DIXIE STATE UNIVERSITY
MISSION PRESENTATION

DSU

REGENT POLICY 312:
INSTITUTIONAL MISSION ROLES

4.2. Regional Universities: The regional university's role is to provide open-access academic and career and technical education, undergraduate associate and baccalaureate programs and select graduate degree programs to fill regional or state workforce demands. Career and Technical Education programs are designed to meet workforce needs, lead to a certificate or degree, and include general education coursework. Articulation agreements allow students to transfer seamlessly from institutions offering Technical Education to CTE and academic pathways. Regional universities emphasize teaching, scholarly, and creative achievements that complement pedagogy, learning, and community service. The institution is a leading contributor to the quality of life and economic development at the local and state levels. Student success is supported through developmental programs and services associated with a comprehensive community college.

2015 - INITIAL STRATEGIC PLANNING PROCESS

Interviewed hundreds of Washington County business people, students, organizations, and community leaders

Q. What do you need from the university?

A. Engineers, computer programmers, technology experts, chemists/biologists, management, healthcare professionals

THE PROBLEM

Regional industry lacks the skilled tech talent they need to fill positions, grow, and solve 21st century problems

2016

Already in place:

- K-12 STEM Pipeline

- STEM programs

- Partnerships in technology innovation

K–16 PIPELINE
active learning. active life.

41,800 K–12 STUDENTS FROM FIVE SOUTHERN UTAH COUNTIES *

STEM.DIXIE.EDU

Pipeline labels:
- R2MC
- eSMART
- CSI:DSU
- SUCCESS ACADEMY
- CODE SCHOOL
- MACHINE LEARNING
- GENE GIRLS
- CYBERSECURITY
- CONCURRENT ENROLLMENT
- ENTREPRENEURSHIP
- INTERNSHIPS
- STEM ACADEMY
- ACE ACADEMY
- CODE CAMP
- FIRST® LEGO® LEAGUE
- MATH CAMPS
- STEM GIRLS
- MAKERSPACE
- DIXIE PREP
- WEAR TEC

Our Goal
is to build and sustain an educational and engaging course of study for students and community members in Southern Utah.

Our programs prepare participants to fill the demand for qualified tech talent in the local private sector and fuel the robust regional labor market.

Come explore with us!
STEM Outreach Center
453 South 600 East
St. George, Utah
stem@dixie.edu

COLLEGE OF SCIENCE ENGINEERING & TECHNOLOGY

https://colleges.dixie.edu/science/

25K OPEN JOBS IN REGIONAL TECH MARKET
indeed.com

Internships
University level

STEM
Red Rock Math Circle: grade 6
Dixie PREP: grades 6–8
Math Camps: grades 9–12
SUCCESS Academy: grades 10–12
ACE Academy: grades 9-12
Concurrent Enrollment: grades 9–12

Technology
Code Camp: grades K–adult
eSmart: girls grade 8
STEM Girls: grades K–8
Cybersecurity: grades 8-10
Code School: grade 12–adult

Entrepreneurship
University level, adult

Biotech/Biology/Physical Science
Gene Girls: grades 9–10
CSI: Dixie State University: grades 9–12

Engineering
FIRST® LEGO® League: grades pre-K–8
Engineering Camps: grades 6–12
Makerspace: grades 5–adult
STEM Academy: grades K–8
Wear TEC: grades 4–6

*Beaver, Garfield, Iron, Kane, Washington

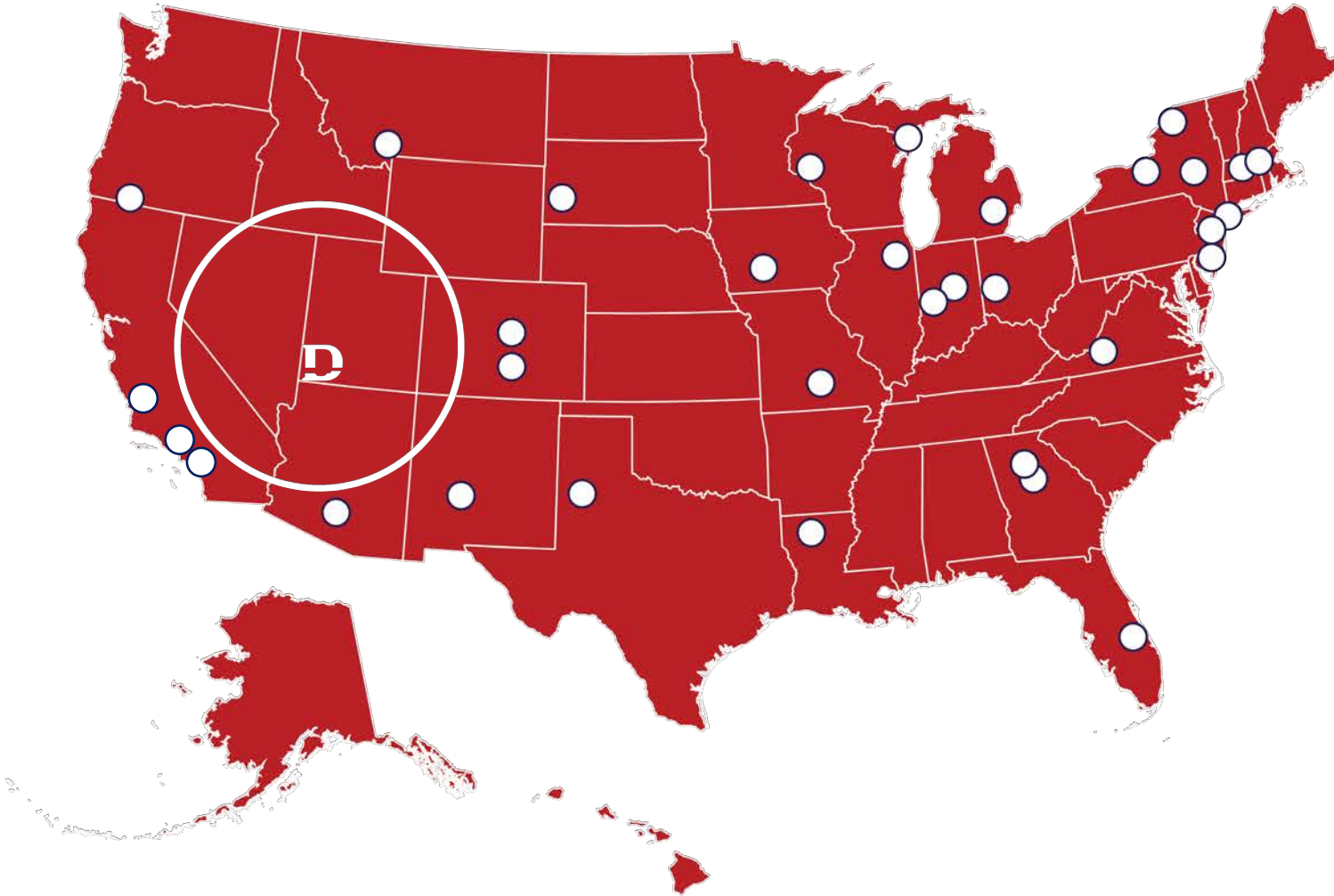# Active Learning.Active Life.
(Learn-by-Doing)

ACTIVE LEARNING (LEARN-BY-DOING) +
STEM INTENSIVE DEGREE PROGRAMMING =
POLYTECHNIC ACADEMIC MODEL

DO WE NEED INSTITUTIONS WITH A POLYTECHNIC MODEL IN THE STATE OF UTAH?

4,700+ DEGREE-GRANTING INSTITUTIONS IN THE USA

32 INSTITUTES OF TECHNOLOGY/POLYTECHNICS

ACADEMIC PROGRAMMING MODEL

← COMPREHENSIVE →

| EDUCATION | ARTS | BUSINESS | HUMANITIES AND SOCIAL SCIENCES |

← INTENSIVE →

STEM
INCLUDING HEALTH SCIENCES

111 NEW PROGRAMS SINCE 2015

(81% STEM focused)

2020-2025
STRATEGIC PLANNING PROCESS

2050

YEAR (POP)	COMPARABLE CITY
2035 (287 K)	PITTSBURGH
2045 (355 K)	CLEVELAND
2055 (429 K)	KANSAS CITY

PITTSBURGH	= 6 UNIVERSITIES
CLEVELAND	= 6 UNIVERSITIES
KANSAS CITY	= 4 UNIVERSITIES

Source: **Kem C. Gardner Policy Institute 2015-2065 State and County Projections**
DemographyUTAH Population Committee 2010-2016 Population Estimates.

Table 1
Utah Population by County
2015-2065

County	2015	2025	2035	2045	2055	2065	Absolute Change 2015-2065	Percent Change 2015-2065	Rank
Beaver	6,710	7,408	8,017	8,606	9,068	9,649	2,939	44%	26
Box Elder	52,971	60,984	67,664	74,440	80,334	86,218	33,247	63%	11
Cache	121,855	146,338	171,969	195,325	212,908	234,744	112,890	93%	7
Carbon	21,164	24,343	26,870	29,069	31,240	33,144	11,980	57%	16
Daggett	1,113	1,232	1,387	1,502	1,603	1,723	610	55%	17
Davis	336,091	385,800	428,627	474,028	510,712	544,958	208,867	62%	12
Duchesne	20,821	24,277	26,596	29,178	31,205	33,153	12,332	59%	14
Emery	10,659	11,550	12,507	13,345	14,226	15,364	4,706	44%	25
Garfield	5,164	5,845	6,405	6,697	7,083	7,509	2,345	45%	24
Grand	9,757	11,182	12,203	13,266	14,139	14,794	5,037	52%	21
Iron	49,406	59,900	67,803	74,812	81,589	89,599	40,193	81%	8
Juab	11,071	15,789	19,925	23,307	26,498	30,069	18,998	172%	4
Kane	7,271	8,684	9,611	10,179	10,736	11,446	4,175	57%	15
Millard	13,104	14,403	15,619	16,605	17,435	18,617	5,514	42%	28
Morgan	11,080	15,613	19,349	21,357	22,678	24,605	13,525	122%	5
Piute	1,631	1,699	1,872	1,938	1,995	2,149	518	32%	29
Rich	2,353	2,535	2,773	2,992	3,158	3,380	1,027	44%	27
Salt Lake	1,094,650	1,249,961	1,361,099	1,470,574	1,594,804	1,693,513	598,863	55%	18
San Juan	15,902	17,932	19,330	20,562	21,775	23,316	7,413	47%	23
Sanpete	29,088	33,696	38,580	41,682	44,609	49,590	20,502	70%	10
Sevier	21,238	24,494	26,896	28,879	30,774	32,802	11,563	54%	20
Summit	39,278	46,404	54,706	60,644	65,624	70,750	31,472	80%	9
Tooele	63,262	83,922	102,338	115,463	125,291	134,272	71,010	112%	6
Uintah	37,396	42,077	45,978	50,609	54,523	57,766	20,370	54%	19
Utah	585,694	768,346	968,498	1,192,304	1,396,997	1,620,246	1,034,552	177%	3
Wasatch	28,613	42,027	54,218	64,526	73,042	82,018	53,406	187%	2
Washington	154,602	219,019	286,768	355,549	429,295	508,952	354,350	229%	1
Wayne	2,725	2,985	3,363	3,593	3,792	4,130	1,405	52%	22
Weber	242,737	286,593	317,344	344,025	368,635	389,334	146,597	60%	13
State Total	**2,997,404**	**3,615,036**	**4,178,317**	**4,745,057**	**5,285,767**	**5,827,810**	**2,830,406**	**94%**	

CONVERGENCE OF THE PHYSICAL, DIGITAL, AND BIOLOGICAL WORLDS *(WORLD ECONOMIC FORUM)*

The Fourth Industrial Revolution

30 TECHNOLOGIES OF THE NEXT DECADE

#1 Artificial Intelligence
AI /Machine Learning / Deep Learning

#2 Internet of Things
IOT , IIOT, Sensors & Wearables

#3 Mobile/Social Internet
Advancements - Search/Social/ Messenging/Livestreams

#4 Blockchain
Distributed Ledger Systems, Cryptocurrencies & DApps

#5 Big Data
Apps, Infrastructure, Technologies + Predictive Analytics

#6 Automation
Information, Task, Process, Machine, Decision & Action

#7 Robots
Cons./Comm./Indus., Robots, Drones & Autonomous Vehicles

#8 Immersive Media
- #VR/ #AR/ #MR/ 360°/ Video?Gaming

#9 Mobile Technologies
Infrastructure, networks, standards, services & devices

#10 Cloud Computing.
SaaS, IaaS, PaaS & MESH Apps

#11 3D Printing
Additive Manufacturing & Rapid Prototyping

#12 CX
Customer Journey, Experience Commerce & Personalization

#13 EnergyTech
Efficiency, Energy Storage & Decentralized Grid

#14 Cybersecurity
Security, Intelligence Detection, Remediation & Adaptation

#15 Voice Assistants
Interfaces, Chatbots & Natural Language Processing

#16 Nanotechnology
Computing, Medicine, Machines + Smart Dust

#17 Collaborative Tech.
Crowd, Sharing, Workplace & Open Source Platforms & Tools

#18 Health Tech.
Advanced Genomics, Bionics & Health Care Tech.

#19 Human-Computer Interaction
Facial/Gesture Recognition, Biometrics, Gaze Tracking

#20 Geo-spatial Tech.
GIS, GPS, Mapping & Remote Sensing, Scanning, Navigation

#21 Advanced Materials
Composites, Alloys, Polymers, Biomimicry, Nanomanufacturing

#22 New Touch Interfaces
Touch Screens, Haptics, 3D Touch, Paper, Feedback & Exoskeletons

#23 Wireless Power

#24 Clean Tech.
Bio-/Enviro-Materials + Solutions, Sustainability, Treatment & Efficiency

#25 Quantum Computing
+ Exascale Computing

#26 Smart Cities
+ Infrastructure & Transport

#27 Edge/Computing
+ Fog Computing

#28 Faster, Better Internet
Broadband incl. Fiber, 5G, Li-Fi , LPN and LoRa

#29 Proximity Tech
Beacons, .RFID, Wi-Fi, Near-Field Communications & Geofencing

#30 New Screens
TVs, Digital Signage, OOH, MicroLEDS & Projections

TECH RIDGE

THE PROBLEM

12,000 - 25,000

- Number of open tech jobs within 300 miles of St. George/DSU with an average salary of $80,000

TRAILBLAZING
DISTINCTION
open. inclusive. comprehensive. polytechnic.
2020-2025

DSU™
DIXIE STATE UNIVERSITY
ST. GEORGE, UTAH

MISSION

Dixie State University is an open, inclusive, comprehensive, polytechnic university featuring active and applied learning to advance students' knowledge and skills while fostering competent, resilient, lifelong learners to succeed in their careers and personal lives as creators, innovators, and responsible citizens.
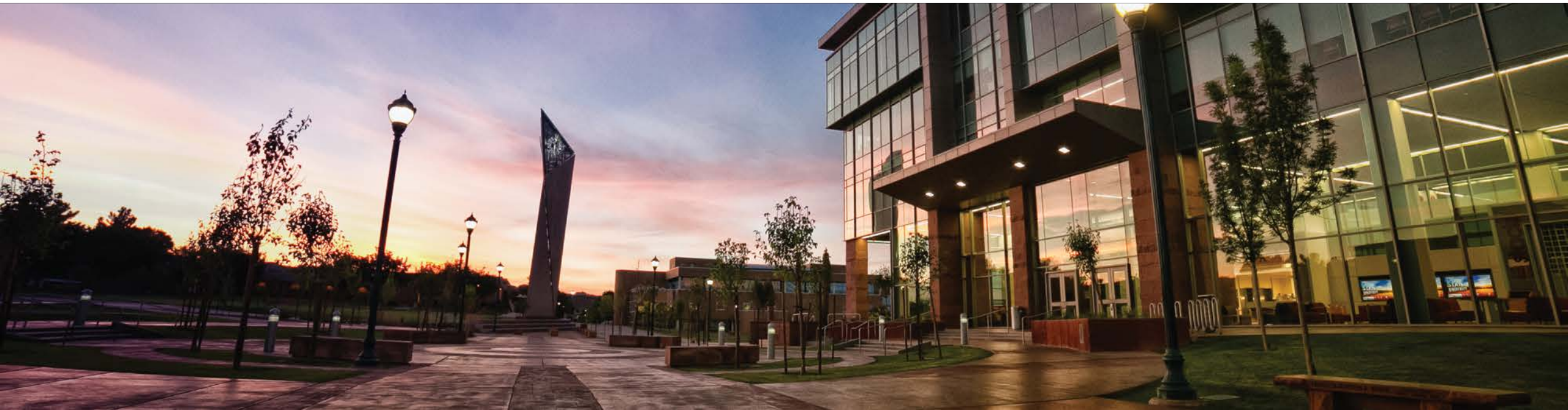
ELEMENTS OF THE MISSION

OPEN
INCLUSIVE
COMPREHENSIVE
POLYTECHNIC

ELEMENTS OF THE MISSION

PRINCIPLES OF OPEN EDUCATION

- Commitment to sharing, collaborating, transparency, and community

- Open access

- Open educational resources

- Open educational practices

- Recognition of formal and non-formal learning

- Collaboration with networks and community

- Open science, scholarship, innovation, & entrepreneurship

ELEMENTS OF THE MISSION

PRINCIPLES OF INCLUSION

- Equitable access and opportunity for diverse individuals to work, learn, and succeed

- Recruitment and retention of diverse faculty, staff, & students

- Inclusive pedagogy/andragogy

- Enabling of institutional support services

- Engagement with community services and human networks

ELEMENTS OF THE MISSION

PRINCIPLES OF COMPREHENSIVE

- Unique teaching and laboratory facilities

- Breadth of undergraduate programs

- Graduate programs and professional schools

- Diverse programs, initiatives, and people

- Community engagement

ELEMENTS OF THE MISSION

PRINCIPLES OF POLYTECHNIC

- Active and applied learning

- Career focus

- Authentic learning through industry partnerships

- Integrated liberal arts and science with STEM intensive programming

DOES DSU'S MISSION MEET THE DEFINITION OF A REGIONAL UNIVERSITY?

REGENT POLICY 312:
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COULD OTHER SCHOOLS IN UTAH BECOME POLYTECHNICS?

POLYTECHNIC MODEL STRATEGIC INITIATIVES

- Modify all curricular and co-curricular programs to align with the four tenets of the mission (10 strategies)

- Develop or modify programs to be career-focused and integrate with career services (10 strategies)

- Implement flexible credentialing that supports the recognition and certification of formal and non-formal learning through academic credits, stacked credentials, customized micro-credentials, digital badges, and competency-based credits (10 strategies)

CALIFORNIA SYSTEM ENCOURAGES HUMBOLT STATE UNIVERSITY TO BECOME STATE'S THIRD POLYTECHNIC UNIVERSITY

" I AM A BIG SUPPORTER OF CAL POLYS. WE HAVE TWO; WE WANT TO CREATE A THIRD."

Gov. Gavin Newsom

" THIS IS AN INCREDIBLE, TRANSFORMATIVE OPPORTUNITY."

HSU President Tom Jackson, Jr.

HUMBOLDT STATE UNIVERSITY

WILL A POLYTECHNIC MISSION EXCLUDE THE LIBERAL ARTS MAJORS?

- We will be a comprehensive polytechnic University:

  - Cal Poly

  - Florida Polytechnic University

  - Virginia Tech

  - Kansas State University Polytechnic

  - Texas Tech

- Polytechnics have strong liberal art foundations

POLYTECHNIC WORKS FOR ALL MAJORS

- BA/BS Applied Sociology

- BS Digital Film

- Master of Technical Writing and Digital Rhetoric

- Certificate in Piano Pedagogy

DO WE HAVE RESOURCES TO BUILD A POLYTECHNIC UNIVERSITY?

- This is where the jobs of the future are

- We must meet workforce demands

- Instructional method is in place

- Most affordable university (111 programs)

IS THERE OVERLAP WITH THE TECH COLLEGE SYSTEM?

- Increases collaboration and opportunities
- No intention for overlap
- We will eliminate overlap whenever necessary

DIXIE TECHNICAL COLLEGE/ DSU ARTICULATIONS

- General Technology w/Business Emphasis, AAS
- General Technology w/Design Emphasis, AAS
- General Technology w/Information Technology Emphasis, AAS
- Digital Media Design
- Drafting & Design
- Information Technology
- Medical Assisting
- Culinary Arts
- Automotive Technician
- Collision Repair
- Diesel Technician
- Industrial Automation Technician
- CNC Machining
- Operations Management
- Welding
- Pharmacy Technician
- Information Technology
- Digital Media Design
- Drafting & Design
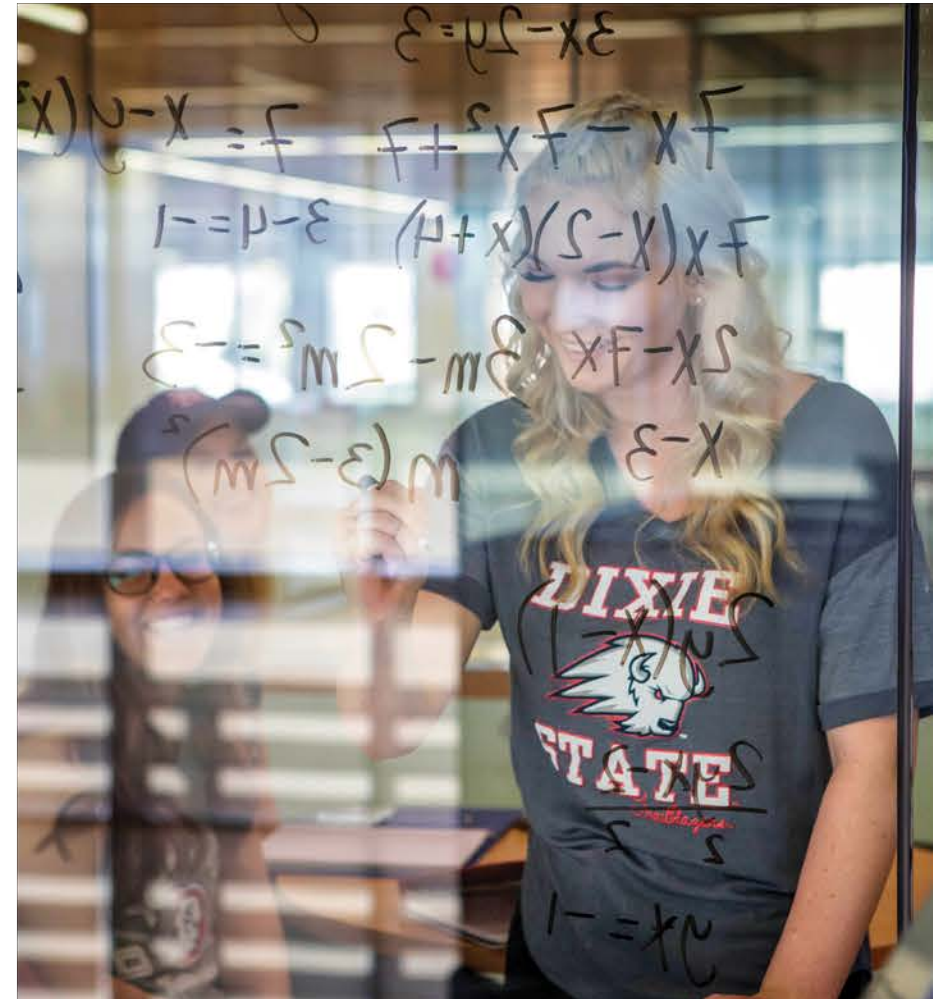
ON-AND OFF-RAMPS IN AN OPEN-POLYTECHNIC UNIVERSITY FOR MORE STUDENTS

DIXIE TECH

WORK

ACADEMIC PREP. C

WORK

WORK
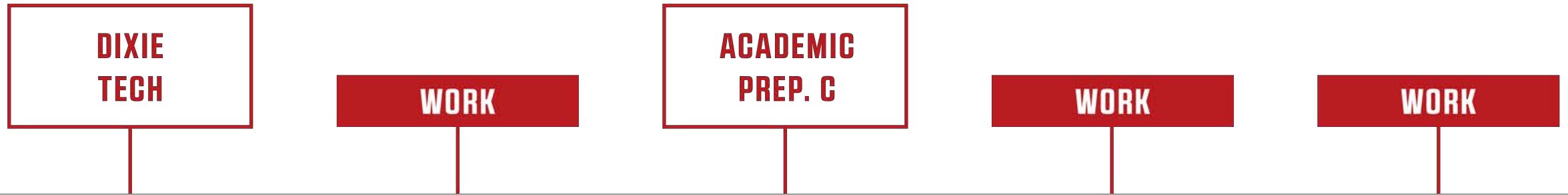
DSU ACADEMIC PROGRAMS

CERTIFICATES | ASSOCIATES | BACCALAUREATE | CPL | MICRO-CREDENTIALS | MASTER'S

ACADEMIC PREP. B

WORK

ACADEMIC PREP. D

WORK
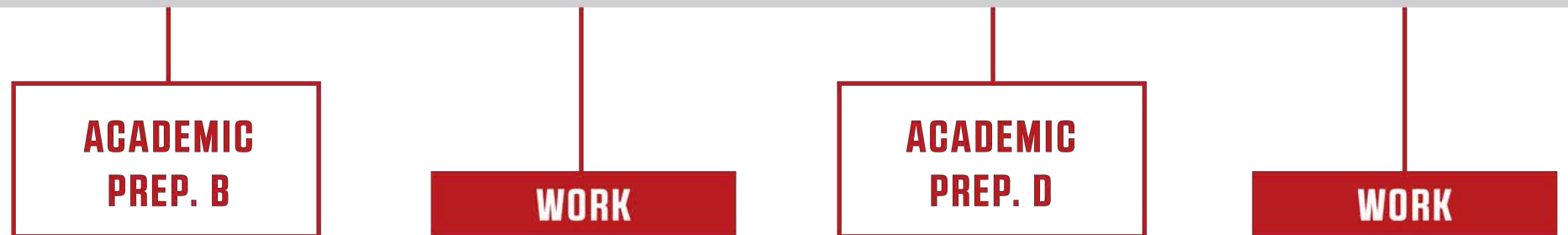
FOUR-YEAR · FOUR-AWARD MODEL

INDUSTRY CERTIFICATE

60 CREDITS

ASSOCIATE DEGREE

ADVANCED INDUSTRY CERTIFICATE

120 CREDITS

BACHELOR DEGREE

Certificate in Information Technology

AS in Information Technology

AAS in General Technology

Certificate in Advanced Information Technology

BS in Information Technology

Certificate in Design

Certificate in Advanced Design

BS in Design

COMPARING DIXIE TECH CERTIFICATES WITH DSU CERTIFICATES

- DSU Certificate Example:

  Web Design & Development (15 cr/hrs)

  - CS1410 Object Oriented Programming (3cr)

  - SE 3200 Web Application Development I (3 cr)

  - SE 3400 Human-Computer Interaction (3cr)

  - SE 4200 Web Application Development II (3 cr)

  - SE 4990 Special topics in Software Engineering (3cr)

- Offered only to matriculated DSU students

WILL THERE BE CONFUSION WITHIN THE STATE WITH A TECHNOLOGICAL UNIVERSITY AND THE TECH COLLEGE SYSTEM?

- Not having a mission focused technologic university creates the confusion
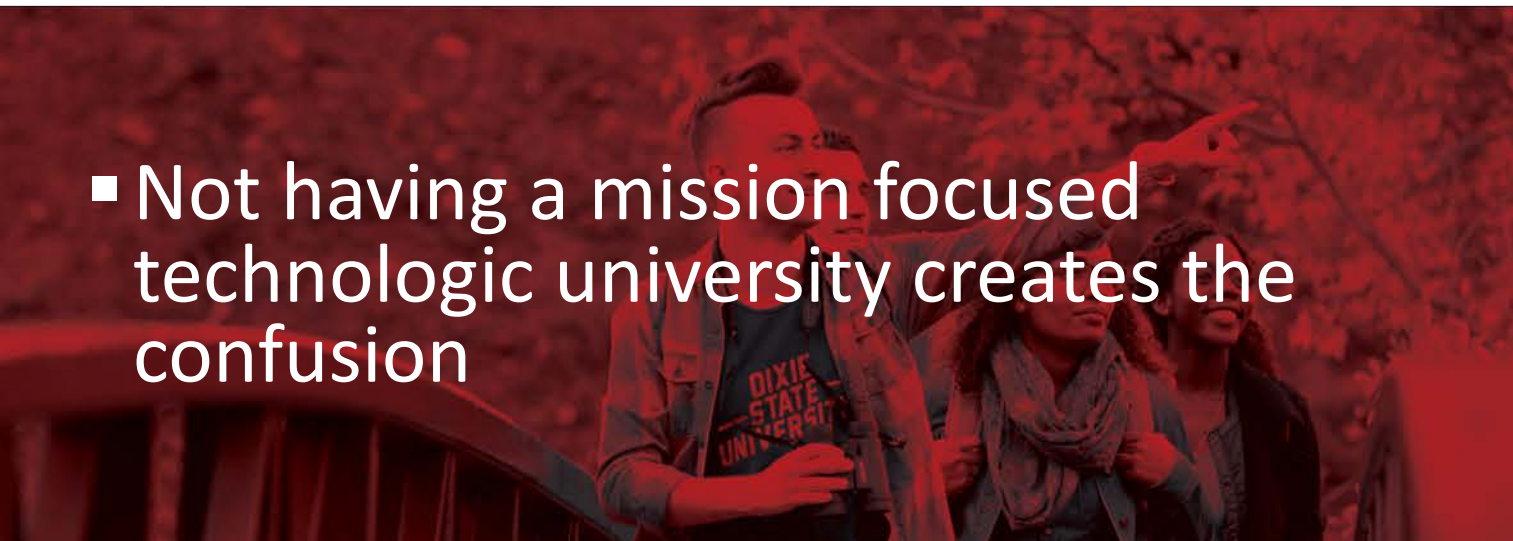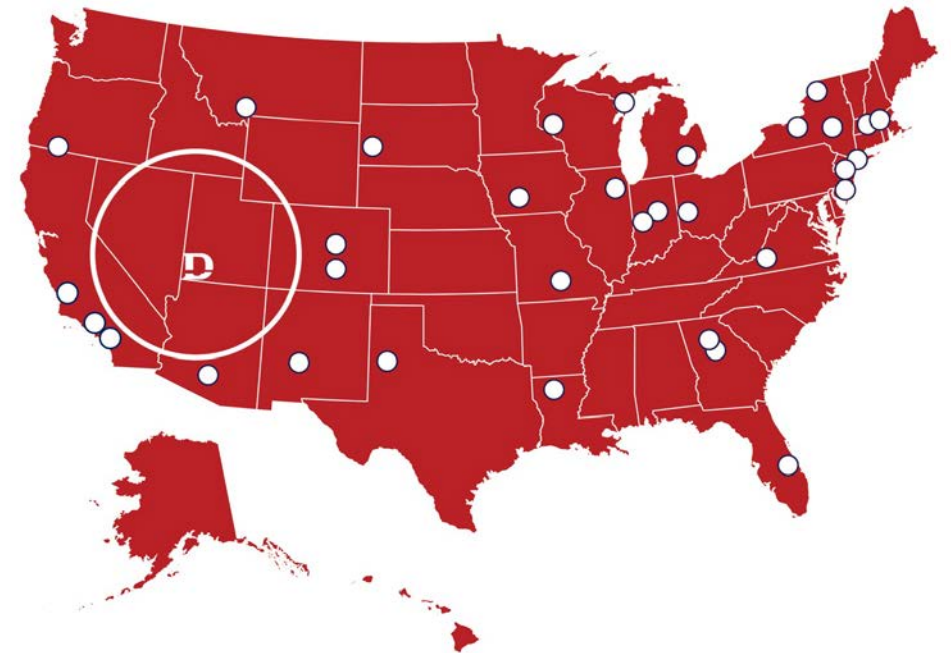
"THIS IS A ONCE IN A GENERATION OPPORTUNITY."

Dave Elkington

MISSION

Dixie State University is an open, inclusive, comprehensive, polytechnic university featuring active and applied learning to advance students' knowledge and skills while fostering competent, resilient, lifelong learners to succeed in their careers and personal lives as creators, innovators, and responsible citizens.