

Annual Year End Report

AY 2019-20

Department of Industrial Technology Jordan College of Agricultural Sciences and Technology

Faculty and staff members

1. Dr. A. Alexandrou (Chair)
2. Mr. Don Austin (Teacher Ed)
3. Dr. Nitaigour Prem Mahalik
4. Dr. Arun Nambiar (Graduate Coordinator)
5. Mrs. Debra Pichardo (Department Administrative Assistant)
6. Dr. Balaji Sethuramasamyraja (Precision Ag Minor & UAV & Agricultural Systems Management Coordinator)
7. Dr. Daming Zhang (BSIT Program Assessment Coordinator)

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Executive Summary

The department of Industrial Technology faced the following three challenges:

- i. **Covid-19.** This health crisis forced the department to deliver all its classes in an online format after mid-March. The challenge was figuring out how to deliver the laboratories in a face-to-face mode so that students will not lose the educational experience that they deserve.
- ii. **Maintenance of the equipment.** Another challenge that the department has faced is the maintenance and repair of its state of the art and obsolete equipment that the department operates and uses for its labs. Currently the department uses a student assistant for simple maintenance tasks but this has not been sufficient.
- iii. **Renew membership of Advisory Board.** The department is attempting to renew its advisory board members. The department seeks to better balance the board in relation to representatives from food processing, manufacturing and service industries. The renewal process has been interrupted because of the coronavirus closure.

The department of Industrial Technology faced the following three opportunities:

- i. **Food Processing Plant Management option.** The Department is in discussions with the department of Food Science in order to introduce a new option, Food Processing Plant Management. The process has been interrupted because of the coronavirus lockdown.
- ii. **Summer camp.** The department is working on offering a summer camp for high school juniors and seniors. The camp was structured around the citrus packing line. The launch of the recruitment camp has been postponed for next summer.
- iii. **Nut Processing Line.** The department is installing a nut processing line, a gift from a number of private companies under the auspices of WAPA. All components are currently in Wonderful Pistachios in Lost Hills. University facilities management is currently modifying room IT 124 so that the line can be installed. The course will be taught once the line is installed.

1. Accomplishments and Progress on 2018-19 Goals

The Department of Industrial Technology (IT) has five tenured faculty, one full-time lecturer, and one ASC. The faculty diligently worked in line with the vision and mission of the Jordan College of Agricultural Sciences and Technology (JCAST) and accomplished the goals and objectives that were set in AY 2018-19.

Table 1. Progress on department goals for 2018-2019.

Goals for current academic year	Progress
Consolidate synergies and collaborations with community colleges;	The department has participated in the Building Pathways for Student Success initiative, a collaborative effort between Jordan College and community colleges to facilitate the success of transfer students to Jordan College.
Consolidate WAPA gift and introduce a new course in Nut Processing Lines;	The nut processing line (worth about \$500,000) is currently in Wonderful Pistachios in their Lost Hills facility. Facilities management is modifying room IT 124 so that the processing line can be installed.
Open the packing line, nut processing and automation courses to students from other majors;	Efforts continues in collaboration with other departments, particularly Plant Science, Food Science and Ag Business.
Continue recruiting for the Agricultural Systems Management (ASM) option	In progress. The option was introduced in Fall 2017 and had 5 students. In Spring 2020 in had 29 matriculated students. It increased its number of students by 5 students every semester. Enrollment has grown well above expectations. Dr. Seth is the program's coordinator.
Continue recruiting for the MSc program;	The program faced a challenge due to a decrease in the number of international students. This decrease was related to visas and other issues outside the department's control. The number of graduate students in Fall 2019 stabilized to 15, one student more compared to Fall 2018.
Create synergies with Central Valley's commodity groups;	The department with the support of Ag One and the Deans office has initiated discussions with commodity groups to update its curriculum and equipment.
Continue to participate in efforts to create an Agricultural Engineering program at Fresno State (with LCOE)	In progress. The report has been submitted to the Deans of JCAST and LCOE.

Continue to participate in the LCOE's effort to create a minor/certificate on process control and automation	In progress. The department, together with Lyles College of Engineering, has been a recipient of a gift from Chevron to create an Automation Academy. Equipment was purchased and was used in courses in Fall 2019.
Introduce a new option provisionally titled Food Plant Operation Management;	In progress. Efforts were made with Food Science to create an option.
Introduce a Summer Camp for HS students;	The summer camp was cancelled due to COVID19.

2020-21 goals and objectives

The goals and objectives for the coming academic year are listed below:

- i. Consolidate synergies and collaborations with community colleges;
- ii. Install the nut processing line (WAPA gift) in room IT 124 and introduce a course;
- iii. Open the packing line, nut processing and automation courses to students from other majors;
- iv. Continue recruiting for the Agricultural Systems Management (ASM) option;
- v. Continue recruiting for the MSc program;
- vi. Create synergies with Central Valley's commodity groups;
- vii. Continue to participate in efforts to create an Agricultural Engineering program at Fresno State (with LCOE);
- viii. Continue to use the automation academy equipment for IT accredited courses.
- ix. Introduce a new option provisionally titled Food Plant Operation Management;
- x. Introduce a Summer Camp for HS students.

2. Unit accomplishments

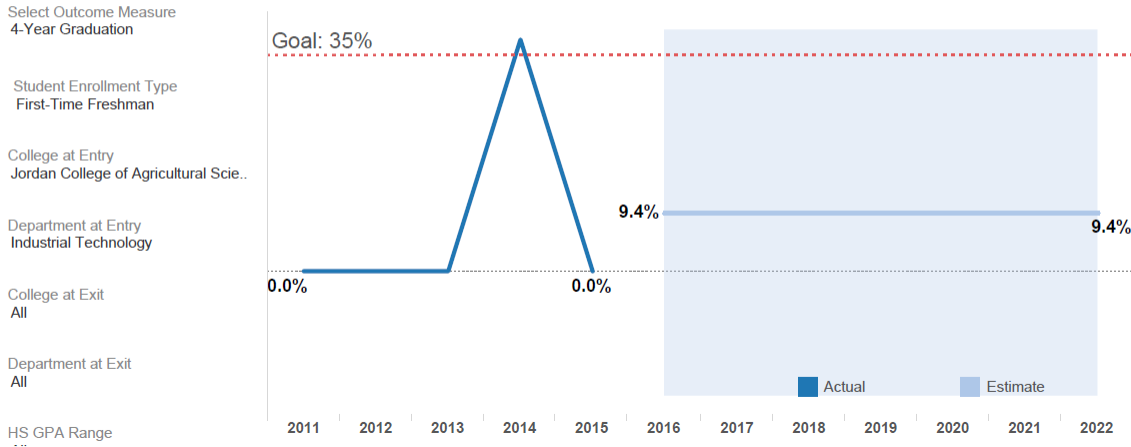
2a. Student Success: Graduation Rates, Retention, Closing the Loop

Student success numbers are small and do not allow for a meaningful comparison.

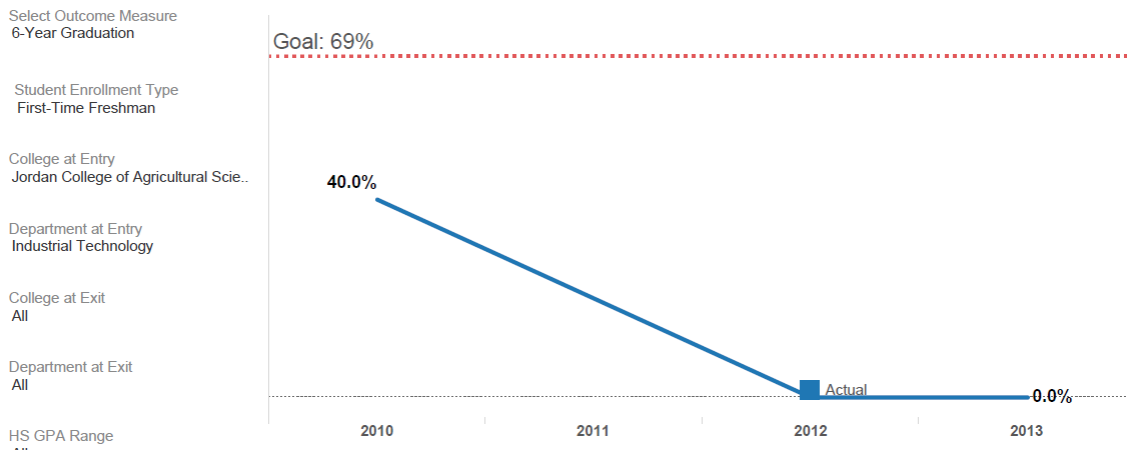
Graduation Rate: First-Time Freshman

The department's 4th year and 6th year graduation rates for first-time freshman are shown in the following figures. It should be noted that the IT cohort sizes are very small and do not allow for a meaningful comparison.

**4-Year Graduation of Full-Time, First-Time Freshman Cohorts
Entry Cohorts from Fall 2011 to Fall 2015
College at Entry: Jordan College of Agricultural Sciences and Technology**



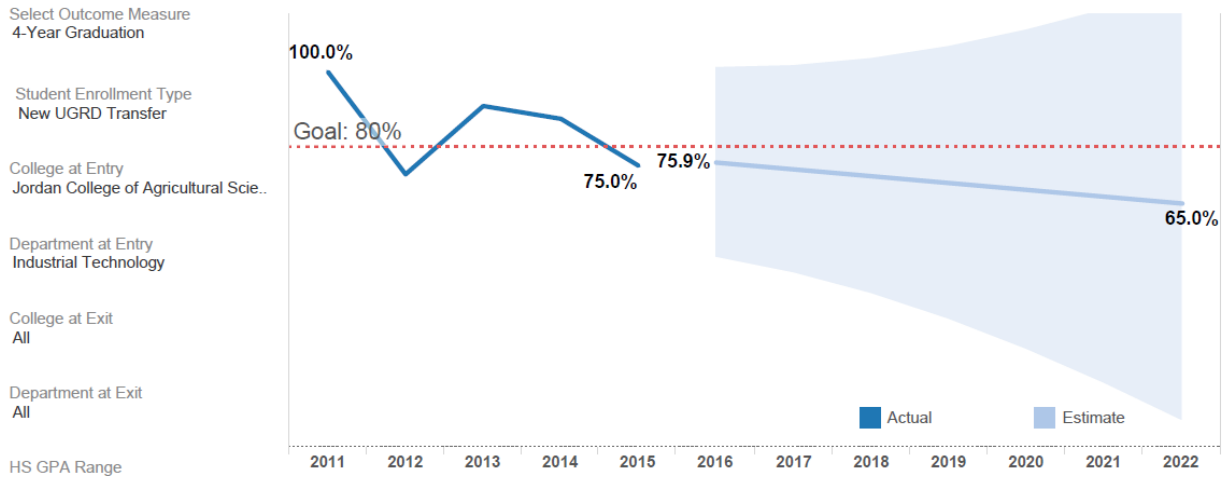
**6-Year Graduation of Full-Time, First-Time Freshman Cohorts
Entry Cohorts from Fall 2010 to Fall 2013
College at Entry: Jordan College of Agricultural Sciences and Technology**



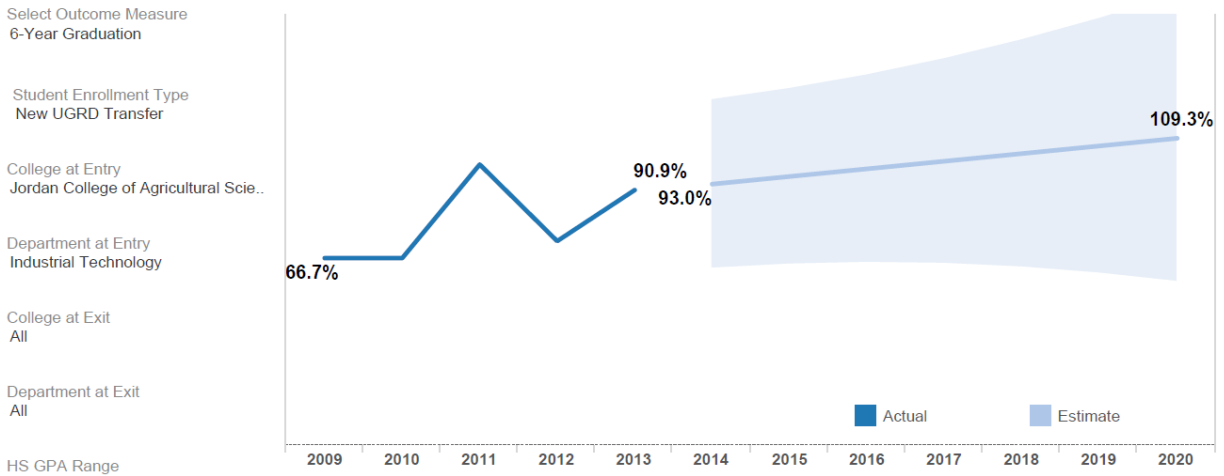
Graduation Rate: Transfer Students

The department’s 4th and 6th year graduation rates for transfer students are shown below. It should be noted that the IT cohort sizes are very small and do not allow for a meaningful comparison. The last few years graduation rate for transfer students has been fluctuating around the 80% system’s target.

**4-Year Graduation of Full-Time & Part-Time, New UGRD Transfer Cohorts
Entry Cohorts from Fall 2011 to Fall 2015**
College at Entry: Jordan College of Agricultural Sciences and Technology



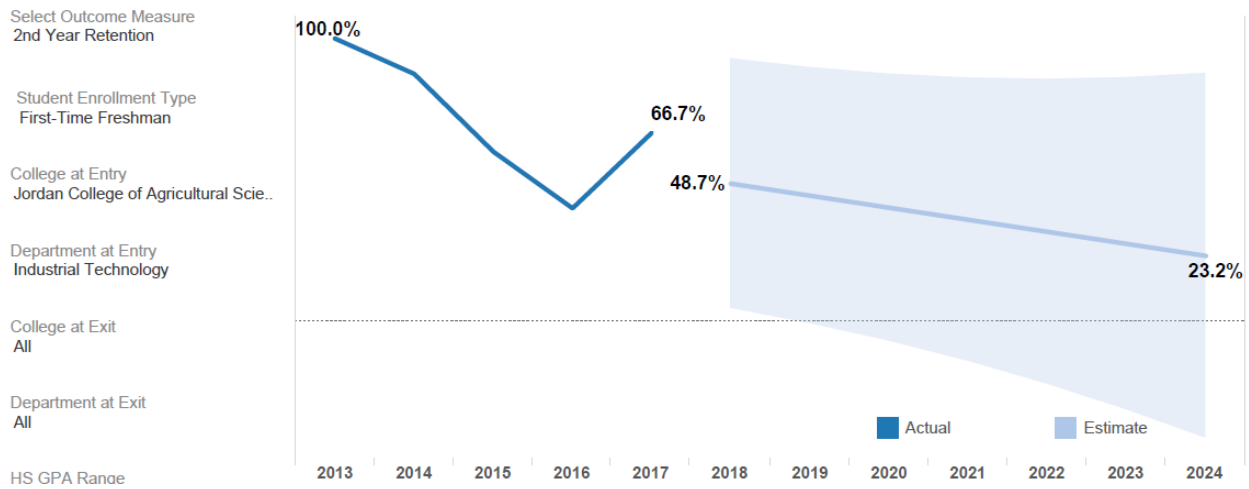
**6-Year Graduation of Full-Time & Part-Time, New UGRD Transfer Cohorts
Entry Cohorts from Fall 2009 to Fall 2013**
College at Entry: Jordan College of Agricultural Sciences and Technology



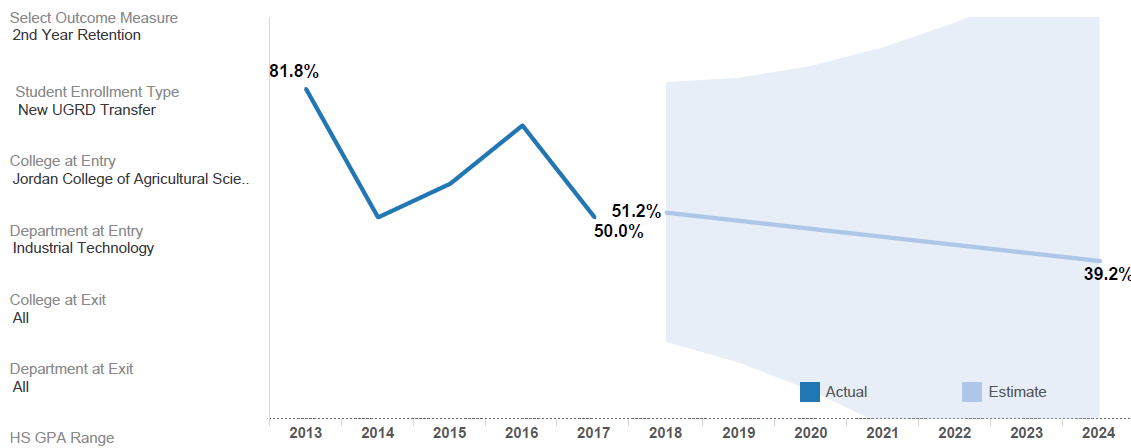
Retention Rate: 2nd year First-Time and Transfer

The department's 4th and 6th year graduation rates for transfer students are shown below. It should be noted that the IT cohort sizes are very small and do not allow for a meaningful comparison.

**2nd Year Retention of Full-Time, First-Time Freshman Cohorts
Entry Cohorts from Fall 2013 to Fall 2017
College at Entry: Jordan College of Agricultural Sciences and Technology**



**2nd Year Retention of Full-Time & Part-Time, New UGRD Transfer Cohorts
Entry Cohorts from Fall 2013 to Fall 2017
College at Entry: Jordan College of Agricultural Sciences and Technology**



The department does not have classes with high numbers of D, F and W grades.

2b. Operational Performance

Workplace Quality Survey. Only three IT members responded to the survey. The number is too small and does not allow us to draw meaningful conclusions.

Covid-19. The department moved to online course delivery in mid-March. Most faculty members and students had experience with online classes and the change was seamless. The department faces challenges with the online delivery of its laboratories. Some of the skills that are included in the educational outcomes require skills that the student will obtain through face-to-face practical lab experience. Such labs are not possible to be taught through an online delivery.

2c. Broadening and deepening relationships with external audiences.

The following actions took place to expand relationships on and off campus:

- i. The department approached Bee Sweet Citrus and secured a gift of \$100,000 of the palletizing industrial robotic arm worth around \$100,000.
- ii. Expanded relationships with the College of Engineering that resulted in the using the automation trainer and table top robots to IT's articulated classes.
- iii. The department developed a relationship with Sinclair International, a labeler manufacturer, and the company teaches IT students a lab section where it shows them how the labeler operates.
- iv. The department developed its relationship with Western Agricultural Processors Association (WAPA) and a \$500,000 nut processing line will be installed in room IT 124.
- v. The department (since September 2013) participates in the Valley Industry Partnership program run by LCOE, which provides the students an opportunity to work in a real-world engineering/industrial environment for a year.
- vi. Currently, the department participates in an important project for the agricultural industry called Collection and Analysis of Agricultural Equipment Activity Data. Fresno State is a subcontractor to the Air Resource Board financed project and I am the PI from the Fresno State side.
- vii. I am the core faculty representing Jordan College to the California Agricultural Leadership Foundation, which is widely considered the premier program, in its niche, in the world.
- viii. I am serving in Fresno State's Academic Senate (for over 10 years), as Chair of the University Personnel committee, member of the University Task Force on Student Rating and in all these assignments I expanded the relationships with other academic units and departments.

Most of the efforts mentioned above resulted in tangible results (gifts) for the department, college and university.

The following Table includes the members of the department's advisory board.

Appendix IV

First Name	Last Name	Position	Company	Email	Position on Advisory Board
Brian	Emerson			bemerson@fcoe.org	Member
Farrell L.	Foley	Metallurgical Engineer & Owner	Eliminator Manufacturing, Inc.	farrell@eliminatormfg.com	Member
Mark	Jackson	President	Blue Dolphin Design & Engineering Corp.	mark.jackson@bluedolphinengineering.com	Member
John	Marr	Production Manager	Betts Spring Manufacturing	john.marr@betts.1868.com	Member
Rion	Morgenstern	President	Cannon Sleep Products	rion@cannonsleep.com	Member
Mike	Obradovich	Quality Engineer	Grundfos Pumps Mfg. Corp.	mobradovich@grundfos.com	President
Mark	Peterson	IT Site Coordinator	Quad Graphics	mark.peterson@qg.com	Member
Michael	Roy	Sr. VP-MFG	Anlin Window Systems	mcr500@anlin.com	Member
James	Yager	Owner	Strategic Farming	jim@strategicfarming.com	Member
Tom	Marderosian	Production Manager	Bee Sweet Citrus	tommy@beesweetcitrus.com	Member