



CENTER OF EXCELLENCE  
FOR LABOR MARKET RESEARCH  
**ORANGE COUNTY**

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ORANGE COUNTY SECTOR PROFILE  
SUPPLEMENTAL APPENDICES:  
**INFORMATION AND  
COMMUNICATION  
TECHNOLOGIES (ICT)/  
DIGITAL MEDIA**  
**2024**

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**ORANGE COUNTY  
REGIONAL CONSORTIUM**

**WORKFORCE  
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# INTRODUCTION

The Orange County Center of Excellence for Labor Market Research (OC COE) is releasing a series of 12 sector profiles to provide a comprehensive analysis of Orange County's occupational landscape. This series dives into each of the 12 community college sectors, offering historical and projected occupational insights while building upon foundational research established through the Orange County Labor Market Overview.

In addition to the profiles themselves, supplemental appendices for each sector are being issued to provide detailed demand and supply data. The data in these appendices are presented to the region with the intent of being utilized for grant applications, project proposals, and the like. The full [ICT/Digital Media Sector Profile](#) is available on the COE Website.

Occupations are denoted throughout this report in italics, with their corresponding SOC code in parentheses. Middle-skill occupations have no special notation however, below middle-skill occupations are denoted with an \* and above middle-skill occupations denoted with a ^. Occupations that are on U.S. News & World Report's 2024 100 Best Jobs list are denoted by a #, such as, '*Software Developers (15-1252)^#*'.

By examining this labor market data, in conjunction with the individual sector profiles, the OC COE seeks to highlight underlying dynamics and intricacies shaping each sector in Orange County. Community colleges and regional stakeholders can use this information for strategic planning and data-informed decision making to address workforce needs in this sector.

## APPENDIX D: ICT/DIGITAL MEDIA DEMAND – LABOR MARKET DATA

Exhibit 25 shows the traditional labor market data points for all 49 occupations analyzed in the ICT/Digital Media Sector Profile. Below middle-skill occupations are indicated with light shading, middle-skill occupations are denoted with medium shading, and above middle-skill occupations are indicated with dark shading.

**Exhibit 25: Occupational Demand for the 49 ICT/Digital Media Occupations**

Skill Level	SOC	Occupation	2022 Jobs	2027 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
Below Middle-Skill	27-2042	Musicians and Singers*	1,560	1,569	9	1%	216	\$16.07	\$33.57	\$57.56	No formal educational credential	None	Long-term on-the-job training
	27-2031	Dancers*	838	930	93	11%	170	\$16.54	\$18.70	\$23.23	No formal educational credential	None	Long-term on-the-job training
	27-2099	Entertainers and Performers, Sports and Related Workers, All Other*	624	706	82	13%	91	\$18.18	\$20.15	\$33.78	No formal educational credential	None	Short-term on-the-job training
	27-3099	Media and Communication Workers, All Other*	704	710	6	1%	66	\$22.15	\$34.27	\$72.94	High school diploma or equivalent	None	Short-term on-the-job training
	39-3092	Costume Attendants*	164	187	23	14%	51	\$20.76	\$26.84	\$28.70	High school diploma or equivalent	None	Short-term on-the-job training
	27-1019	Artists and Related Workers, All Other*	347	384	36	10%	45	\$5.98	\$18.20	\$45.83	No formal educational credential	None	Long-term on-the-job training
	27-4015	Lighting Technicians*	270	302	32	12%	34	\$24.08	\$35.39	\$57.26	High school diploma or equivalent	None	Short-term on-the-job training
	27-4099	Media and Communication Equipment Workers, All Other*	277	286	9	3%	29	\$20.80	\$28.33	\$38.43	High school diploma or equivalent	None	Short-term on-the-job training
	27-2091	Disc Jockeys, Except Radio*	120	134	14	12%	13	\$14.61	\$19.76	\$36.09	No formal educational credential	None	Short-term on-the-job training
	43-2021	Telephone Operators*	36	34	(1)	(3%)	5	\$25.08	\$26.14	\$26.78	High school diploma or equivalent	None	Short-term on-the-job training
43-2099	Communications Equipment Operators, All Other*	19	20	1	4%	3	\$14.00	\$14.00	\$14.84	High school diploma or equivalent	None	Short-term on-the-job training	
	15-1232	Computer User Support Specialists	7,922	8,262	340	4%	691	\$25.12	\$31.11	\$38.26	Some college, no degree	None	None

Skill Level	SOC	Occupation	2022 Jobs	2027 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
Middle-Skill	27-4021	Photographers	2,262	2,553	290	13%	270	\$14.96	\$26.95	\$48.75	High school diploma or equivalent	None	Moderate-term on-the-job training
	27-2011	Actors	1,677	1,875	199	12%	262	\$14.05	\$14.15	\$20.93	Some college, no degree	None	Long-term on-the-job training
	15-1244	Network and Computer Systems Administrators	2,959	3,056	96	3%	221	\$35.61	\$46.28	\$60.05	Bachelor's degree	None	None
	15-1255	Web and Digital Interface Designers	1,940	2,118	178	9%	204	\$25.00	\$33.93	\$54.97	Bachelor's degree	None	None
	15-1231	Computer Network Support Specialists	1,415	1,489	74	5%	126	\$26.74	\$35.20	\$45.00	Associate degree	None	None
	15-1254	Web Developers <sup>#</sup>	1,151	1,266	115	10%	112	\$23.61	\$38.31	\$54.27	Bachelor's degree	None	None
	15-1241	Computer Network Architects <sup>#</sup>	1,590	1,628	37	2%	108	\$40.71	\$56.63	\$73.89	Bachelor's degree	5 years or more	None
	27-2032	Choreographers <sup>#</sup>	383	449	66	17%	84	\$18.75	\$28.70	\$32.80	High school diploma or equivalent	5 years or more	Long-term on-the-job training
	27-4012	Broadcast Technicians	725	759	35	5%	77	\$34.05	\$43.10	\$55.72	Associate degree	None	Short-term on-the-job training
	27-4011	Audio and Video Technicians	579	665	86	15%	76	\$21.24	\$30.64	\$47.06	Postsecondary nondegree award	None	Short-term on-the-job training
	27-4014	Sound Engineering Technicians	343	377	34	10%	41	\$20.04	\$29.43	\$54.31	Postsecondary nondegree award	None	Short-term on-the-job training
	43-9031	Desktop Publishers	85	88	4	4%	11	\$17.74	\$27.24	\$37.76	Associate degree	None	Short-term on-the-job training
	49-9061	Camera and Photographic Equipment Repairers	24	25	2	8%	3	\$15.12	\$19.15	\$19.34	High school diploma or equivalent	None	Long-term on-the-job training
Above Middle-Skill	15-1252	Software Developers <sup>^#</sup>	18,171	20,123	1,952	11%	1,649	\$50.42	\$64.14	\$80.79	Bachelor's degree	None	None
	11-3021	Computer and Information Systems Managers <sup>^#</sup>	7,643	8,110	466	6%	667	\$62.26	\$80.73	\$101.21	Bachelor's degree	5 years or more	None
	15-1299	Computer Occupations, All Other <sup>^</sup>	7,190	7,408	218	3%	562	\$28.38	\$44.24	\$63.02	Bachelor's degree	None	None
	27-1024	Graphic Designers <sup>^</sup>	4,904	4,899	(6)	0%	448	\$21.10	\$31.91	\$44.39	Bachelor's degree	None	None
	15-1211	Computer Systems Analysts <sup>^#</sup>	5,164	5,433	270	5%	425	\$40.58	\$52.21	\$65.26	Bachelor's degree	None	None
27-2012	Producers and Directors <sup>^</sup>	2,240	2,349	110	5%	237	\$31.17	\$44.50	\$66.61	Bachelor's degree	Less than 5 years	None	

Skill Level	SOC	Occupation	2022 Jobs	2027 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
Above Middle-Skill	15-2051	Data Scientists <sup>^#</sup>	2,151	2,496	345	16%	233	\$34.97	\$48.14	\$69.22	Bachelor's degree	None	None
	27-1011	Art Directors <sup>^#</sup>	2,025	2,029	5	0%	215	\$30.85	\$50.02	\$72.87	Bachelor's degree	5 years or more	None
	15-1253	Software Quality Assurance Analysts and Testers <sup>^</sup>	2,194	2,383	189	9%	200	\$37.59	\$49.96	\$61.92	Bachelor's degree	None	None
	15-1212	Information Security Analysts <sup>^#</sup>	1,181	1,386	205	17%	133	\$45.67	\$59.61	\$70.68	Bachelor's degree	Less than 5 years	None
	27-1014	Special Effects Artists and Animators <sup>^</sup>	1,152	1,180	28	2%	128	\$27.47	\$47.21	\$68.01	Bachelor's degree	None	None
	17-2072	Electronics Engineers, Except Computer <sup>^</sup>	1,834	1,814	(20)	(1%)	113	\$46.61	\$62.85	\$79.59	Bachelor's degree	None	None
	15-1251	Computer Programmers <sup>^</sup>	1,642	1,587	(55)	(3%)	112	\$33.54	\$47.28	\$61.64	Bachelor's degree	None	None
	15-1242	Database Administrators <sup>^</sup>	801	844	43	5%	65	\$34.95	\$48.01	\$63.29	Bachelor's degree	None	None
	27-2041	Music Directors and Composers <sup>^</sup>	587	615	28	5%	64	\$23.58	\$38.20	\$61.85	Bachelor's degree	Less than 5 years	None
	27-1027	Set and Exhibit Designers <sup>^</sup>	588	611	23	4%	63	\$20.06	\$32.13	\$50.71	Bachelor's degree	None	None
	27-4032	Film and Video Editors <sup>^</sup>	449	471	22	5%	49	\$20.71	\$30.55	\$54.13	Bachelor's degree	None	None
	27-4031	Camera Operators, Television, Video, and Film <sup>^</sup>	346	360	14	4%	37	\$18.16	\$31.65	\$38.02	Bachelor's degree	None	None
	27-3023	News Analysts, Reporters, and Journalists <sup>^</sup>	320	282	(38)	(12%)	36	\$18.19	\$23.60	\$36.89	Bachelor's degree	None	None
	15-1243	Database Architects <sup>^</sup>	403	432	29	7%	34	\$50.08	\$64.08	\$79.72	Bachelor's degree	None	None
	27-3011	Broadcast Announcers and Radio Disc Jockeys <sup>^</sup>	257	223	(34)	(13%)	24	\$48.74	\$56.70	\$65.34	Bachelor's degree	None	None
	15-1221	Computer and Information Research Scientists <sup>^</sup>	250	278	28	11%	24	\$60.93	\$82.81	\$159.32	Master's degree	None	None
	43-9081	Proofreaders and Copy Markers <sup>^</sup>	74	70	(3)	(5%)	10	\$18.34	\$25.89	\$33.59	Bachelor's degree	None	None
17-1021	Cartographers and Photogrammetrists <sup>^#</sup>	76	82	6	8%	7	\$34.46	\$44.60	\$48.57	Bachelor's degree	None	None	

## APPENDIX E: ICT/DIGITAL MEDIA SUPPLY – COMMUNITY COLLEGE AND NON-COMMUNITY COLLEGE AWARDS

This appendix provides labor market supply information, which equates to educational awards, for the ICT/Digital sector.

Exhibit 26 shows the distribution of community college awards in Orange County by program in the ICT/Digital Media.

**Exhibit 26: ICT/Digital Media Community College Awards by Program, 2020-2023**

TOP	Program	2020-2021 Awards	2021-2022 Awards	2022-2023 Awards	3-Year Award Average
0602.00	Journalism	72	48	39	53
0604.00	Radio and Television	100	145	113	119
0604.10	Radio	5	-	3	3
0604.20	Television (including combined TV/film/video)	96	149	155	133
0604.30	Broadcast Journalism	-	-	-	-
0607.00	Technical Communication	1	5	1	2
0610.00	Mass Communications	-	-	-	-
0612.20	Film Production	26	32	30	29
0614.00	Digital Media	25	48	106	60
0614.10	Multimedia	9	11	10	10
0614.20	Electronic Game Design	-	-	24	8
0614.30	Website Design and Development	28	28	21	26
0614.40	Animation	4	3	13	7
0614.50	Desktop Publishing	11	24	28	21
0614.60	Computer Graphics and Digital Imagery	39	37	31	36
0699.00	Other Media and Communications	-	-	-	-
0701.00	Information Technology, General	3	9	25	12
0702.00	Computer Information Systems	49	71	70	63
0702.10	Software Applications	69	115	131	105
0707.00	Computer Software Development	18	19	17	18
0707.10	Computer Programming	238	196	292	242

<b>TOP</b>	<b>Program</b>	<b>2020-2021 Awards</b>	<b>2021-2022 Awards</b>	<b>2022-2023 Awards</b>	<b>3-Year Award Average</b>
0707.20	Database Design and Administration	2	2	7	4
0707.30	Computer Systems Analysis	-	-	-	-
0708.00	Computer Infrastructure and Support	109	126	118	118
0708.10	Computer Networking	206	198	224	209
0708.20	Computer Support	3	13	15	10
0709.00	World Wide Web Administration	3	3	3	3
0709.10	E-Commerce (technology emphasis)	-	2	2	1
0799.00	Other Information Technology	1	-	5	2
0934.30	Telecommunications Technology	-	-	-	-
1005.00	Commercial Music	87	122	64	91
1012.00	Applied Photography	27	17	39	28
1013.00	Commercial Art	9	15	9	11
1030.00	Graphic Art and Design	85	91	93	90
2206.10	Geographic Information Systems	9	5	6	7
<b>Total/Average</b>		<b>1,334</b>	<b>1,534</b>	<b>1,694</b>	<b>1,521</b>

Exhibit 27 details ICT/Digital Media sector supply award counts by Orange County community college.

**Exhibit 27: ICT/Digital Media Community College Awards by College, 2020-2023**

College	2020-2021 Awards	2021-2022 Awards	2022-2023 Awards	3-Year Award Average
Coastline	178	161	194	178
Cypress	120	153	214	162
Fullerton	189	184	191	188
Golden West	33	20	14	22
Irvine Valley	95	147	142	128
North Orange Adult	-	-	-	-
Orange Coast	334	329	391	351
Saddleback	251	356	289	299
Santa Ana	117	171	242	177
Santiago Canyon	17	13	17	16
<b>Total/Average</b>	<b>1,334</b>	<b>1,534</b>	<b>1,694</b>	<b>1,521</b>

Exhibit 28 provides the number of ICT/Digital Media sector awards conferred by non-community college programs.

**Exhibit 28: ICT/Digital Media Non-Community College Awards by Program, 2019-2022**

CIP	Program	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
09.0102	Mass Communication/Media Studies	10	8	14	11
09.0401	Journalism	-	-	-	-
09.0402	Broadcast Journalism	33	30	25	29
09.0701	Radio and Television	185	177	146	169
09.0702	Digital Communication and Media/Multimedia	2	1	34	12
10.0201	Photographic and Film/Video Technology/Technician	-	1	-	0
10.0304	Animation, Interactive Technology, Video Graphics, and Special Effects	53	47	52	51
11.0101	Computer and Information Sciences, General	50	61	84	65
11.0103	Information Technology	75	82	97	85
11.0199	Computer and Information Sciences, Other	-	-	-	-

CIP	Program	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
11.0201	Computer Programming/Programmer, General	4	-	-	1
11.0701	Computer Science	1,286	1,438	1,327	1,350
11.0801	Web Page, Digital/Multimedia and Information Resources Design	-	3	4	2
11.0803	Computer Graphics	-	-	-	-
11.0901	Computer Systems Networking and Telecommunications	26	20	9	18
11.1001	Network and System Administration/Administrator	1	1	1	1
11.1006	Computer Support Specialist	26	17	24	22
11.9999	Computer and Information Sciences and Support Services, Other	-	-	-	-
30.7101	Data Analytics, General	3	7	8	6
45.0702	Geographic Information Science and Cartography	2	2	1	2
50.0409	Graphic Design	62	57	62	60
50.0411	Game and Interactive Media Design	43	50	34	42
50.0602	Cinematography and Film/Video Production	193	165	292	217
50.0903	Music Performance, General	69	69	71	70
<b>Total/Average</b>		<b>2,123</b>	<b>2,236</b>	<b>2,285</b>	<b>2,215</b>

Exhibit 29 includes the number of awards conferred by non-community college institutions.

#### Exhibit 29: Non-Community College Awards by Institution, 2019-2022

Institution	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
California Arts University	5	1	-	2
California Intercontinental University	3	1	1	2
California State University-Fullerton	656	684	622	654
Chapman University	320	309	451	360
Concordia University-Irvine	10	7	12	10
Laguna College of Art and Design	101	101	84	95
Platt College-Anaheim	19	17	12	16

<b>Institution</b>	<b>2019-2020 Awards</b>	<b>2020-2021 Awards</b>	<b>2021-2022 Awards</b>	<b>3-Year Award Average</b>
Southern California Institute of Technology	36	24	29	30
University of California-Irvine	925	1,028	888	947
University of Massachusetts Global	45	53	61	53
Vanguard University of Southern California	3	1	-	1
Westcliff University	-	10	125	45
<b>Total/Average</b>	<b>2,123</b>	<b>2,236</b>	<b>2,285</b>	<b>2,215</b>



### Important Disclaimers

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

The OC COE would like to acknowledge and thank Juan Madrigal for his work and contributions to this report.

Prepared by the Orange County Center of Excellence for Labor Market Research:

Jesse Crete, Ed. D, Director

Jacob Poore, Assistant Director

Diego Mosquera, Research Analyst



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