

**PROGRAM APPROVAL APPLICATION**  
**NEW or SUBSTANTIAL CHANGE or LOCALLY APPROVED**  
**(This application may not exceed 3 pages)**

**Fill In Form**

BioMedical Illustration

Proposed Program Title

Saddleback Community College

College

South Orange County CC District

District

Fall 2016

Projected Program Start Date

Anthony Teng

Voting Member

Dean, BS/Econ Wkforce Dev & ATAS

Title

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Phone Number

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E-mail Address

**Goal(s) of Program (Check all that apply):**

- Career Technical Education (CTE)       Transfer       Other

**Type of Program (Check all that apply):**

- A.S. Degree       A.A. Degree      Certificate of Achievement:  
 18+ semester (or 27+ quarter) units  
 12-18 semester (or 18-27 quarter) units

**Reason for Approval Request: (Check One)**

- New Program       Substantial Change       Locally Approved

**Program Information**

Recommended Taxonomy of Program (TOP) Code      06  
Units for Major-Degree      [Click here to enter text.](#)  
Total Units for Degree      [Click here to enter text.](#)  
Required Units-Certificate      29

## Written Form

1. Insert the description of the program as it will appear in the catalog.

BioMedical illustration is a unique discipline combining design, science, art, communication, and media technology. BioMedical illustrators work in a variety of media and industries to create work that transforms complex information and data into images that explain, inform, and record scientific research and discoveries.

2. Provide a brief rationale for the program.

Southern California is home to one of the largest concentrations of medical, scientific, and biomedical firms in the country. There are over 900 biomedical and life science companies in the San Diego and Orange County area doing research, developing medications, treatments and medical devices. In California only CSU Monterey Bay and UC San Jose in have degree programs in scientific illustration, there are currently no undergraduate or certificate programs in the state. The need for illustrators in this industry has remained steady and is increasing. Medical Illustrations and animations appear in virtually all media markets used to disseminate medical, biological and related information. These can include textbooks and journals, web, television, patient education, museums, veterinary, dental, trade shows, pharmaceutical advertising, and medical illustration used by attorneys and law enforcement to clarify complex medical information for judges and juries.

3. List all courses required for program completion, including core requirements, restricted electives and prerequisites. (Push Enter after each entry to begin a new line)

Courses	Course No.	Course Title	Units
Digital Illustration	GD 149	Click here to enter text.	3
Digital Animation	GD 150		3
Drawing from the Live Model	ART 85		3
Drawing I	ART 80		3
Intro to Biology	BIO 20		4
Photoshop for the Graphic Designer	GD 200		3
Human Anatomy and Physiology	BIO 113		4
Advanced Digital Illustration (New)	GD		3
BioMedical Illustration (New)	GD		3

4. Summarize the Labor Market Information and employment outlook (including citation of the source of the data) for students exiting the program.

Current EMSI data for illustrators shows a 1.2% jobs increase regionally and a 2.0 increase nationally. There is no data specific to BioMedical or Medical illustration program or completion rates because there are no programs currently in existence. Industry data (shown in charts below) show BioMedical industry overall growth at 2.8% in 2014. Salary information from the Association of Medical Illustrators (<http://www.ami.org/index.php/medical-illustration/enter-the->

profession/careers), the largest and oldest association of it's kind, states: "The median salary for a medical illustrator is \$61,000 and can range up to \$150,000. Those in supervisory and director positions earn a median of \$75,000 and \$93,000 per year respectively (2009 AMI survey data). About 46% of salaried illustrators supplement their income with freelance work. Currently, the employment outlook for medical illustrators is good due to the highly specialized nature of our work and the relatively limited number of medical illustrators graduating each year. Our profession remains very viable due to growth in medical research that continually reveals new treatments and technologies that require medical illustrations and animations to explain them. According to the U.S. Bureau of Labor and Statistics, "Demand for multimedia artists and animators will increase as consumers continue to demand more realistic video games, movie and television special effects, and 3D animated movies. Additional job openings will arise from an increasing need for computer graphics in the growing number of mobile technologies. The demand for animators is also increasing in alternative areas such as scientific research and design services." (Association of Medical Illustrators)

**LIFE SCIENCES IMPACT: ECONOMIC ACTIVITY IN KEY SUPPORT INDUSTRIES**

SECTOR	IMPERIAL	ORANGE	RIVERSIDE	SAN DIEGO	TOTAL
Accounting & Tax Preparation	\$ 635,509	\$ 145,247,986	\$ 15,291,047	\$ 133,853,291	\$ 295,027,833
Insurance	\$ 790,978	\$ 592,938,538	\$ 45,406,682	\$ 583,104,482	\$ 1,222,240,680
Legal Services	\$ 719,587	\$ 297,772,394	\$ 23,966,479	\$ 456,756,432	\$ 779,214,892
Recruitment & Administrative Services	\$ 483,271	\$ 221,865,693	\$ 38,624,047	\$ 351,474,162	\$ 612,447,173
Financial Services	\$ 10,943,351	\$ 864,727,256	\$ 115,533,722	\$ 1,068,653,361	\$ 2,059,857,690
Marketing, Advertising, and Communications	\$ 143,360	\$ 173,148,042	\$ 26,616,420	\$ 114,595,107	\$ 314,502,929
Real Estate	\$ 10,543,572	\$ 961,500,312	\$ 240,546,534	\$ 1,589,267,580	\$ 2,801,857,998

By 2014, employment in the region is expected to be 4.8 million, an increase of about 155,000 jobs over 2012. Imperial County expects to add more than 4,500 new jobs, a 6.3% increase from 2012

Source: IMPLAN

**LIFE SCIENCES IMPACT: EMPLOYMENT CREATED IN KEY SUPPORT INDUSTRIES**

SECTOR	IMPERIAL	ORANGE	RIVERSIDE	SAN DIEGO	TOTAL
Accounting & Tax Preparation	12	1,123	215	1,233	2,583
Insurance	6	1,998	202	2,221	4,427
Legal Services	6	1,434	155	2,190	3,785
Recruitment & Administrative Services	11	3,629	739	4,901	9,280
Financial Services	49	4,014	507	5,184	9,754
Marketing, Advertising, and Communications	1	1,368	193	902	2,464
Real Estate	58	4,319	1,484	8,581	14,442

Source: IMPLAN

**FORECASTED EMPLOYMENT CHANGE 2012-2014**

AREA	2012	2014	%CHANGE
United States	179,134,597	184,438,243	3.0%
California	20,631,126	21,287,591	3.2%
<b>COUNTY</b>			
San Diego	1,856,795	1,910,641	2.9%
Orange	1,911,961	1,969,891	3.0%
Riverside	833,400	872,830	4.7%
Imperial	73,294	77,944	6.3%
<b>REGIONAL TOTAL</b>	<b>4,675,450</b>	<b>4,831,306</b>	<b>2.8%</b>

Source: EMSI Employment Complete, T. Clower & Associates

- List similar programs at other colleges in the Los Angeles and Orange County Region which may be adversely impacted. (Push Enter after each entry to begin a new line)

College	Program	Who you Contacted	Outcome of Contact
There are no other community colleges in the area offering this certificate	Click here to enter text.	Click here to enter text.	Click here to enter text.

- Include any other information you would like to share.  
Click here to enter text.