

**Associate of Science
Industrial Engineering Technology and
Pre-Engineering Technology Program
Review 2016-2020**

Prepared by Luka Kapkiai

Introduction

The Associate of Science with an emphasis in Industrial Engineering Technology and Pre-Engineering Technology Program at Neosho County Community College (NCCC) provides students with an opportunity to meet their general education courses and especially to those students that intend to transfer to a four-year institution and pursue a Technology program. Most of our students normally transfer to Pittsburg State University's technology programs, where they major with programs that have an emphasis in Mechanical Engineering Technology or Plastics Technology.

Section 1: Alignment of Program Mission and Purposes with Mission and Purposes of NCCC.

At NCCC, the Associate of Science degree with an emphasis in Industrial Engineering Technology and Pre-Engineering Technology like other programs at the college continues to uphold all the missions and purposes of college.

NCCC Purpose 1: Student learning through

The Industrial Engineering Technology and Pre-Engineering Technology program strives to meet the needs of all students in the program by ensuring that they receive quality education. The quality of education at NCCC has been and continues to be measured using an assessment tool developed for each course based on certain course outcomes. Assessments of every course taught at NCCC have traditionally been assessed using specific course learning outcomes. With an aim of better improving the quality of assessment data for courses taught at NCCC and beginning 2020/2021 academic year, the Dean for assessment developed a schedule to select a certain number of courses for assessment purposes. Looking at the assessment data so far collected for this program, majority of the students are passing their courses with a grade of C or better and meeting learning course outcomes.

NCCC Purpose 2: Student success through

Most of the courses taught at NCCC are small with maximum of 24 students in a class ensuring personal attention is possible. With small class sizes, student instructor ratio is very good and thus students can easily get the help they need in order to succeed in their coursework. Additionally, the advising division plays an important role in helping the students choose the right courses to meet their educational goals of the program. It is, however, a challenge to provide expert knowledge for students in the area since we do not currently have a full time faculty member dedicated for this program.

NCCC Purpose 3: Accountability to stakeholders through

In years past and based on 2005/2006 through 2009/2010 program review, there was an advisory group, which provided input to the program. Since that time, we have not had a technology advisory group to help provide input of the need of the businesses around. We still however try to offer courses to students in the program and schedule them accordingly by trying to follow course rotations with an established sequence. It has been a challenge to get enrollment in Engineering Physics courses.

NCCC Purpose 4: Meeting community needs through

Due to the absence of an advisory group for the Industrial Engineering Technology program, meeting this purpose has somehow been limited. We will be exploring ways of possibly merging this program with the existing Physics and Pre-Engineering program. We are however, still open to opportunities of forging another advisory group if need be.

History of the program

This program review of 2015/2016 through 2019/2020 is presented is after a break of five years since the last full program review. A status update was presented in 2015 given that there had been no students enrolled in the program and due to an error where the program had been, accidentally removed from the system. In 2005/2006 through 2009/2010, the last time when a full program review was done, certain strengths and weaknesses were pointed out. The strength of the program continuing to contribute to NCCCS's mission and purposes is still true. In the follow up status of 2015 about the program, a recommendation was made to hold onto making any decision about the program until certain things such as the partnership discussion with Pittsburgh State University (PSU) was addressed. The status of the partnership is still outstanding. However, one of the strength back then of an advisory board no longer exist something that will need to be investigated for the growth of the program. In all there continues to be strengths and weaknesses that are still same to this day.

Section 2: Curriculum of Program and Outcomes Assessment

In order for a student to earn an associate of Science degree with an emphasis in Industrial Engineering Technology and Pre-Engineering Technology, he or she must take a certain number of courses. The program sheet below shows courses in the program that a student must take to be awarded an associate degree.

Industrial Engineering Technology and Pre-Engineering Technology Program Sheet

Industrial Engineering Technology/Pre-Engineering Technology

Associate of Science

The Associate of Science with an emphasis in Industrial Engineering Technology/Pre-Engineering Technology is a two-year degree for students who intend to transfer upon graduation. Transfer students should follow the requirements of the institution to which they wish to transfer. Students should contact the transfer institution of their choice to determine transferability of courses.

Prerequisites

The student will need to demonstrate proficiencies in reading, English, and mathematics based on the Mandatory Placement Policy, or by taking the recommended/required classes. Some of the courses in this curriculum have specific prerequisites.

General Education (GE) Courses

In order to graduate with a college degree, all students are required to take certain general education courses. These include English composition, speech, wellness, science, art and humanities, mathematics, computer systems, and social and behavioral science.

Program Core Courses

MATH 150 Analytic Geometry and Calculus I, PHYS 104/140 Engineering Physics I/Lab, PHYS 105/145 Engineering Physics II/Lab.

Program Elective Courses

Industrial Engineering program electives should be chosen based on the requirements of the transfer institution. Students should consult the transfer institution of their choice to determine transfer institution requirements and transferability of courses. Electives could include ETEC 194 Intro to Technology Systems, ETEC 125 Computer Applications in Manufacturing, ETEC 121 Engineering Graphics I, ETEC 115 Blueprint Reading, ETEC 153 Computer-Aided Design I, ETEC 111 Tools and Machines - Maintenance and Safety.

Program Outcomes

1. Demonstrate technical skills and application in mathematics to support planning, analyzing, and problem solving.
2. Apply the scientific method and principles to support planning, analyzing, and problem solving.
3. Demonstrate effective oral, written, and interpersonal communication skills to support their role in industry.
4. Utilize computer application software.

Course Sequence

The listing that follows is a recommended sequence of courses for full-time students. The student should consult with an advisor for information specific to their academic situation.

Recommended Sequence of Courses

Availability of technology courses will depend upon demand.

(Fall) Semester I		Cr Hrs
MATH 150	Analytic Geometry and Calculus I*	▶ 5
CHEM 215	College Chemistry I	▶ 3
CHEM 216	College Chemistry I Lab	▶ 2
COMM 207	Fundamentals of Speech	▶ 3
CURR 100	First Year Seminar	▶ 1
ENGL 101	English Composition I	▶ 3
	Total	17

(Spring) Semester II		Cr Hrs
ENGL 289	English Composition II	▶ 3
PSYC 155	General Psychology	▶ 3
MATH 143	Elementary Statistics	▶ 3
HPER 150	Lifetime Fitness	▶ 1
CSIS 100	Computer Concepts and Applications**	▶ 3
	Approved Arts/Humanities Course	3
	Total	16

(Fall) Semester III		Cr Hrs
PHYS 104	Engineering Physics I	▶ 4
PHYS 140	Engineering Physics I Lab	▶ 1
ACCT 201	Financial Accounting I or Program Course	▶ 3
	Program or Transfer Course	3
	Approved Social Science Course	3
	Approved Arts/Humanities Course	3
	Total	17

(Spring) Semester IV		Cr Hrs
PHYS 105	Engineering Physics II	▶ 4
PHYS 145	Engineering Physics II Lab Biological Science and Lab or Program or Transfer Course(s)	▶ 1
	Approved Social Science Course	3
	Approved Arts/Humanities Course	3
	Total	16

Total Program Credits 66

*Assuming the student has passed the equivalent of MATH 113 College Algebra, and MATH 122 Plane Trigonometry. If not, the student must enroll in these courses.

**If not required by transfer institution, student may satisfy this requirement by passing a computer proficiency exam.

For more information contact:

Jim Halstead, 620-432-0306

jhalstead@neosho.edu

Note: Mr. Jim Halstead's name listed as the contact person for this program is incorrect. This will need to be changed.

Core Courses in the Program

The following are core courses in the Industrial Engineering Technology and Pre-Engineering Technology program

- COMM 207 – Fundamental of Speech
- CSIS 100 – Computer Concepts & Applications
- ENGL 101 – English Composition I
- ENGL 289 – English Composition II
- MATH 143 – Elementary Statistics
- MATH 150 – Analytic Geometry and Calculus I
- PHYS 104 – Engineering Physics I
- PHYS 105 – Engineering Physics II
- PHYS 140 – Engineering Physics I lab
- PHYS 145 – Engineering Physics II Lab

Most of these courses are taught consistently at NCCC. Physics courses have not been taught regularly due to low enrollments in the course and this continues to be a barrier of this program.

Program Outcomes and Program Matrix

The Industrial Engineering Technology and Pre-Engineering Technology program have four program outcomes that were assessed this program review period of 2015/2016 through 2019/2020 academic years. The number of course outcomes are still the same as they were during the 2005/2006 through 2009/2010. Learners in this program should be able to:

1. Demonstrate technical skills and application in mathematics to support planning, analyzing, and problem solving.
2. Apply the scientific method and principles to support planning, analyzing, and problem solving.
3. Demonstrate effective oral, written, and interpersonal communication skills to support their role in industry.
4. Utilize computer application software.

The four program outcomes are measured using identified course outcomes (CO) of certain courses within the program. The four program outcomes are what forms the basis for the program matrix. Shown below are the program matrix and program outcomes results for the last five years of this program review period. The program matrix was last updated 2016, since the last full program review mainly due to Kansas Core Outcomes Groups (KCOG) meetings where course outcomes courses were changed. It is only PHYS 104 course outcomes that have remained unchanged as far as course outcomes fulfilling their respective program outcome.

Current Program Matrix

Course Number	Course Name	PO 1	PO 2	PO 3	PO 4
COMM 207	Fund. Of Speech			CO 1-6	
CSIS 100	Computer Concepts & Appls.				CO 1-9
ENGL 101	English Comp. I			CO 1-5	
ENGL 289	English Comp. II			CO 1-3	
MATH 143	Elementary Statistics	CO 1-8			
MATH 150	Analytic Geometry & Calculus I	CO 1-5			
PHYS 104	Engineering Physics I	CO 1, 2, 3	CO 1, 2, 3		
PHYS 105	Engineering Physics II	CO 1, 2, 3	CO 1, 2, 3		
PHYS 140	Engineering Physics I Lab	CO 4	CO 4		
PHYS 145	Engineering Physics II Lab	CO 4	CO 4		

Program Matrix as of 1/05/2010

Course Number	Course Name	Program Outcome 1	Program Outcome 2	Program Outcome 3	Program Outcome 4
COMM 207	Fund. Of Speech			CO 1-5	
CSIS 100	Computer Concepts & Appls.				CO 1-10
CSIS 130	Intro. To Computer Information Systems				CO 1-10
ENGL 101	English Comp. I			CO 1, 2	
ENGL 289	English Comp. II			CO 1-7	
MATH 143	Elementary Statistics	CO 1-5			
MATH 150	Analytic Geometry & Calculus I	CO 1-5			
PHYS 104	Engineering Physics I	CO 1, 2, 3	CO 1, 2, 3		
PHYS 105	Engineering Physics II	CO 1, 2	CO 1, 2		
PHYS 140	Engineering Physics I Lab	CO 2, 3	CO 1		
PHYS 145	Engineering Physics II Lab	CO 1, 2	CO 1, 2		

Program Outcomes Assessment Data

Looking at the program assessment data during this assessment period, students are meeting the set goal per the specified courses and therefore meeting the learning course outcomes. The numbers are however low on PO 4. As you can see from the table below, there was no assessment data provided as indicated by XX for PO 2 for 2017/2018 through 2019/2020. In this case, Physics was not taught due to lack of enrollment in the course.

Program Outcomes Assessment Data

Academic Year	PO 1	PO 2	PO 3	PO 4
15-16	77	76	85	82
16-17	72	72	82	75
17-18	74	XX	84	71
18-19	82	XX	83	71
19-20	81	XX	84	78

Assessment methods for courses in the Program

Courses taught in the Industrial Engineering Technology and Pre-Engineering Technology program are assessed using specific course outcomes and consistent with the assessment methods at NCCC. The course outcomes within the core courses assessed are important in the overall program review. The faculty members responsible for teaching the various courses within this program utilize a number of course assessments methods and tools that are not limited to written papers, participations, portfolios, homework, lab activities, quizzes, exams, etc.

Course Assessments and Analysis

During this program review period, all core courses under this program were assessed every semester using the specific course outcomes of the course. Below are tables showing the outcome scores for the individual courses in the program. In general, all courses taught were meeting their target goal. There are, however, some instances where certain course outcomes were not met. Most notably are in CSIS 100 and MATH 143. Additionally in MATH 143, certain course outcomes are denoted by “ZZ”. In this case, the course was assessed but the course outcome was not recorded because outcomes 6, 7, and 8 were not added until 2016-17. For Physics courses, XX indicates that the course was never taught and therefore no score recorded.

Fundamental of Speech (COMM 207)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	92	92	90	91	88
Course Outcome 2	90	89	89	90	88
Course Outcome 3	88	78	89	91	88
Course Outcome 4	88	81	85	88	88
Course Outcome 5	89	90	93	90	88
Course Outcome 6	85	85	87	90	91

Computer Concepts and Applications (CSIS 100)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	87	78	78	74	83
Course Outcome 2	90	82	71	72	83
Course Outcome 3	85	83	79	81	84
Course Outcome 4	79	72	71	68	74
Course Outcome 5	75	73	66	66	73
Course Outcome 6	79	60	58	59	68
Course Outcome 7	78	75	75	77	81
Course Outcome 8	82	78	73	69	78
Course Outcome 9	79	78	69	70	80

English Composition I (ENGL 101)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	83	82	84	81	83
Course Outcome 2	84	79	83	80	84
Course Outcome 3	82	81	84	78	81
Course Outcome 4	80	78	80	79	82
Course Outcome 5	81	83	78	78	82

English Composition II (ENGL 289)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	82	80	84	79	81
Course Outcome 2	79	80	80	78	81
Course Outcome 3	83	79	82	77	78
Course Outcome 4	84	80	84	79	83

Elementary Statistics (MATH 143)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	78	77	73	83	86
Course Outcome 2	73	67	75	82	84
Course Outcome 3	65	59	65	77	77
Course Outcome 4	75	87	89	89	85
Course Outcome 5	87	68	68	82	76
Course Outcome 6	ZZ	71	69	84	77
Course Outcome 7	ZZ	71	65	79	77
Course Outcome 8	ZZ	76	78	80	76

Analytic Geometry and Calculus I (MATH 150)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	84	73	83	84	87
Course Outcome 2	75	71	78	78	84

Course Outcome 3	87	84	81	84	85
Course Outcome 4	76	64	71	74	82
Course Outcome 5	76	70	74	77	83

Engineering Physics I (PHYS 104)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	75	88	XX	XX	XX
Course Outcome 2	68	85	XX	XX	XX
Course Outcome 3	74	92	XX	XX	XX

Engineering Physics II (PHYS 105)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	75	88	XX	XX	XX
Course Outcome 2	68	85	XX	XX	XX
Course Outcome 3	74	92	XX	XX	XX

Engineering Physics I Lab (PHYS 140)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	82	75	XX	XX	XX
Course Outcome 2	87	75	XX	XX	XX
Course Outcome 3	79	90	XX	XX	XX

Engineering Physics II Lab (PHYS 145)

Course Outcome/Year	15/16	16/17	17/18	18/19	19/20
Course Outcome 1	94	87	XX	XX	XX
Course Outcome 2	79	87	XX	XX	XX
Course Outcome 3	91	84	XX	XX	XX

Transferability of Program courses

Most of the courses taught in this program are transferable to regent institutions. This is because the courses have gone through the KCOG meetings where common course outcomes have been developed. The table below provide transfer data from Emporia State University, the only institution to provide us with such information on how our students are doing.

Course Transfer Equivalencies to Regents Universities

Transfer Data - Emporia State University					
Community College Academic Subject Progress Report for: NCCC Physics					
	*Number of Courses	Total Credit Hours	NCCC Student SUBJECT GPA	ESU SUBJECT GPA	**CC SUBJECT GPA
2013 Fall	8	20	1.71	2.88	2.73
2014 Spring	N/A	N/A	N/A	N/A	N/A
2014 Fall	5	13	3.47	2.85	2.88
2015 Spring	13	30	1.93	2.72	2.51
2015 Fall	N/A	N/A	N/A	N/A	N/A
2016 Spring	8	22	2.96	2.85	3.15
2016 Fall	N/A	N/A	N/A	N/A	N/A
2017 Spring	6	16	3.5	2.78	2.85
2017 Fall	9	23	3.34	2.86	3.04
2018 Spring	5	10	1.74	2.63	2.68
2018 Fall	2	5	3.40	2.80	2.67
2019 Spring	N/A	N/A	N/A	N/A	N/A
2019 Fall	N/A	N/A	N/A	N/A	N/A
2020 Spring	N/A	N/A	N/A	N/A	N/A
*Number of courses NCCC students enrolled in for this subject area					
**All Community College GPA for this subject					

Efforts to stay current in curriculum

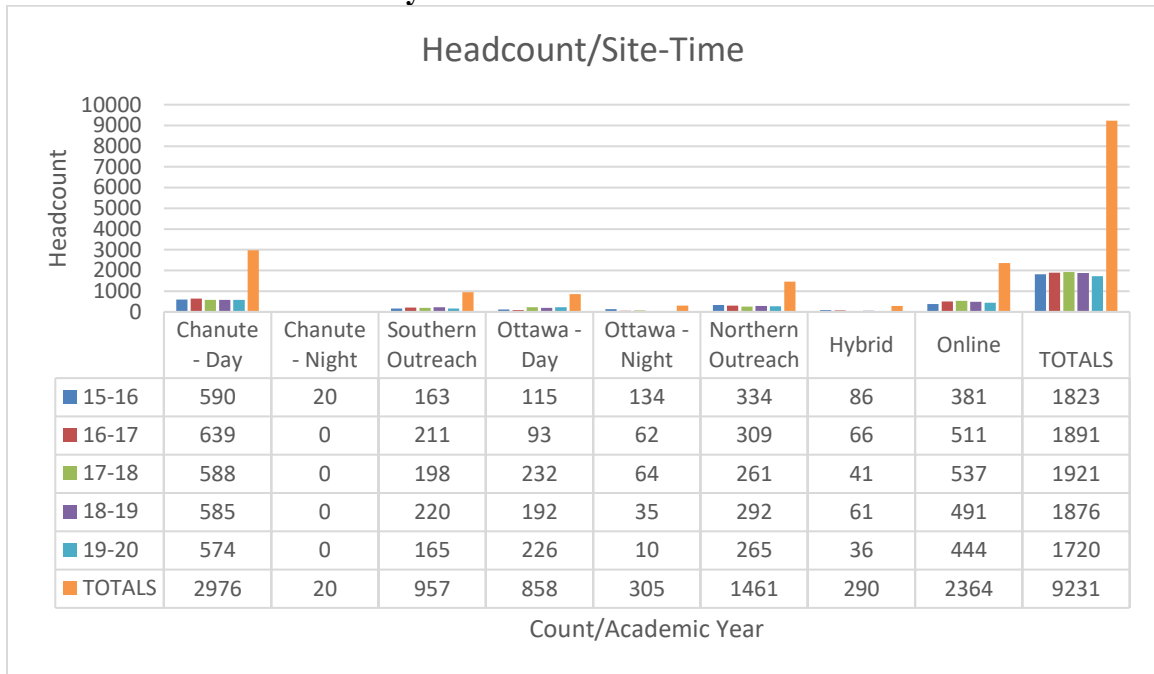
In prior years and as reported during the last full program review of 2005/2006 through 2009/2010, there had been an advisory group for the Industrial Engineering Technology and Pre-Engineering Technology program. We have not had such advisory meetings for this program compounded by the fact that we do not have a full time faculty member in charge of the program. However, all full-time faculty members teaching courses listed as core courses in the program stays current in the curriculum for the courses that they teach. Full time faculty members also actively participate in statewide KCOG meetings in addition to specific professional development activities pertinent to their teaching area. This academic year has however, been a challenge for faculty seeking professional due to limited conferences and workshops.

Section 3: Data – Enrollment and Costs

Enrollment by site and time

The number of students enrolled in courses within the Industrial Engineering Technology and Pre-Engineering Technology program have remained relatively constant over the last five years of this program review. Chanute day and online has had the highest headcount of all the courses in the program. There are a good number of students enrolled in the outreach sites for both Chanute and Ottawa campuses with Ottawa campus registering the highest numbers.

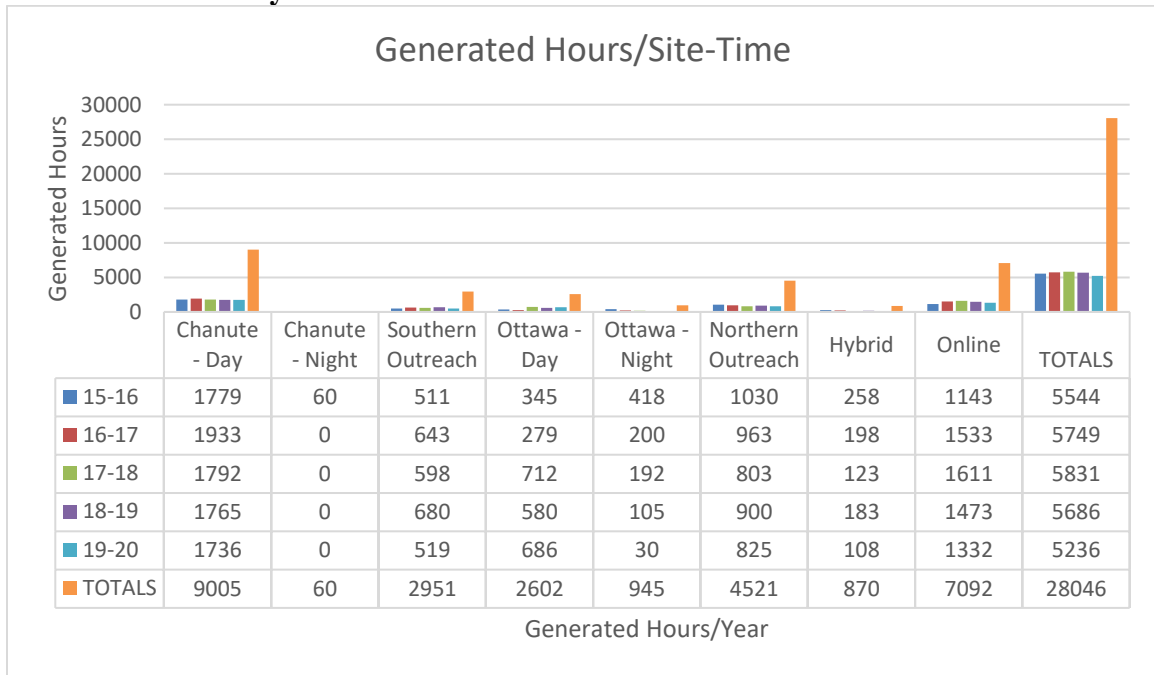
Enrollment and Headcount by Site and time



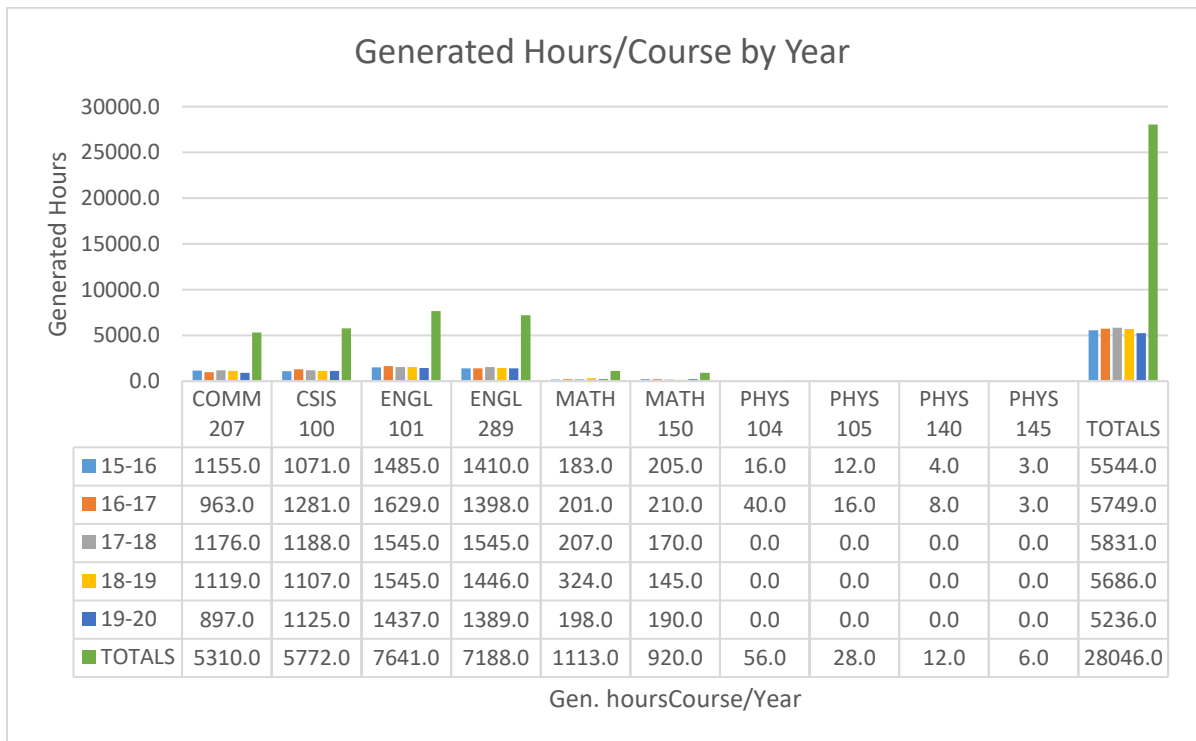
Generated Hours by Site and Course

Looking at the generated hours by site, Chanute Day and Online leads with the number of hours generated. Chanute Night has the least generated hours primarily due to the low number of evening courses offered. Outreach sites for both Chanute and Ottawa campuses continue to record good generated hours. As far as generated hours by course, English courses lead with the highest generated hours with Engineering Physics II lab with the least generated hours. The low generated hours in Physics Lab II is due to students dropping after Physics I by either transferring to a four year institutions or not wanting to not take Physics II course leading to course cancellations. Detailed information about generated hours by site and by course are shown in the graphs below.

Generated Hours by Site



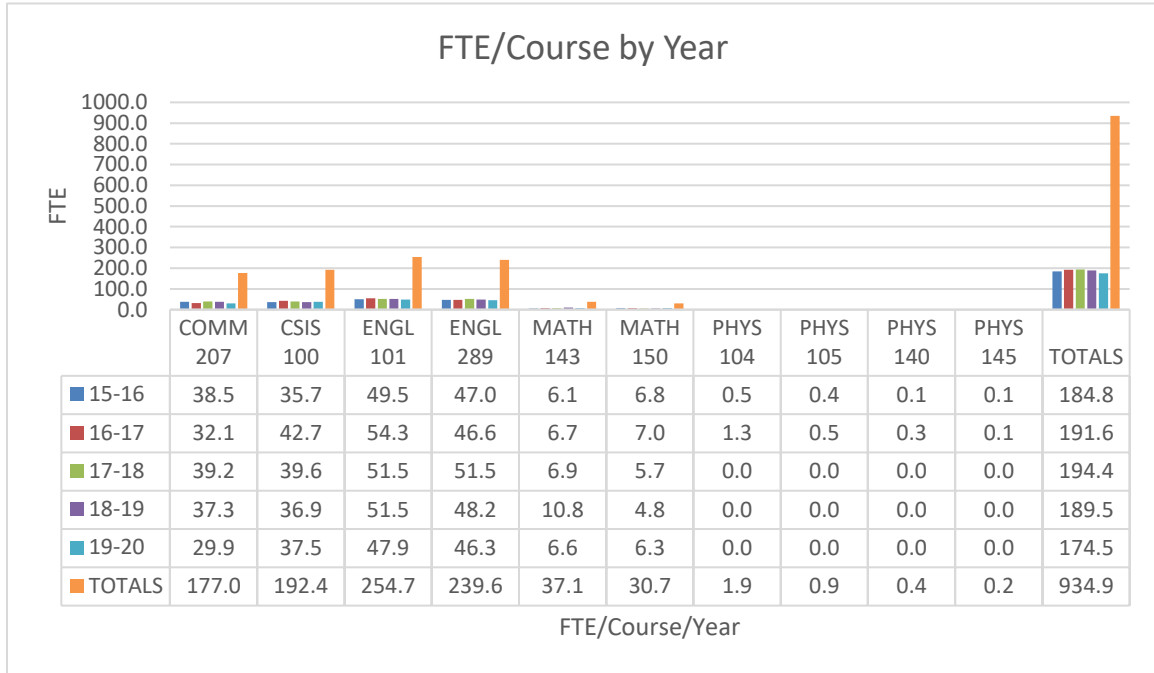
Generated Credit Hours by Course



FTE

Given that most of the courses taught in this program and serving as core courses are part of other programs at NCCC, the FTE numbers do not accurately reflect a true picture of the program. English courses, though, leads in the number of FTE for this program.

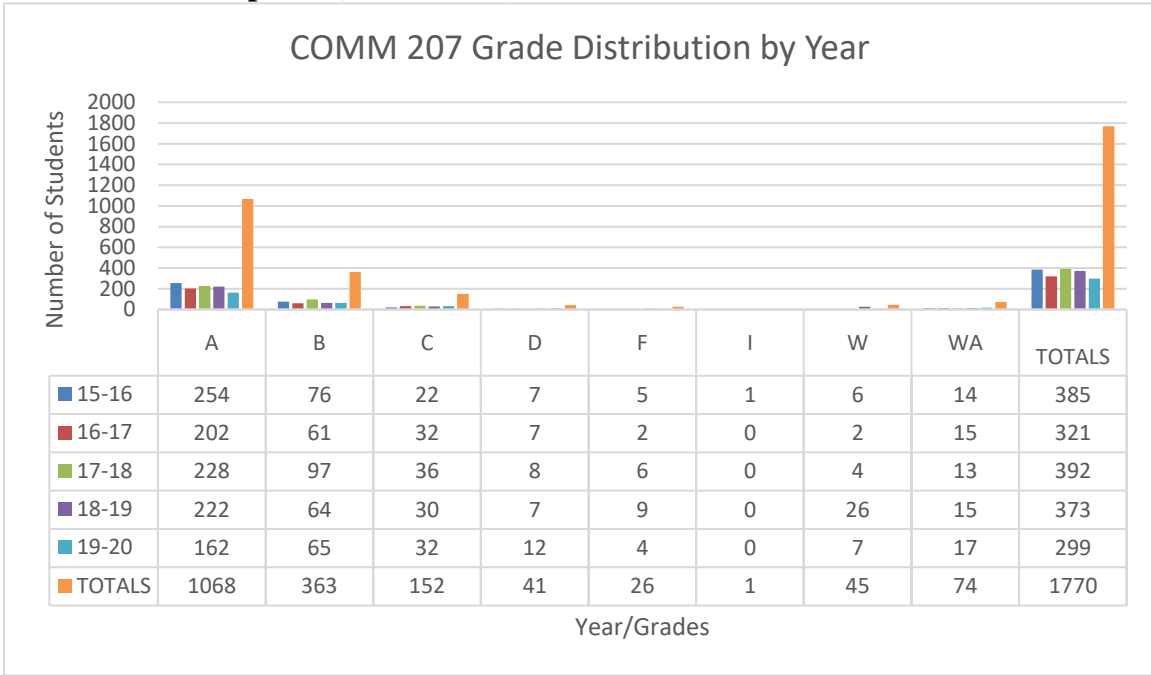
Full Time Enrollments by Course and Year



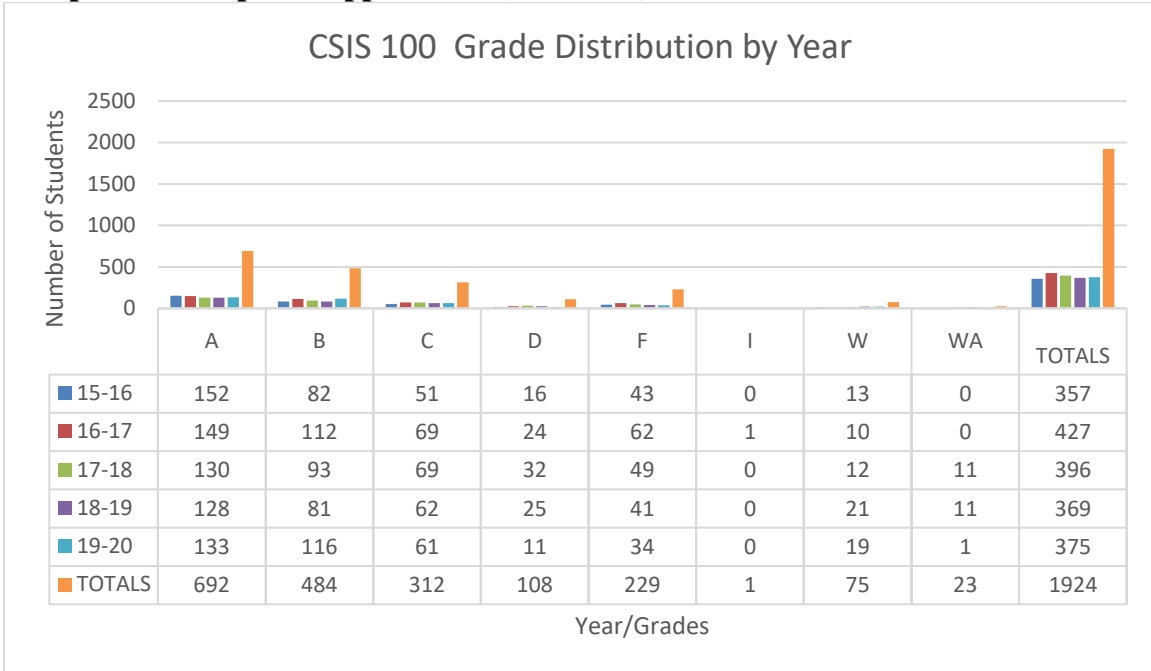
Course Grade Distribution

The graphs presented below show grade distributions for the core courses taught in the Industrial Engineering Technology and Pre-Engineering Technology Program. Majority of the students are passing the courses taught with a grade of C or above. Engineering Physics courses are the only courses within the program with low enrollments. The low enrollments in engineering physics has been due to more students preferring to enroll in Introductory Physics instead. As result, we have had to cancel engineering physics courses.

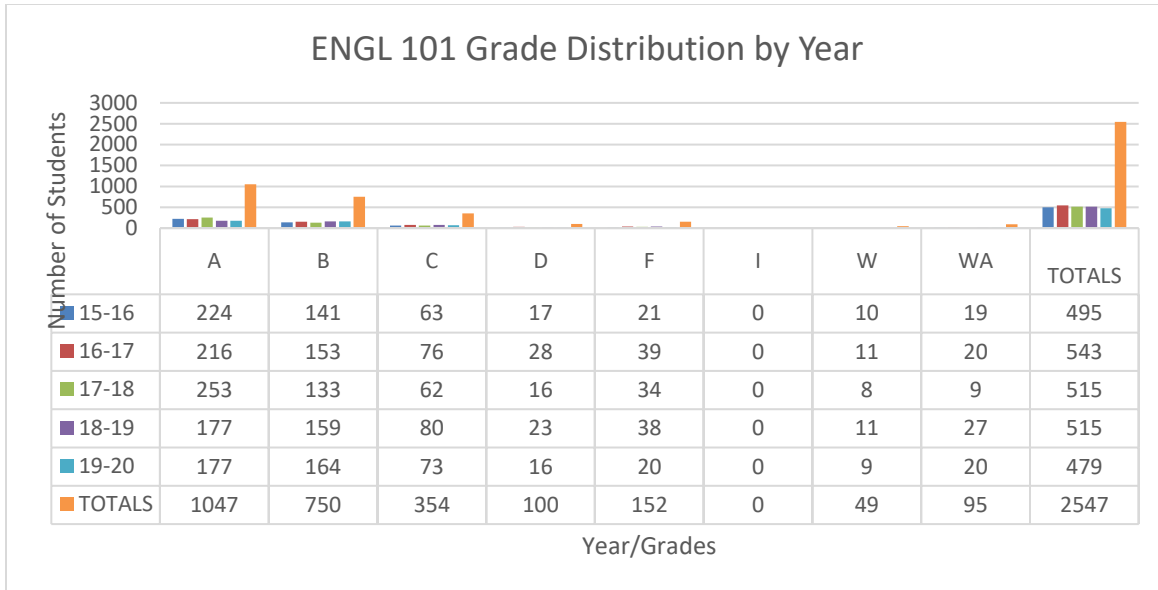
Fundamental of Speech (COMM 207)



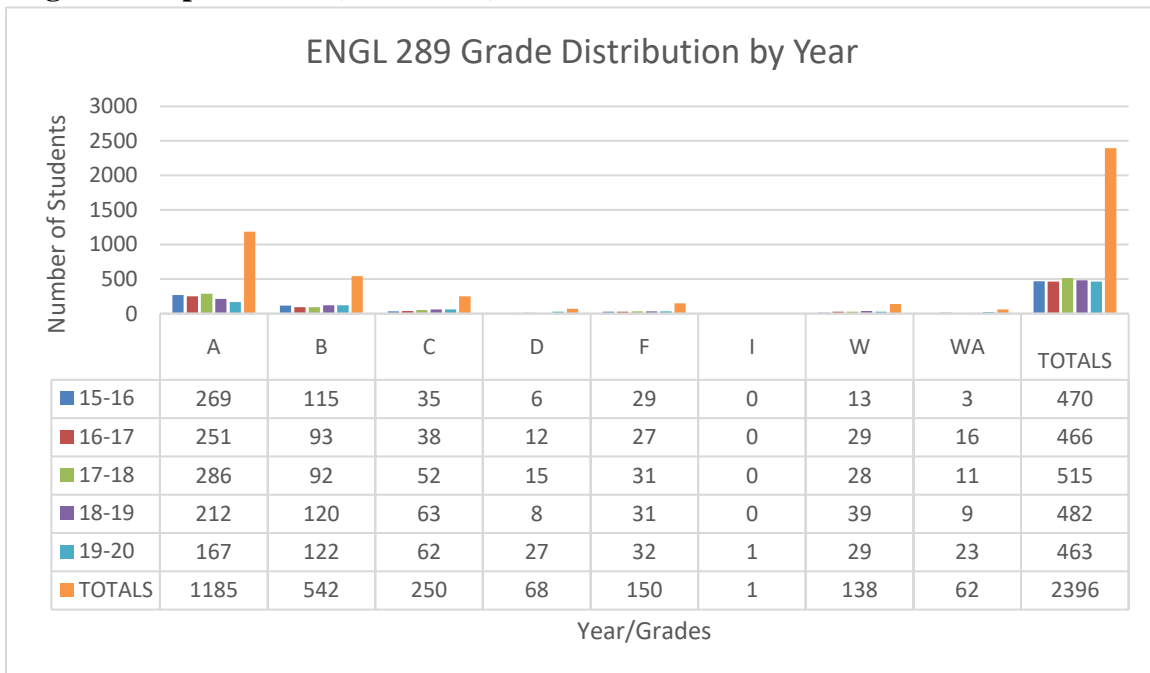
Computer Concepts & Applications (CSIS 100)



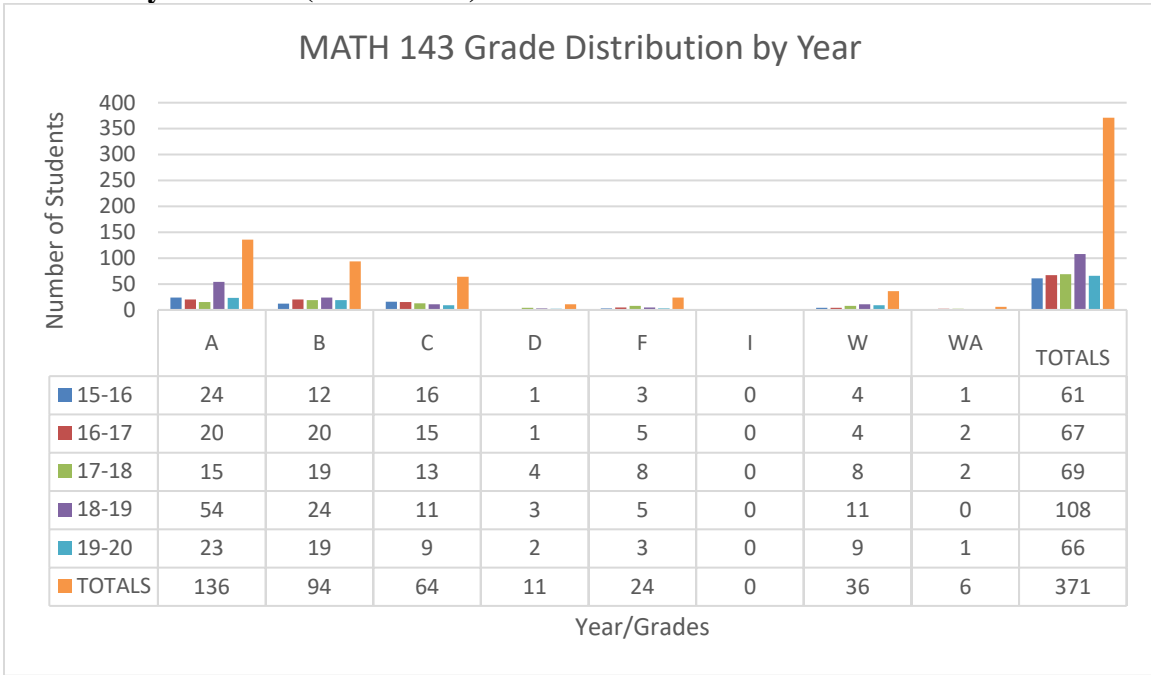
English Composition I (ENGL 101)



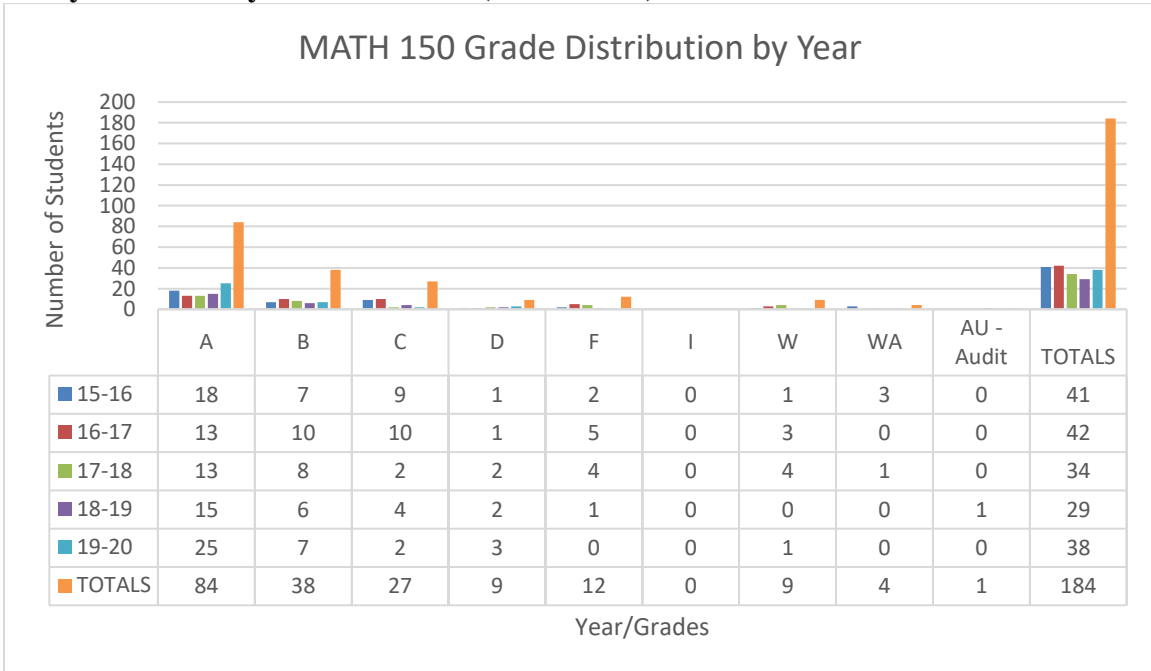
English Composition II (ENGL 289)



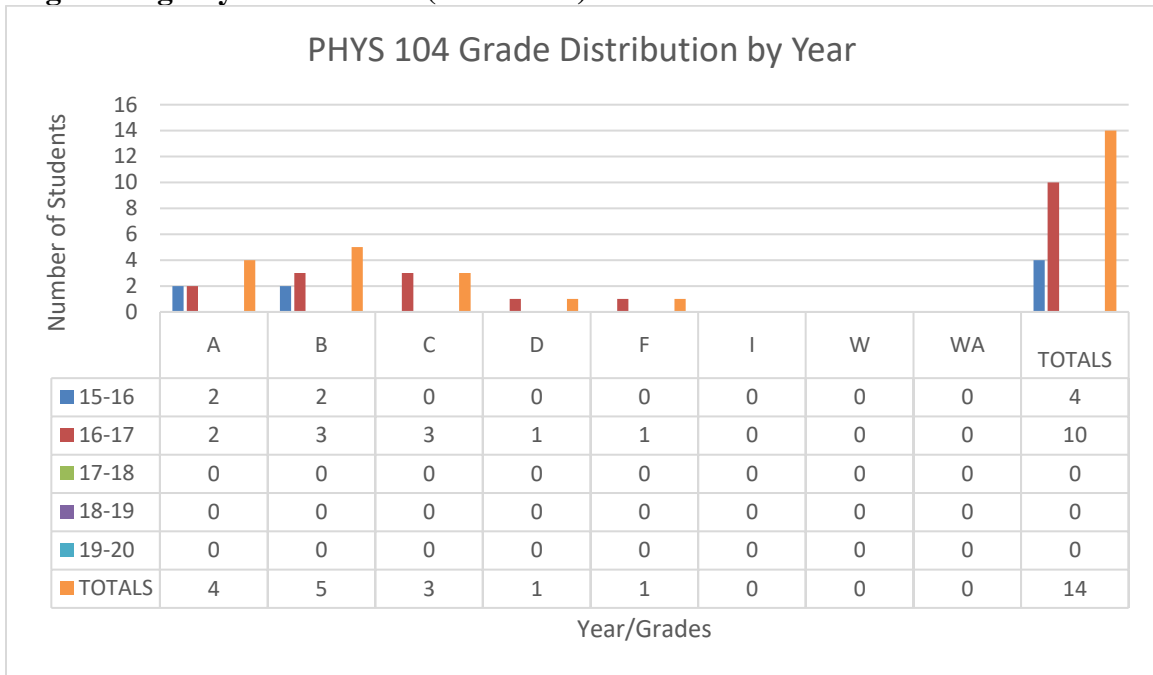
Elementary Statistics (MATH 143)



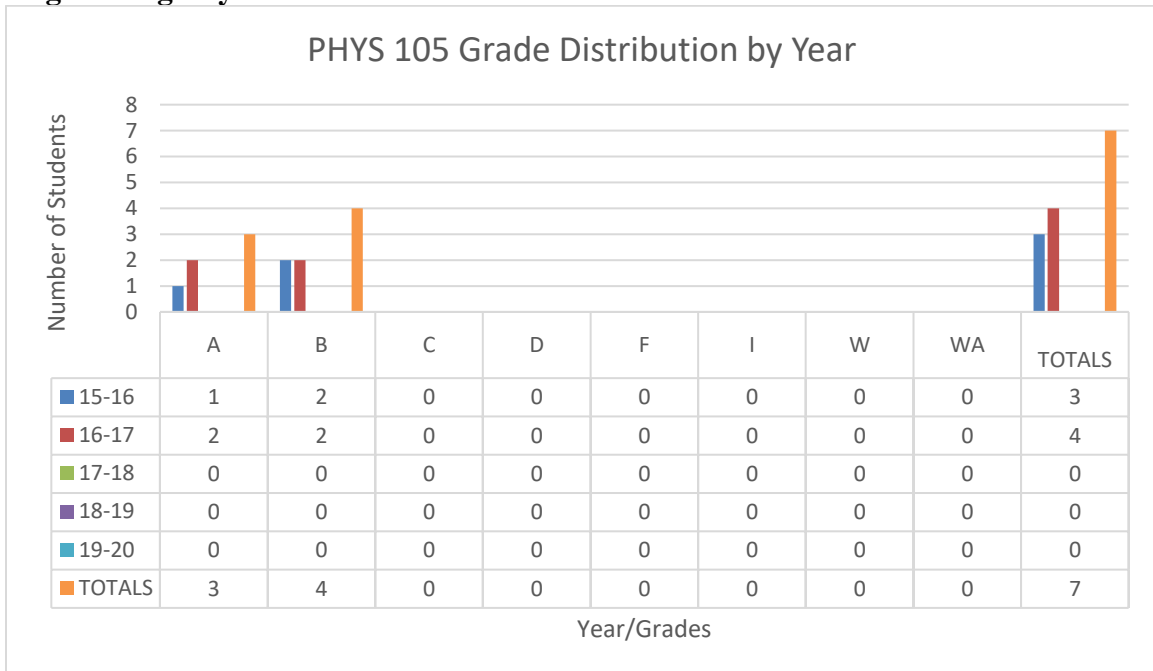
Analytic Geometry and Calculus I (MATH 150)



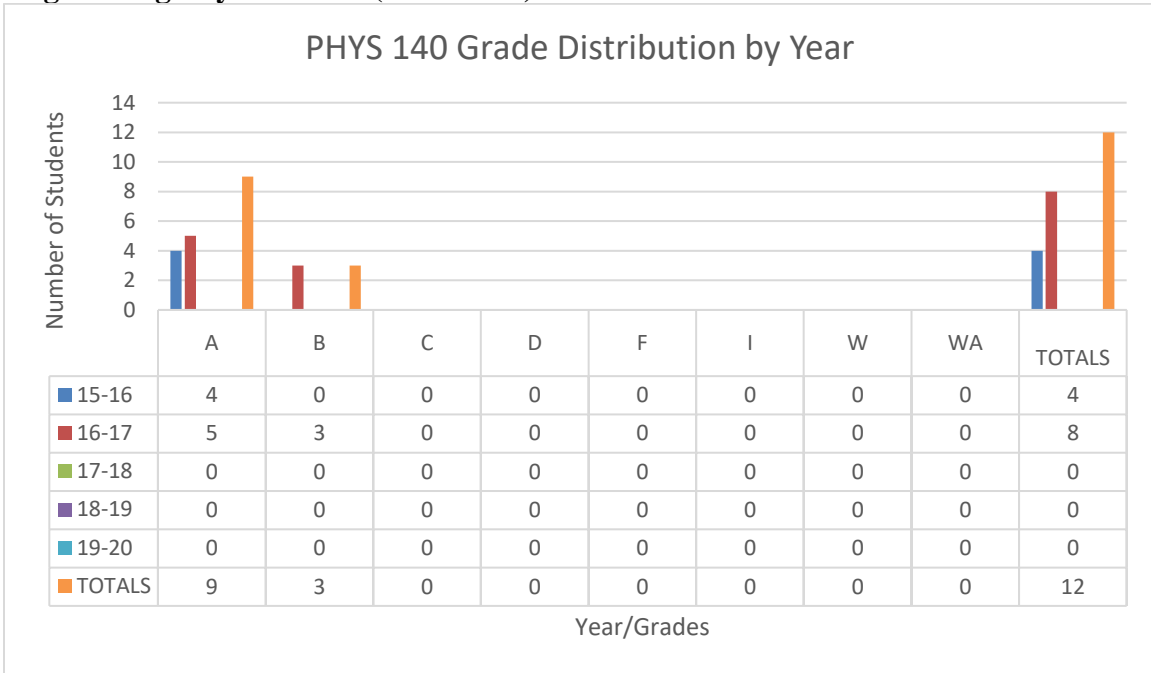
Engineering Physics I Lecture (PHYS 104)



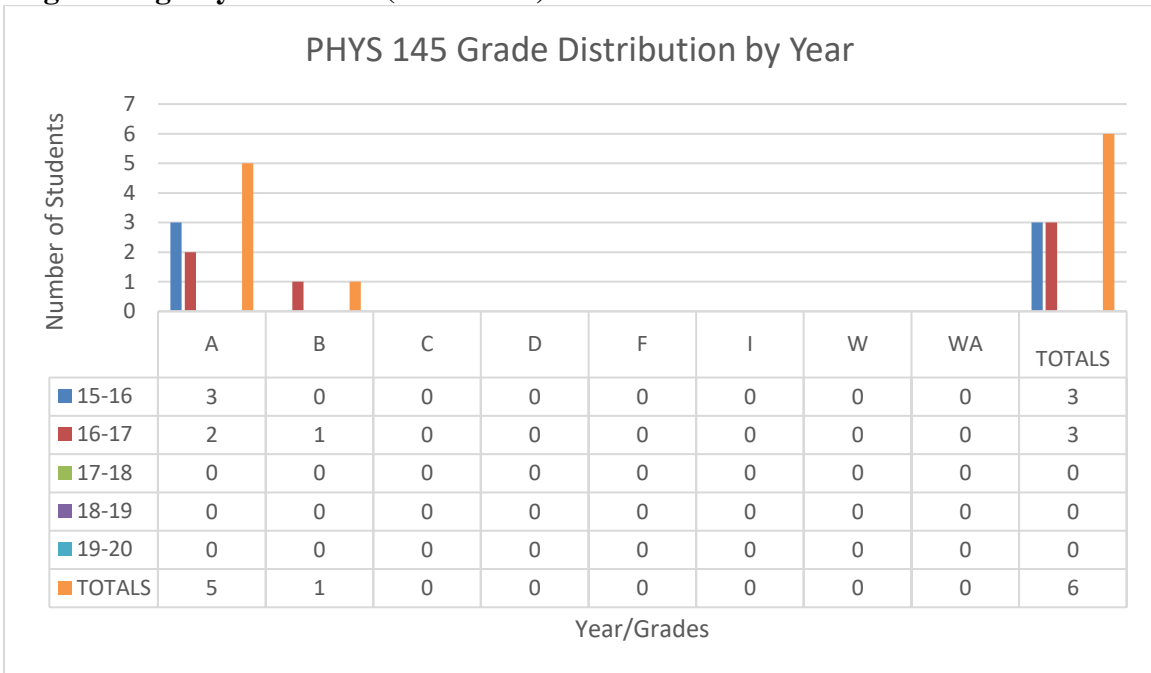
Engineering Physics II Lecture PHYS 105



Engineering Physics I Lab (PHYS 140)



Engineering Physics II Lab (PHYS 145)

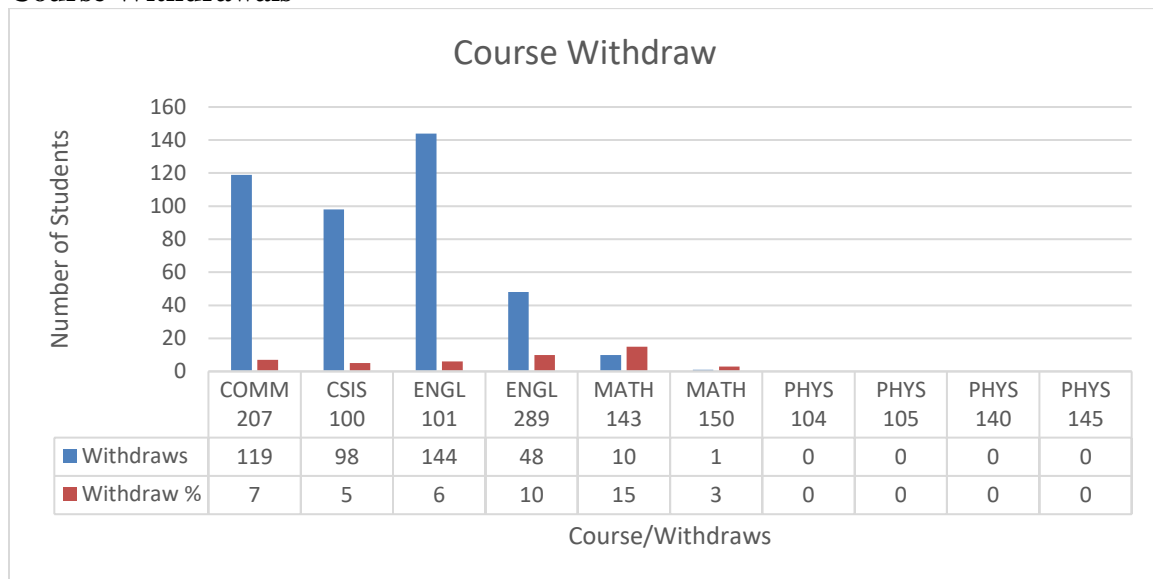


Course Withdrawal Numbers and Percentages

The data presented in the graph below indicate the number and percentages of students who withdrew with W or who were administratively withdrawn (WA) from the specified courses within the Industrial Engineering Technology and Pre-Engineering Technology

program. Among the core courses in the program, MATH 143 has the highest withdrawal percentages.

Course Withdrawals



Students in Industrial Engineering Technology and Pre-Engineering Technology Program

Looking back at the program, there were 48 unduplicated students who had declared a major of Industrial Engineering Technology with three students graduating with an associate of science at the 2005/2006 through 2009/2010 program review. In 2010/2011 through 2015/2016 when a status update was provided, there were no students recorded in the program. During this program review period, 18 students had indicated as working towards an emphasis in Industrial Engineering Technology and Pre-Engineering Technology Program. Out of the 18 students that had indicated to working towards an emphasis in Industrial Engineering Technology and Pre-Engineering Technology program, only three students were awarded with an Associate of Applied Science degree. The low number of students being awarded degrees in the area could be due to some students taking courses in the program but do not complete all the required courses or due to course cancellations thereby resulting to students not finishing the coursework in the program.

Cost information

The Industrial Engineering and Pre-Engineering Technology program does not have a standalone budget. The running of the program has relied on budgets from several areas within the divisions of Applied Science and Liberal Arts. This was the same case during the last full program review of 2005/2006 through 2009//2010. Prior to 2005/2006, the program had a separate budget but that was cut due to low enrollment.

Section 4: Faculty

During this program review, the number of full time faculty members were at 15 with 55 part time instructors who taught 35 % and 65 % of total courses respectively in the program.

Faculty	Courses Taught	% Courses Taught
Full-time	235	35
Part-time	428	65
Total	663	100

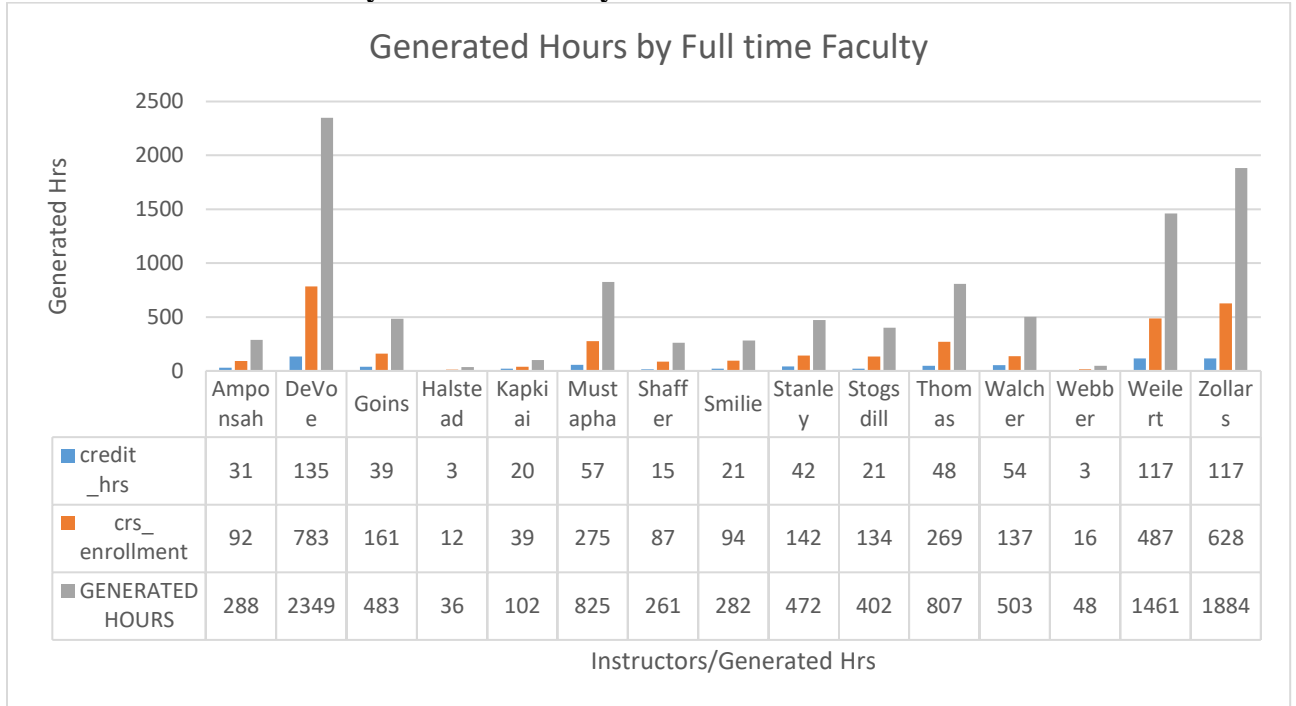
Generated Credit Hours by full time and part time Faculty

The list below shows full time and part-time faculty members that taught courses in Industrial Engineering and Pre-Engineering Technology program. In addition, information presented in the graph below shows the number of credit hours generated by full-time instructors whereas the list of part time faculty members also show credit hours they generated.

List of Full-time Instructors

Amponsah, Jonah K
DeVoe, Chad W
Goins, Megan A
Halstead, James
Kapkiai, Luka K
Mustapha, Angela A
Shaffer, Dustin
Smilie, Ethan K
Stanley, Nathan L
Stogsdill, Tricia J
Thomas, Reena M
Walcher, Paul C
Webber, Richard E
Weilert, Mary E
Zollars, Ruth E

Generated Credit Hours by full time Faculty



List of Part time instructor

Faculty	Crs_Enrollment	Generated Hours
Allred, John K	15	45
Bailey, Leroy	87	261
Baldwin, Deborah H	35	105
Bazil, Grace E	30	90
Beck, David A	113	339
Becker, Hannah G	36	108
Bowman, Ralph E	20	60
Broyles, Clayton N	37	111
Carpenter, Anna M	222	666
Chaney, Craig C	8	40
Conway, Robert D	9	27
Cook, Katherine E	87	261
Crays, Tammy K	275	825
Crossen, Sophia L	16	48
Donaldson, Chloe M	68	204
Flax, Angela M	538	1614
Gardner, Marie L	279	837
Graf, Michelle R	5	15

Greasby, Rebecca L	22	66
Gulley, Jeremy M	395	1185
Hampton, Deborah M	85	255
Hanson, Robert A	14	42
Hassler, Kristopher L	3	15
Heiman, Patti D	72	216
Hindle, Nancy E	605	1815
Holmes, Eric J	40	200
Hudson, Sterling D	35	105
Hutton, Brian A	15	45
Jackett, Elizabeth M	59	177
Kimes, Ronald R	93	279
Kinyon, Cortney	146	438
Kneibler, Jennifer M	114	342
Kramer, Jo E	22	66
Lenning, Patricia S	1	3
Markham, Vicki L	19	57
McAdoo, Karen J	11	33
McDonald, Patricia A	328	984
McReynolds, Elizabeth A	79	237
Meigs, Jennifer L	3	9
Miller, Amy J	109	327
Miller, Kristi K	131	509
Moon Bradley, Anna M	1	3
Oliver, Elizabeth	20	60
Reagan Kendrick, Amber E	316	948
Richards, Dennis S	158	474
Robinson, Katelynn R	40	120
Rockers, Leslea A	40	120
Rottinghaus, Dawn E	2	6
Ruark, Max A	410	1230
Ruis, David L	159	477
Schallie, Robin M	101	303
Taylor, Melinda Ann	256	768
Villaca, Kristina	45	135
Wendt, Roxanne M	18	54
Yarnell, Tara M	28	84

Section 5

SWOT Analysis of Program based on above information

Strengths

- We have a great faculty teaching courses in this program
- We have been able to acquire a few lab equipment for use in Physics courses. The equipment has been purchased using Physical Science budget.
- Most of the courses in the program have been looked at the KCOG meetings and therefore can transfer across the state

Weaknesses

- We do not have a full time instructor in charge of the program
- We no longer have scholarship opportunities for students in the program.
- We no longer have a technology advisory group meeting
- Our enrollments in Physics have continued to be low.

Opportunities

- We continue to explore partnership with other colleges and especially Pittsburgh state University

Threats

- Low enrollment in Physics courses

Recommendations

As pointed during the last full program review, the Associate of Science with an emphasis in Industrial Engineering Technology/Pre-Engineering Technology is closely similar to the Associate of Science with an emphasis in Physics and Pre-Engineering which follows a more traditional engineering pathway. It is recommended that we look into merging this program with Physics and Pre-Engineering program. Additionally, during the status update of 2015, two things were identified that resulted in no recommendation of the program; first, it was found that the program with emphasis in Industrial Engineering Technology/Pre-Engineering Technology was no longer listed on EX and second; a status update on a partnership with PSU Technology was still outstanding. The issue of program being listed on EX has been resolved with the only thing left outstanding being the partnership with PSU. A discussion on how to better move forward with this program will have to be addressed in the near future.