

## PURDUE UNIVERSITY BOARD OF TRUSTEES EXECUTIVE SUMMARY DEGREE PROPOSAL TEMPLATE

PLEASE NOTE THAT THE FULL PROPOSAL CHECKLIST WILL NEED TO BE COMPLETED FOR THE INDIANA COMMISSION ON HIGHER EDUCATION (see [https://in.gov/che/files/checklist\\_of\\_criteria\\_web.pdf](https://in.gov/che/files/checklist_of_criteria_web.pdf)) Both this template and the full checklist document are submitted to the Purdue Board of Trustees. When this form is complete, please save and return to [weiderhaft@purdue.edu](mailto:weiderhaft@purdue.edu) with tables as separate attachment.

**DATE:** November 24, 2020  
**TO:** Board of Trustees  
**FROM:** Mohammad A. Zahraee, Associate Dean, (219) 989-2966; [zahraee@pnw.edu](mailto:zahraee@pnw.edu)  
**CC:** Niaz Latif, Dean, (219) 989-3251; [nlatif@pnw.edu](mailto:nlatif@pnw.edu)  
**SUBJECT:** Doctor of Technology

**CAMPUS OFFERING DEGREE:** Purdue University Northwest

**ANTICIPATED START DATE:** Fall 2021

### 1. IS THE DEGREE RESIDENTIAL, HYBRID, OR ONLINE?

IF ONLINE, RATIONALE FOR GOING THROUGH SPECIFIC PURDUE CAMPUS—PWL, PFW, PNW, PG

Residential, classroom based.

### 2. BRIEF OVERVIEW OF DEGREE/WHY IS THE DEGREE NEEDED?

Doctor of Technology (DTech) program will align with Purdue University Northwest's role in leading economic and social development, contribute to meeting the mission and strategic goals of the university by providing innovative affordable education, and applied research for advanced level professionals. This professional practice degree program will provide vital transformative STEM education and opportunities for graduate students working primarily outside the academy. There is a workforce demand and interest in advanced technology positions, and a need for additional higher level degrees in the area served by PNW, which lags in this level of degree attainment. The College of Technology (COT) at Purdue University Northwest has graduated over 500 individuals in the Master of Science in Technology program since its inception in 2008. Many of these alumni are currently working in Chicago, south Chicago and northwest Indiana (the region). The proposed Doctor of Technology targets those alumni as well as individuals who are interested in expanding and applying existing knowledge and research to solve practice-based problems in technology and society.

### 3. BRIEF EVIDENCE OF FEDERAL, STATE, AND REGIONAL LABOR MARKET NEED

The rationale for the Doctor of Technology degree is based on three main factors: needs of business and industry, growth of professional doctoral programs, and the demand for the emerging skills in a knowledge-based and technology-based economy.

Within a 150-mile radius of Hammond, Indiana it is projected that between 2019 and 2025, there will be a 2.8% increase in employers seeking to hire Engineering Technology individuals with a Doctoral or professional degree<sup>1</sup>. Additionally, within this same area, it is projected there will be 104 annual openings that can potentially be filled by individuals completing the DTech degree.

When researching the same data for Computer Information Technology, it is found that between 2019 and 2025 there will be a 8.6% increase in employers seeking to hire individuals with a Doctoral or Professional degree<sup>13</sup>, whereas the national average is at +12.6%. It is projected that there will be 492 annual openings within a 150-mile radius of PNW which can potentially be filled by individuals completing the DTech degree with a focus on Computer Information Technology.

The Indiana Department of Workforce Development (DWD) data does not specifically address the demand for Doctor of Technology graduates, but overall demand for advanced degrees is expected to increase by 14.5% over the next 10 years, and the projected increase in jobs for STEM occupations needing advanced degrees is projected to increase by 27.1%. The DWD predicts strong statewide growth during the same time frame for multiple STEM-related occupations:

- Construction Managers, 7,839 positions, 7.8% increase projected
  - Management Analysis, 11,802 positions, 20% increase projected
  - Computer Systems Analysts, 9,814 positions, 25.2% increase projected
  - Software Developers, Systems Software, 3,864 positions, 17.9% increase projected
  - General and Operations Managers, 4,187 positions, 10.9% increase projected
  - Database Administrators, 1,929 positions, 13.1% increase projected
  - Computer and Information Systems Managers, 1,550 positions, 18.7% increase projected
  - Training and Development Specialists, 5,490 positions, 10.9% increase projected
  - Education Administrators, Elementary & Secondary, 4,330 positions, 6.6% increase projected
  - Network and Computer Systems Administrators, 7,743 positions, 10.8% increase projected<sup>2</sup>
- For 2018-28, the U.S. Bureau of Labor Statistics' *Occupational Outlook Handbook*<sup>3</sup> included the middle level business and industrial operational personnel among their list of 20 occupations with the highest projected number of new jobs. Additionally, the report states the second-fastest growing group of occupations requires a doctoral or professional degree. In the same report, The BLS projects increased job growth in many of the jobs that are within the Doctoral of Technology program, as shown below (see Appendix C for information and links to the data presented).
- Construction Managers, 471,800 positions, 10% increase projected
  - Architectural and Engineering Managers, 192,500 positions, 3% increase projected
  - Management Analysts, 876,300 positions, 14% increase projected
  - Computer and Information Systems Managers, 414,400 positions, 11% increase projected
  - Computer and Information Research Scientists, 31,700 positions, 16% increase projected
  - Software Developers, 1,365,500 positions, 21% increase projected
  - Network and Computer Systems Administrators, 383,900 positions, 5% increase projected
  - Industrial Designers, 43,900 positions, 3% increase projected
  - Operations Research Analysts, 109,700 positions, 26% increase projected
  - Top Executives, 2,639,500 positions, 6% increase projected<sup>11</sup>

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<sup>2</sup> Indiana Department of Workforce Development, Research & Analysis, Long-term Projections. (2016).

<sup>3</sup> Bureau of Labor Statistics. (2018). *Occupational Outlook Handbook*. Washington, DC: US Department of Labor.  
<http://www.bls.gov/ooh/>

#### 4. COSTS

##### A. Tuition and Fees—In-state and out-of-state

The tuition and fees for graduate program at PNW for 2020-21 academic year for students pursuing a DTech after a Master of Science degree (60 credit hours, following 30 hours of applicable Master's degree study) is as follows.

Per year cost:

Indiana Resident Tuition, Composite and Differential Fees = \$ 6,319.18

Non-Resident Tuition, Composite and Differential Fees = \$ 9,038.40

International Tuition, Composite and Differential Fees = \$ 12,879.82

Total cost:

Completion in 3.5 academic years, total costs, at the 2020-21 rate:

Indiana Resident Tuition, Composite and Differential Fees = \$ 22,117.13

Non-Resident Tuition, Composite and Differential Fees = \$ 31,634.40

International Tuition, Composite and Differential Fees = \$ 45,079.37

##### B. Financial Projection Table

See attached.

##### C. Program Review and Expenditure Summary

See attached.

##### D. Enrollment Projection

See attached.

**5. LIST OF SIMILAR DEGREES IN THE PURDUE SYSTEM AND DISTINCTIVE ELEMENTS FOR THIS DEGREE**

A similar degree is offered by Purdue West Lafayette.

- Purdue Polytechnic Institute, Doctor of Technology (online)

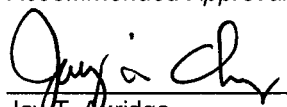
**6. COMPETITIVE DEGREES – BRIEF SUMMARY**

- Purdue Polytechnic Institute, Doctor of Technology (online)
- Indiana State University, Ph.D. in Technology Management (online)

Neither of these institutions offer residential program, as proposed by PNW.

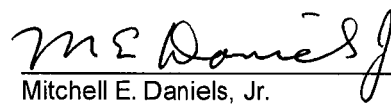
- **Outside Indiana:** University of Northern Iowa, Department of Technology offering a Doctor of Industrial Technology. This program does not have the concentrations included in this proposal. This is an on-campus program that has similar requirements to the proposed D. Tech. including 60 credit hours post MS, and a dissertation. This degree program also promotes the applied research model in calling for a doctoral internship.
- Texas A&M University (TAMU) has a D. Engineering program in their College of Engineering with a different focus.
- Capella University and Walden University both offer a Doctor of Information Technology, fully on-line program as opposed to this program, which is on-campus.

*Recommended Approval:*

  
\_\_\_\_\_  
Jay T. Akridge  
Provost and Executive Vice President for  
Academic Affairs and Diversity

11/9/21  
Date

*Approved:*

  
\_\_\_\_\_  
Mitchell E. Daniels, Jr.  
President

11/9/21  
Date

**Table 1**  
**Program Financial Projection**  
**Financial Office Table**  
**Purdue Northwest Campus**  
**Doctor of Technology Degree in College of Technology**

	Year #1 FY 2021	Year #2 FY 2022	Year #3 FY 2023	Year #4 FY 2024	Year #5 FY 2025
<b>I. ENROLLMENT</b>					
<b>1. Program Credit Hours Generated (FTE * 30 for BS &amp; FTE * 24 for masters/graduate)</b>					
a. Existing Courses					
b. New Courses					
<b>Total</b>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>2. Full-Time Equivalents (FTE)</b>					
a. Full-Time FTEs	3	6	9	10	10
b. Part-Time FTEs	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>4</u>
<b>Total Full/Part-Time FTE</b>	<b>4</b>	<b>8</b>	<b>12</b>	<b>14</b>	<b>14</b>
c. On-Campus Transfer FTEs	0	0	0	0	0
d. New-to-Campus FTEs	<u>4</u>	<u>8</u>	<u>12</u>	<u>14</u>	<u>14</u>
<b>Total On/New-to-Campus FTE</b>	<b>4</b>	<b>8</b>	<b>12</b>	<b>14</b>	<b>14</b>
<b>3. Program Majors - Headcount</b>					
a. Full-Time Students	3	6	9	10	10
b. Part-Time Students	<u>2</u>	<u>4</u>	<u>6</u>	<u>8</u>	<u>8</u>
<b>Total Full/Part-Time HC</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>18</b>	<b>18</b>
c. In-State	3	5	8	9	9
d. Out-of-State	<u>2</u>	<u>5</u>	<u>7</u>	<u>9</u>	<u>9</u>
<b>Total In/Out of State HC</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>18</b>	<b>18</b>

**Notes**

For both undergraduate and graduate degree enrollment projections, please carefully consider competitive degree enrollments and how the Purdue program will be marketed in the calculation of enrollment and degree completion projections.

^ Enter footnotes in the last section of this table for to provide additional details (required for 'other' categories) and projection and/or calculation logic.

**Table 1**  
**Program Financial Projection**  
**Financial Office Table**  
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**Doctor of Technology Degree in College of Technology**

	Year #1 FY 2021	Year #2 FY 2022	Year #3 FY 2023	Year #4 FY 2024	Year #5 FY 2025
<b>II. INCREMENTAL REVENUE</b>					
<b>1. Projected # of New Students</b> <sup>(1)</sup>	4	8	12	14	14
<b>2. General Tuition &amp; Fees</b> <sup>(2)</sup>					
a. General Service	2,720	2,720	2,720	2,720	2,720
b. Technology Fee					
c. Repair & Rehabilitation Fee					
d. Student Fitness & Wellness Fee					
e. Student Activity Fee	174	174	174	174	174
<b>Total General Service T&amp;F</b>	\$ 2,894	\$ 2,894	\$ 2,894	\$ 2,894	\$ 2,894
<b>2. Additional Fees - if applicable</b> <sup>(3)</sup>					
a. Differential Fees	266	266.00	266.00	266	266
b. Course Fees					
c. Other Fees					
<b>Total Additional Fees</b>	\$ 266	\$ 266	\$ 266	\$ 266	\$ 266
<b>Total Incremental Revenue</b>	\$ 12,640	\$ 25,280	\$ 37,920	\$ 44,241	\$ 44,241

**Notes**

(1) New Students represents the anticipated number of *new* students to campus; transfers or existing students are **not** to be included. The Total is set equal to the 'New-to-Campus FTEs' completed in the Enrollment section (I2d).

(2) T&F must match approved Bursar rates (refer to Bursar website). The calculation should be based on the **Full-Time/Resident** Student T&F. If the new degree program is primarily Part-Time students, then the T&F needs to be adjusted appropriately for this type of expected enrollment.

(3) If additional fees are applicable, then each fee must be individually listed above and match approved Bursar rates (refer to Bursar website).

Bursar T&F Website: <https://www.purdue.edu/bursar/tuition/index.html>

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**Table 1  
Program Financial Projection  
Financial Office Table  
Purdue Northwest Campus  
Doctor of Technology Degree in College of Technology**

	Year #1 FY 2021		Year #2 FY 2022		Year #3 FY 2023		Year #4 FY 2024		Year #5 FY 2025	
<b>III. EXPENDITURES</b>										
<b>1. Salary and Wages</b>	<u>FTE</u>	<u>Cost</u>	<u>FTE</u>	<u>Cost</u>	<u>FTE</u>	<u>Cost</u>	<u>FTE</u>	<u>Cost</u>	<u>FTE</u>	<u>Cost</u>
a. Faculty	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
b. Limited Term Lecturers	0.25	3,000	0.50	6,000	1.00	12,000	1.00	12,000	1.00	12,000
c. Graduate Students	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
d. Other (Post Doc/Staff)	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
<b>Total S&amp;W</b>	<b>0.25</b>	<b>\$ 3,000</b>	<b>0.50</b>	<b>\$ 6,000</b>	<b>1.00</b>	<b>\$ 12,000</b>	<b>1.00</b>	<b>\$ 12,000</b>	<b>1.00</b>	<b>\$ 12,000</b>
<b>2. Fringes and Fee Remissions</b>										
a. Fringe Benefits		-		-		-		-		-
<b>b. Fee Remissions</b>		<b>7,000</b>		<b>14,000</b>		<b>21,000</b>		<b>21,000</b>		<b>21,000</b>
<b>Total FB &amp; FR</b>		<b>\$ 7,000</b>		<b>\$ 14,000</b>		<b>\$ 21,000</b>		<b>\$ 21,000</b>		<b>\$ 21,000</b>
<b>3. Supplies and Expenses</b>										
a. General Supplies & Expenses		-		-		-		-		-
b. Minor Equipment		-		-		-		-		-
c. Recruiting & Marketing		2,000		2,000		1,500		1,000		1,000
d. Travel & Entertainment		-		1,000		1,000		2,000		2,000
e. Other (Library, subscriptions, IT)		500		500		500		500		500
<b>Total Supplies and Expense</b>		<b>\$ 2,500</b>		<b>\$ 3,500</b>		<b>\$ 3,000</b>		<b>\$ 3,500</b>		<b>\$ 3,500</b>
<b>4. Capital</b>										
a. Capitalized Equipment		-		-		-		-		-
b. Repair & Replacement		-		-		-		-		-
<b>Total Equipment</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>
<b>Total Expenditures</b>		<b>\$ 12,500</b>		<b>\$ 23,500</b>		<b>\$ 36,000</b>		<b>\$ 36,500</b>		<b>\$ 36,500</b>
<b>Projected Program Surplus/(Deficit)*</b>		<b>\$ 140</b>		<b>\$ 1,780</b>		<b>\$ 1,920</b>		<b>\$ 7,741</b>		<b>\$ 7,741</b>

\* For the CHE proposal, only identify the nature of the support. It is not necessary to note dollars in the report; however, it should be stated that there is sufficient revenue to cover expenses. Projected surplus/deficit is an aid to identify potential new University revenue, anticipated program costs, and degree substantiality. This does not represent any type of funding request.

^ Enter footnotes in the last section of this table for to provide additional details (required for 'other' categories) and projection and/or calculation logic.

**Table 1**  
**Program Financial Projection**  
**Financial Office Table**  
**Purdue Northwest Campus**  
**Doctor of Technology Degree in College of Technology**

**FOOTNOTES****I. Enrollment Details**

1. Program Credit Hours Generated  
It was assumed that a full-time graduate student registers for an average of 9 credit hours
2. Full-Time Equivalent (FTE)  
Two part-time was assumed to equal one FTE.
3. Program Majors - Headcount  
All students belong to the major program.

**II. Incremental Revenue Details**

1. Projected # of New Students  
It is projected that after 4 years, this program will have 10 full-time and 8 part-time students, all of them are new students.
2. General Tuition & Fees  
All numbers extracted based on 2020-2021 tuition and fee from PNW website.
3. Additional Fees - if applicable  
College of Technology charges additional fees (Differential fee) which is \$265.55 for full-time and \$251.09 for part-time students.

**III. Expenditure Details**

1. Salary and Wages  
It is assumed that full-time faculty will teach at doctoral level and LTLs and doctoral students will be hired to cover their undergraduate courses
2. Fringes and Fee Remissions  
It is assumed that 1/3 of full-time doctoral students will receive a fee remission of \$7,000 annually.
3. Supplies and Expenses  
Non-expected. Travel money is to attend conferences and present publications by Doctoral students.
4. Capital  
None needed.



**Table 2**  
**Program Revenue and Expenditure Summary**  
**Board of Trustees Table**  
**Purdue Northwest Campus**  
**Doctor of Technology Degree in College of Technology**

	<u>Year #1</u> <u>FY 2021</u>	<u>Year #2</u> <u>FY 2022</u>	<u>Year #3</u> <u>FY 2023</u>	<u>Year #4</u> <u>FY 2024</u>	<u>Year #5</u> <u>FY 2025</u>
<b>Total Incremental Revenue*</b>	\$ 12,640	\$ 25,280	\$ 37,920	\$ 44,241	\$ 44,241
<b>Total Expenditures</b>	\$ 12,500	\$ 23,500	\$ 36,000	\$ 36,500	\$ 36,500
<b>Projected Program Surplus/(Deficit)**</b>	<b>\$ 140</b>	<b>\$ 1,780</b>	<b>\$ 1,920</b>	<b>\$ 7,741</b>	<b>\$ 7,741</b>

\*Based on the anticipated number of *new* students to campus; transfers or existing students are not included. Projected incremental revenue is based on the current *full-time, resident* tuition and fees approved by the Bursar.

\*\*Projected surplus/deficit is an aid to identify potential new University revenue, anticipated program costs, and degree substantiality. This does not represent any type of funding request.

**Additional Departmental Footnotes:**

**Table 3**  
**Projected Headcount and FTE Enrollment and Degrees Conferred**  
**Board of Trustees & ICHE Table**  
**Purdue Northwest Campus**  
**Doctor of Technology Degree in College of Technology**

	<u>Year #1</u> <u>FY 2021</u>	<u>Year # 2</u> <u>FY 2022</u>	<u>Year # 3</u> <u>FY 2023</u>	<u>Year # 4</u> <u>FY 2024</u>	<u>Year # 5</u> <u>FY 2025</u>
<b>Enrollment Projections (Headcount)</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>20</b>
<b>Enrollment Projections (FTE)</b>	<b>4</b>	<b>8</b>	<b>12</b>	<b>14</b>	<b>14</b>
<b>Degree Completions Projection</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>4</b>