<b>\$60,588</b>
Marketing	5%	\$7,290				\$7,290
Program Coordinator	10%	\$14,580				\$14,580
<b>Total Revenue</b>						<b>\$82,458</b>
<b>Net</b>						<b>\$63,342</b>

Year 2 Projected Budget						
Cohort 1 (15 students)		(4 courses with 15 students)				
Cohort 2 (30 students)		(6 courses with 30 students)				
		Per Course	Less	Net Rev		Per Year
<b>Revenue</b>			Debt Svc	Per unit		10 courses
	Registrations	15 to 30				
	Fee/Cr Hr	\$600	\$60	\$540		
	Fee/3 Cr Hr	\$1,800	\$180	\$1,620		
	<b>Total Income</b>					<b>\$388,800</b>
<b>Expenses</b>						
	Faculty Salary	\$6,000				
	Fringe Ben	27.8%	\$1,668			
	<i>Sal Exp</i>		\$7,668			
	CCIT	10%	\$4,860			
	<b>Course Expenses</b>		<b>\$12,528</b>	<b>\$12,528</b>		<b>\$125,280</b>
	Marketing	5%	\$14,580			\$14,580
	Program Coordinator	10%	\$29,160			\$29,160
	<b>Total Expenses</b>					<b>\$169,020</b>
	<b>Net</b>					<b>\$219,780</b>

Year 3 Projected Budget						
Cohort 2 (15 students)		(4 courses with 30 students)				
Cohort 3 (30 students)		(6 courses with 30 students)				
		Per Course	Less	Net Rev		Per Year
<b>Revenue</b>			Debt Svc	Per unit		10 Courses
	Registrations	30				
	Fee/Cr Hr	\$600	\$60	\$540		
	Fee/3 Cr Hr	\$1,800	\$180	\$1,620		
	<b>Total Income</b>					<b>\$486,000</b>
<b>Expenses</b>						
	Faculty Salary	\$6,000				
	Fringe Ben	27.8%	\$1,668			
	<i>Sal Exp</i>		\$7,668			
	CCIT	10%	\$7,290			
	<b>Course Expenses</b>		<b>\$14,958</b>	<b>\$14,958</b>		<b>\$149,580</b>
	Marketing	5%	\$21,870			\$21,870
	Program Coordinator	10%	\$43,740			\$43,740
	<b>Total Expenses</b>					<b>\$215,190</b>
	<b>Net</b>					<b>\$270,810</b>