**Part A**

This is the first comprehensive Assessment Reporting year for all programs in our department, so this report is somewhat longer than the usual Annual Assessment report. We look forward to gaining feedback on this process for improvement next year. We have included an overview of the entire assessment program in this report. Since course level data collection has begun only this spring, there are no data to review yet. The data are being collected now and this summer and will be reviewed by the faculty and advisory board in the Fall 2015 semester.

1. **List of Program Learning Outcomes (PLOs)**

All assessment measures were developed by the faculty working jointly with the program advisory board and area Industrial Technology education partners, and was corroborated by alignment with a competency gaps analysis conducted by the Society of Manufacturing Engineers. The measures are reflected in course level assessment tools that indicate mastery of learning objectives along with the means used to measure this learning. Two examples of a recent course assessment instrument are included in the appendices.

The Program Learning Outcomes (PLOs) for all Aviation and Technology Dept. programs are:

a. Demonstrate strong communication, critical thinking, and interpersonal skills;
b. Use skills in team development, dynamics, and management to work as team players;
c. Demonstrate ethical behavior and concern for colleagues, society, and the environment;
d. Demonstrate leadership skills for a technology professional.

The individual PLOs for each program under the BS degree program in Industrial Technology are shown in section 2, Map of PLOs to ULGs. The manner in which learning of the outcomes is attained (eg: exam, homework, project, paper, etc) is shown in the data collection forms used by each instructor.
2. Map of PLOs to University Learning Goals (ULGs)

Tables 1–4 below illustrate the relationship between the SLOs for each program concentration and the University Learning Goals. They demonstrate good overlap between the SLOs for each program and the ULGs. Tables 5-8 show the alignment of both overarching PLOs and program SLOs to the required courses for each program. This alignment work was conducted by Dr. James Yu, the department assessment coordinator, working with all the faculty.

Table 1 Matrix of BSIT-Manufacturing Systems program Student Learning Outcomes to ULGs

<table>
<thead>
<tr>
<th>BS Industrial Technology</th>
<th>University Learning Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing Systems Concentration SLOs</td>
<td>Specialized Knowledge</td>
</tr>
<tr>
<td>M1. Demonstrate skills in the planning and design of manufacturing processes.</td>
<td>X</td>
</tr>
<tr>
<td>M2. Describe the product life cycle and how products are manufactured.</td>
<td>X</td>
</tr>
<tr>
<td>M3. Design and plan industrial facilities</td>
<td>X</td>
</tr>
<tr>
<td>M4. Select and operate computer numerical controlled and other machines</td>
<td>X</td>
</tr>
<tr>
<td>M5. Describe the uses, advantages, and disadvantages of current and evolving manufacturing techniques including laser machining, electrical discharge machining, water jet and abrasive water jet machining, and rapid prototyping.</td>
<td>X</td>
</tr>
<tr>
<td>M6. Select analysis and use polymers, composite materials, and materials in the design of manufactured products.</td>
<td>X</td>
</tr>
<tr>
<td>M7. Apply the theory of computer-integrated manufacturing (CIM), including the computer-aided design/computer-aided manufacturing (CAD/CAM) interface to industrial problems and settings.</td>
<td></td>
</tr>
<tr>
<td>M8. Use the principles of production scheduling &amp; planning in an industrial environment</td>
<td>X</td>
</tr>
<tr>
<td>M9.</td>
<td>Demonstrate an understanding of materials management including Just-in-Time (JIT) and Materials Resource Planning (MRP)</td>
</tr>
<tr>
<td>M10.</td>
<td>Integrate design, manufacturing, and materials into the design and development of new products</td>
</tr>
<tr>
<td>M11.</td>
<td>Apply the principles of Lean Manufacturing to manufacturing and soft systems</td>
</tr>
<tr>
<td>M12.</td>
<td>Apply OSHA and NIOSH principles to facilities design and management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BS Industrial Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Computer Electronics Network Tech SLOs</strong></td>
</tr>
<tr>
<td>E1. Solve electronic circuit and electronic systems problems or designs in analytical and creative ways.</td>
</tr>
<tr>
<td>E2. Analyze and troubleshoot analog and digital communication circuits and systems</td>
</tr>
<tr>
<td>E3. Use microprocessors and associated circuits in test simulations and system interfacing of processes.</td>
</tr>
<tr>
<td>E4. Develop and implement software systems for control of electronic industrial processes.</td>
</tr>
<tr>
<td>E5. Analyze the role of instrumentation and automation in the electronics industry.</td>
</tr>
<tr>
<td>E6. Apply telecommunications theory to industrial settings and problems</td>
</tr>
<tr>
<td>E7. Setup and manage computer networks</td>
</tr>
<tr>
<td>E8. Design and Analyze electronic circuits and systems using simulation and hands-on experiments</td>
</tr>
<tr>
<td>E9. Demonstrate an understanding of materials management including Just-in-Time (JIT) and Materials Resource Planning (MRP)</td>
</tr>
</tbody>
</table>
### 3. Alignment – Matrix of PLOs to Courses

**Table 3 Matrix of Program Learning Outcomes and Student Learning Outcomes to Required Courses of MFGS program**

*(see table 1 for mapping of Program SLOs to ULGs)*

<table>
<thead>
<tr>
<th>BS Industrial Tech/Manufacturing Systems</th>
<th>PLOs</th>
<th>SLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course List</td>
<td>a  b</td>
<td>c  d</td>
</tr>
<tr>
<td><strong>Tech 020: Design and Graphics</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 025: Introduction to Materials Technology</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 031: Quality Assurance and Control</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 041: Machine Shop Safety</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 045: Sustainable Facilities Design &amp; Planning</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 046: Machine Operation and Management</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 060: Introduction to Electronics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tech 065: Networking Theory and Application</strong></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Tech 115: Automation and Control</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 140: Green &amp; Sustainable Product Design</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 145: Lean Manufacturing</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 147: Green Manufacturing Analysis &amp; Mgt</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tech 190: Senior Seminar in Technology</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>BS Industrial Technology/Computer Electronics and Network Technology</td>
<td>Course List</td>
<td>PLOs</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a</td>
</tr>
<tr>
<td></td>
<td>TECH 031: Quality Assurance and Control</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>TECH 065: Networking Theory and Application</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>TECH 115: Automation and Control</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>TECH 145: Lean Manufacturing</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>TECH 160: Microprocessors Theory and Applications</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>TECH 163: Telecommunications Systems</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>TECH 165: Wireless Communications Technologies</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>TECH 167: Control Systems</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>TECH 169: Applied Electronic Design</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>TECH 190: Senior Seminar in Technology</td>
<td>X</td>
</tr>
</tbody>
</table>
4. Planning – Assessment Schedule

The assessment schedule measures outcomes in each program, in key courses in the curriculum as shown below. The assessment schedule seems a bit aggressive, taking outcomes measures from each course once per year. This may be modified to once every other year after the first year review is complete.

The program had a prior assessment plan but the data collection was too ponderous to be maintained. The schedule was restarted Fall 2014, starting with the current capstone course, Tech 190, and the core course Tech 145. * The capstone course will be changed from Tech 190 to Tech 190A/B in Fall 2016 per the Fall 2014 catalog, so it is listed here in its future form.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Course Role</th>
<th>AY 2014-15</th>
<th>AY 2015-16</th>
<th>AY 2016-17</th>
<th>AY 2017-18</th>
<th>AY 2018-19</th>
<th>AY 2019-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tech 031</td>
<td>Quality Assurance</td>
<td>CORE</td>
<td>M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
</tr>
<tr>
<td>Tech 060</td>
<td>Intro to Electronics</td>
<td>CORE</td>
<td>M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
</tr>
<tr>
<td>Tech 115</td>
<td>Automation &amp; Control</td>
<td>CORE</td>
<td>M</td>
<td>R</td>
<td>I/M</td>
<td>M</td>
<td>R</td>
<td>I</td>
</tr>
<tr>
<td>Tech 145</td>
<td>Lean Manufacturing</td>
<td>CORE</td>
<td>M</td>
<td>R/I/M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
<td>I/M</td>
</tr>
<tr>
<td>Tech 149</td>
<td>Computer Integrated Mfg</td>
<td>Advanced MFGS</td>
<td>M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
</tr>
<tr>
<td>Tech 169</td>
<td>Applied Electronic Design</td>
<td>Advanced CENT</td>
<td>M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
</tr>
<tr>
<td>Tech 190B*</td>
<td>Senior Project II</td>
<td>Capstone</td>
<td>M</td>
<td>R/I/M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
<td>I/M</td>
</tr>
<tr>
<td>Tech 198</td>
<td>Technology &amp; Civilization</td>
<td>CORE/GE</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
<td>I/M</td>
<td>R</td>
<td>I/M</td>
</tr>
</tbody>
</table>

M  Collect data  
R  analyze and review  
I  Implement changes  
I/M  Implement and Measure
In addition to the course-level outcomes assessment, the Department will continue to gather outcomes information from graduates, as well as feedback from students in the program, every 2 to 3 years. The most recent surveys were conducted in Fall 2014, with previous surveys conducted in 2010 and 2012. Finally, the surveys (both graduate and student) and other outcomes reports will be provided to the program advisory board which meets at least once each year, for their review and feedback. The next review will be in Fall 2014.

5. **Student Experience**
The department lists all PLOs and SLOs on each course green sheet, and on the department website, linked to the pages for each program. At this time current students are not engaged directly in the creation of or review of the outcomes; however, there is a student representative on the Industrial Technology Industry advisory board who will be able to provide student viewpoint starting this year. In addition the surveys of current students which are conducted every 2 to 3 years are part of our assessment process and will be used to shape and revise our PLOs. The faculty will discuss whether or not involving the students directly in the creation or revision of program outcomes is a good idea, and if so how to accomplish this purpose, starting in Fall 2015.

Part B

6. **Graduation Rates for Total, Non URM and URM students (per program and degree)**

See attached RDE. *These interpretations may not be correct as the tables are hard to follow*
The faculty understand graduation rates in our major to be slightly higher than for the university overall and higher than for the College of Engineering. This assumption is under review based on the current RDE.

- Graduation rates for FTF at 6 years is 100% for the Fall 2004 and 2005 cohorts, and 33% (URM) for the 2007 cohort. There is no data provided for the 2006 cohort.
- Graduation rates for UGT varies from 45.5% for the Fall 2010 cohort, to a low of 20% for the 2009 cohort. 2007 and 2008 cohorts show rates of 40 and 43% respectively.
- The graduate program has been quite small but shows a graduation rate of 100% for the 2006 and 2008 cohorts and 33.3% for the 2010 cohort.

7. **Headcounts of program majors and new students (per program and degree)**

See attached RDE.
As has been reported in various parts of this document, enrollment of majors in the BS Industrial Technology was at a low of approximately 79 students (for both programs combined) in Fall of 2008, and started growing after that on a steady curve. The RDE shows UG majors totaling 89 in Fall 2010 and rising to 123 in Fall 2012 and to 194 in Fall 2014. The table shows this growth to be fairly steady at slightly less than 25% per year. The program has technical impacted status but is currently not using any supplementary admissions criteria, and does not expect to do so until the program reaches about 350 majors.

Part of this growth is attributable to increased applications, up from 52 for Fall 2010 to 98 for Fall 2013 and 84 in Fall 2014. We think this growth is related to outreach and improved communications of our programs in area Community Colleges by the faculty and college. A portion
of this growth in major headcount however is directly attributable to work done by the faculty to increase visibility in the community and in the university, and to improve communication of program outcomes and goals to students throughout the College of Engineering. The faculty, particularly Dr. Garcia and Dr. Bates, have worked very closely over the past five years with the staff of the Engineering Student Success Center to improve in-college retention of students who are not successful or not happy with other majors in the College, with the result that Change of Major applications to our programs have been a major source of new students.

8. **SFR and average section size (per program)**

See attached RDE. Student-Faculty ratios for the Industrial Technology programs have been historically low, primarily because this is an intensively hands-on, real-world curriculum with lab sections limited for safety reasons to 20 to 25 students. This can be seen in the RDE which shows SFRs from 2009 to 2013 with a high of 16.8. As the program has grown in recent years and with review by the faculty, lecture sections have been larger, covering two lab sections together, and improving SFR.

Average section size, as with SFR, has been historically low, and was lower still in the period prior to 2010 due to the then decline in the number of majors. As the number of majors has grown from a low of about 80 in 2008-2009 to close to 200 today, lecture section enrollment has risen dramatically, from a historical low of about 24 to 29 students to an average of 37 in 2014, and this average is rising still. The average enrollment in lower division class lecture sections is somewhat higher than in upper division courses (42 LD compared to 34 UD in Fall 2010), which reflects the upward direction of program majors headcount.

As the number of majors in each program increases it will be possible to further improve average section size and, correspondingly, SFR. Availability of a larger lecture room for core classes will also help, and is anticipated in Summer 2015. Current SFR is higher than that shown in the RDE and is expected to increase steadily to above 20, much closer to the College average. Increases beyond that will require faculty review and redesign to reduce the number of lab courses in the curriculum. The faculty will be discussing this option starting in Fall of 2015.

9. **Percentage of tenured/tenure-track instructional faculty (per department)**

See attached RDE, table 3c. (*The table does not show FT vs. PT faculty*)
The Industrial Technology program FT (tenure line) faculty are mostly at or close to retirement age, and after the program enrollment decline which ended in 2009 has resulted in a faculty that are heavily tenured in. Five of the 7 faculty in the program entered the FERP program since 2009, and one has since retired. Thus the faculty in the IT program are are both 'tenured in' and also 'FERPed in', with currently four of the 6 remaining tenure line faculty enrolled in the FERP program. In addition, one of our FTT faculty is on semi-permanent assignment to research work at the college or university level. A small number of dedicated and talented part time faculty augment the faculty and provide effective instruction for our majors. Part-Time to Full-Time faculty ratios were 27/73% in Fall 2013 and 31.5/68.5% in Fall 2014. Additional FERP departures are expected in 2016, 2017, and 2018. The program has requested a new tenure-line faculty search for AY 2015-2016.
Part C

10. Closing the Loop/Recommended Actions

This is the first Annual Assessment submitted for our programs since 2007, so there is no prior review at the college of university level yet. The following are the primary activities which will follow this report, beginning in the Fall 2015 semester.

- Student-Faculty Ratios are historically high and lead to higher than average per student costs. Increases beyond 20 SFR will require faculty review and redesign to reduce the number of lab courses in the curriculum. The faculty will be discussing this starting in Fall of 2015.
- Engagement of current students in assessment. The faculty will discuss whether or not involving the students in the creation or revision of program outcomes is a good idea, and if so how to accomplish this purpose, starting in Fall 2015.
- Closing the loop on the current assessment cycle: Data from course level assessment and from student and alumni surveys will be provided to the program advisory board and the faculty in Fall of 2015 for review and recommendations for next steps. This will be reported on in the 2016 Annual Assessment Report.
- Because the data from AY 2014-2015 have only just been collected, and in fact are being collected this summer, there are no improvement activities yet planned based on those data. (See the assessment calendar, above).

11. Assessment Data

Assessment in our programs takes place at several levels. First, PLOs are monitored for relevance to the SJSU University Learning Goals. Second, learning of student outcomes takes place at key courses in both the core curriculum and the more specialized curricula for each concentration. Third, Surveys are collected every 2 to 3 years for feedback from current students and from program alumni. Finally, data from the course assessment and the surveys is provided to the faculty and the program advisory board for review and recommendations. Examples of course level data collection are provided in Appendix 1. Summaries of the most recent surveys of students and alumni are presented in Appendix 2 and 3. Prior surveys of students and alumni were conducted in 2010 and 2012.

After a hiatus of several years, the faculty have begun to gather course level assessment data this spring, starting with retroactive collection of data on two key courses delivered in Fall 2014. In addition to the Fall 2014 collection, we will gather data on three additional courses delivered this spring. The remainder of the courses in our key courses list will be assessed in Fall semester 2015, and evaluation of the assessment data gathered up to summer 2015 will begin at that time. By spring of 2016 we will have gathered and reviewed assessment data on all key courses in the assessment schedule.
12. Analysis

At this time we are collecting data from Fall 2014 and Spring 2015. Review and evaluation will begin in Fall of 2014.

13. Proposed changes and goals (if any)

As the current data sets are only now being collected and are not yet complete, there are no recommendations at this time. Recommendations are expected to arise from the faculty and advisory board review in Fall of 2015.
Appendices List

Department: Aviation and Technology
Program: Industrial Technology
College: Engineering

1. Examples of course level data collection (one from each program)
   a. Tech 145, Lean Manufacturing
   b. Avia 190, Senior Seminar

2. Recent survey summaries
   a. Students
   b. Alumni

3. Required Data Elements (RDE) from IEA.
   a. Available on request. 27 pages.
This online survey was developed and conducted by the Aviation & Technology Department in consultation with SJSU Institutional Effectiveness and Analytics. In the September of 2014, surveys were sent to 385 individuals, including all program majors from both the BS Industrial Technology and the BS in Aviation. A total of 119 responses were received, for a 31% response rate. These responses are under review by the faculty. In our next review cycle we are considering separate surveys for the two BS degree programs.

Highlights/Selected Findings:

General
- 50% of respondents were Seniors,
  36% were Juniors (q1)
- 30% of respondents were in CENT (Computer Electronics and Network Technology),
  27% were in Aviation Operations,
  6.7% were in Professional Flight
  24% were in Manufacturing Systems
  8.4 % were in Aviation Management (q2).

Recruitment
- 32% indicated they learned about this program at SJSU,
  24% indicated at High School,
  20% indicated Other sources, and
  19% at a Junior College (q5).
- 28% said the specific concentration or program attracted them to the program (q6)
  20% said they were attracted to this program by the Department website
  18% by a friend’s recommendation,
  12% by campus (not department) advisors
  <3% by ESSC recommendation
  18% by “other” (Q.6)

Areas of Importance and Improvement
- 62% said hands-on curriculum and classes are the most important attribute of this program,
  50% said curriculum related to real-world practices, and
  47% said strong job prospects on graduation (q8).
  39% said the strong and concerned faculty,
  39% said effective advising
- 36% said strong job prospects on graduation is an area most in need of improvement,
  31% said curriculum related to real-world practices, and
28% said hands on curriculum and classes (q9)
only 8.7% said strong and concerned faculty was an area most in need of improvement.

Post Baccalaureate Studies

- 44% said they are virtually certain or likely to enroll in a Master’s degree program (q10).

Degree names:
- 57% ranked MS in Engineering Technology and Management as most or second most important
- 42.5% ranked MS in Applied Engineering Technology and Management
- 41% ranked MS in Engineering Technology
- 37% ranked Technical and Engineering Management

Degree options and content:
- 56% ranked Technical and Engineering management as most or second most important
- 52% ranked Sustainability Management
- 32% ranked Transportation Management
- 46% ranked Lean Systems Management
- 32% ranked Network and Mobile Devices
- 40% ranked Product Development and Entrepreneurship
  - 35% ranked Applied Technology as most important or second most important
  - 32% ranked Technology Management as most or second most important
  - 38% ranked Applied Engineering Technology as most or second most important (q12).

Written Comments are archived at department and available on request
The 2014 Industrial Technology Alumni Survey
Prepared by Institutional Effectiveness and Analytics – October 2014
Summary analysis by Seth P. Bates with input from program faculty.

This online survey was developed and conducted by the Aviation & Technology Department in consultation with Institutional Effectiveness and Analytics in the September of 2014. Surveys were sent to 542 individuals, and a total of 95 responses were received for an 18% response rate.

Statement of limitation for the study: in various questions, particularly in the later questions, the term “aviation” was used rather than “industrial technology” due to communications errors between the department and IEA. While it is clear that the vast majority of respondents accepted this as a typographical error, this did create some confusion for some respondents. Please note that “ECT” is an earlier name for the program concentration in “CENT”.

Highlights/Selected Findings:

General
- 38% of alumni responding had a concentration in Manufacturing Systems, 31% had a concentration in Electronics and Computer Technology, and 20% had a concentration in Computer Electronics and Network Technology (q3).

Employment
- 77% are employed in a field related to their undergraduate major (q6).
- 77% obtained their first full-time job 6 months or less after graduation (q8).
  - 45% obtained first job prior to graduation
- 37% obtained their first full-time job from “other sources”, 29% from a friend or relative, 16% from an employment agency, and 13% from a newspaper (q10).

First Major-Related Job
- 34% said their first major-related job was in industry, 33% in electronics and networking products, and 19% in other types (q14).
- 86% said their primary role in their first major-related job was as an engineer (q15)
- 67% said teamwork was a competency extensively used in their first major-related job, 64% said technical skills and knowledge, 63% said computer skills, 60% said written communication, and 55% said oral communication (q16).

Current Job
- 70% are not in their first major-related job any longer (qa).
- 60% said their primary role in their current job was as an engineer, 27% said administrative or management (q25).
- 83% said oral communication was a competency extensively used in their current job, 80% said written communication, and 73% said teamwork (q26).
• 52% are regularly involved with quality control in their current job, 51% are regularly involved with training and development, and 49% are regularly involved with report writing (q30).

Degree Satisfaction
• 81% agree or strongly agree they are satisfied in their current position (q31.b).
• 26% agree or strongly agree, compared to their co-workers with BS degrees, their undergraduate preparation was superior (32.c). Only 7% disagree or strongly disagree with this.

Graduate and Continuing Studies
• 46% are interested in pursuing a master’s and/or doctoral degree (q36).
• 45% feel the BS Industrial Technology [Aviation [this was a typo in the survey and refers rather to the BSIT]] degree program was either outstanding or good in preparing them for advanced study (q38).

Other findings (raw data)
3. Distribution in the BSIT concentrations: 38% MfgSyst, 51% ECT or CENT
5. What is the relative importance of a minor in business in your job performance and advancement? 85% state much or some value
7. Your present employment? 93% state full time employment
15. Your primary activity or role in first major-related job? 93% state engineering or mgmt
16.a Indicate the extent to which the following competencies are used in your first major-related job: Oral communication 99% state extensive or often
16.b Indicate the extent to which the following competencies are used in your first major-related job: Written communication 94% state extensive or often
16.c Indicate the extent to which the following competencies are used in your first major-related job: Computer skills 95% state extensive or often
16.d Indicate the extent to which the following competencies are used in your first major-related job: Hands-on skills 88% state extensive or often
16.e Indicate the extent to which the following competencies are used in your first major-related job: Technical skills or knowledge 91% state extensive or often
16.f Indicate the extent to which the following competencies are used in your first major-related job: Physical sciences (physics, chemistry, etc.) 43% state extensive or often
16.g Indicate the extent to which the following competencies are used in your first major-related job: Mathematical skills 61% state extensive or often
16.h Indicate the extent to which the following competencies are used in your first major-related job: Management or Supervision skills 72% state extensive or often
16.i Indicate the extent to which the following competencies are used in your first major-related job: Teamwork skills 95% state extensive or often
17. What is the approximate number of employees in your first major-related employment? 38 % state 50 to 500, 42% state over 1000
19. Which occupational category most closely describes your first major-related job? 40% state engineering and design
34% state production or manufacturing
20_3 Which of the following are job responsibilities you are involved with on a regular basis in your first major-related job? – 43% Training or development
20_4 Which of the following are job responsibilities you are involved with on a regular basis in your first major-related job? – 43% Research and development
20. Which of the following are job responsibilities you are involved with on a regular basis in your first major-related job? -

21. 43% Report Writing

Current Job

##. 70% are no longer in the same position as they started in.

24. Type of industry of employer in your current job?
24% in “industry”, 19% in electronics or networking, 12% in service

25. Your primary activity or role in your current job?
87% Engineering or Mgt.

26.a Indicate the extent to which the following competencies are used in your current job: Oral communication
98% state extensive or often

26.b Indicate the extent to which the following competencies are used in your current job: Written communication
98% state extensive or often

26.c Indicate the extent to which the following competencies are used in your current job: Computer skills
97% state extensive or often

26.d Indicate the extent to which the following competencies are used in your current job: Hands-on skills
79% state extensive or often

26.e Indicate the extent to which the following competencies are used in your current job: Technical skills or knowledge
89% state extensive or often

26.f Indicate the extent to which the following competencies are used in your current job: Physical sciences (physics, chemistry, etc.)
40% state extensive or often

26.g Indicate the extent to which the following competencies are used in your current job: Mathematical skills
60% state extensive or often

26.h Indicate the extent to which the following competencies are used in your current job: Management or Supervision skills
79% state extensive or often

26.i Indicate the extent to which the following competencies are used in your current job: Teamwork skills
97% state extensive or often

27. What is the approximate number of employees in your current employment?
48% smaller companies (under 500), 43% over 1000

28. Which occupational category most closely describes your current job?
37% Engr, Design,
20% Production/Mfg, 11% quality control

30. Which of the following are job responsibilities you are involved with on a regular basis in your current job?

31.a 75% I have been satisfied with: My first job or position related to my major
6% disagree or strongly disagree with this.

31.b 81% I have been satisfied with: My current job or position
7% disagree or strongly disagree with this.
31.c  60% I have been satisfied with: My academic preparation for my current job or position
      9% disagree or strongly disagree with this.
31.d  51% have been satisfied with: The overall academic preparation the BS [Ind. Tech] Program provided
      19% disagree or strongly disagree with this.
32.a  61% felt the curriculum I followed in college prepared me for initial employment
      17% disagree or strongly disagree with this.
32.b  68% My technical option helped prepare me for my initial employment role
      10% disagree or strongly disagree with this.
32.c  Compared to my co-workers with BS degrees, I feel my undergraduate preparation is superior
      26% agree or strongly agree, 27% disagree or strongly disagree
32.d  Comparing the SJSU Industrial Technology faculty to other university faculty, I would describe their
      teaching effectiveness as superior
      42% agree or strongly agree, 18% disagree or strongly disagree
32.e  The quality of the SJSU Industrial Technology faculty interaction with students was positive and
      constructive
      68% agree or strongly agree, 11% disagree or strongly disagree

Graduate and Continuing Studies
33. Rank these names for our undergraduate Technology degree program:
      44% B.S. Applied Engineering and Management, 80% first or second choice
      37% B.S. Engineering Technology Management, 71% first or second
      13% B.S. Applied Technology and Management, 32% first or second
      8.5% B.S. Applied Technology, 15% first or second
34. Rank these names for our graduate Technology degree program:
      45% M.S. Applied Engineering and Management, 77% 1 or 2
      38% M.S. Engineering Technology Management, 79% 1 or 2
      6% M.S. Technology Management, 11% 1 or 2
      13% M.S. Applied Technology and Management, 25% 1 or 2
      8% M.S. Applied Technology, 14% 1 or 2

35. Indicate the amount of education you have completed beyond the BS in [Industrial Technology] Aviation:
      52% None, 15% 1-15 units/hours, 11% 16-30 units/hours,
      2% Additional Bachelor’s degree, 13% Masters degree, 1 % Doctoral degree
36. Are you interested in pursuing a master’s and/or doctoral degree?  46% yes
37. Preferred field of study:  29% Business, 24 % Engineering, 34% Applied Engr/Mgt.
38. How well did the BS Aviation degree program prepare you for advanced study?
      45% outstanding or good, 5% poor

Written Comments are archived at department and available on request