

Recommended schedule

Day 1

Theory session topic: *Résumé and cover letter writing, job searching* – **attendance is mandatory!**

Independent activity: *Work on résumé and cover letter*

Independent activity: *Work on homework questions – 1 through 10*

This is the major assignment for this course: creating a résumé and cover letter both targeted to a specific instrumentation job (as *all* résumés and cover letters should be targeted). The tutorial *So You Want To Be An Instrument Technician?* available from the *Socratic Instrumentation* website delineates standards your résumé must meet. Your major task is to write a résumé and a cover letter for yourself and submit them to your instructor *error-free* by Day 5. Questions 1 through 10 in this worksheet are homework questions for you to complete, also due by Day 5 of this course (unless you have completed a jobshadow or internship during this course or during the break immediately prior).

Since both your résumé and cover letter must be targeted to a specific instrumentation job, you will also need a job description to reference. For those recently completing a jobshadow or internship, you are welcome to use that employer as the reference (i.e. writing your résumé and cover letter as though that employer were ready to hire an instrument technician, based on your experience jobshadowing or interning there). Otherwise, you will need to locate an actual job description from an employer (e.g. copied from the results of a job search engine, from an employer's website "career" page, etc.) and include that job description along with your submission of résumé and cover letter.

Day 2

Independent activity: *Work on résumé and cover letter*

Independent activity: *Work on homework questions – 1 through 10*

Day 3

Independent activity: *Work on résumé and cover letter*

Independent activity: *Work on homework questions – 1 through 10*

Recommend submitting rough draft of résumé to instructor by email (Adobe PDF format only!)

Recommend submitting rough draft of cover letter to instructor by email (Adobe PDF format only!)

Please submit the job description along with the resume and cover letter (any format)

Day 4

Independent activity: *Final editing of résumé and cover letter*

Independent activity: *Finish all homework questions – 1 through 10*

Day 5

Activity: *Submit all required work to the instructor*

Instrumentation-specific résumé due at the end of the day (no spelling or grammar errors)
(Adobe PDF format only!)

Instrumentation-specific cover letter due at the end of the day (no spelling or grammar errors)
(Adobe PDF format only!)

Instrumentation job description from an actual employer due at the end of the day (any format)

Homework due at the end of the day (*questions 1 through 10*)

Note: Successfully completing a “jobshadow” experience either during the week this course is scheduled or during the school break immediately preceding this course counts as equivalent credit for all assignments (including attendance at the classroom session) *except* the résumé and cover letter. Your instructor will need proof of your jobshadow completion, so be sure to leave a contact phone number and/or email for the jobshadow employer that your instructor may use for this purpose. If you target your résumé and cover letter to your jobshadow employer, there is no need to submit a job description.

IMPORTANT NOTES!

This course is largely self-directed. It is *imperative* you attend the classroom session and also complete all the prescribed activities by the end of the school day on Day 5. Anyone absent from the classroom session (unless due to a jobshadow or an emergency situation) will be dropped from the course as a no-show. Barring some personal (documented) emergency preventing your timely submission of assignments, any late work will result in a failing grade for the course! The work you must submit by Day 5 is listed in **bold** print above.

While completing a jobshadow or internship during this course or during the prior school break does count as equivalent credit for questions 1 through 10, it does *not* substitute for the résumé or cover letter. Neither does a completed jobshadow or internship substitute for registration and payment for the course, as no grade may be submitted for you unless and until you are registered.

The résumé and cover letter you submit on Day 5 are final edits, not drafts. Spelling errors, grammatical problems, unprofessional formatting, or any of the other mistakes described in the *So You Want To Be An Instrument Technician?* career guide are unacceptable. *Your final résumé and cover letter must be good enough to meet the standards of an actual employer.* This is why you are encouraged to submit rough drafts on Day 3. If you have doubts about the content or formatting of either your résumé or your cover letter, the time to consult with your instructor and receive input is *well before* Day 5!

Program Outcomes for Instrumentation and Control Technology (BTC)

#1 Communication

Communicate and express concepts and ideas across a variety of media (verbal, written, graphical) using industry-standard terms.

#2 Time management

Arrives on time and prepared to work; Budgets time and meets deadlines when performing tasks and projects.

#3 Safety

Complies with national, state, local, and college safety regulations when designing and performing work on systems.

#4 Analysis and Diagnosis

Analyze, evaluate, and diagnose systems related to instrumentation and control including electrical and electronic circuits, fluid power and signaling systems, computer networks, and mechanisms; Select and apply correct mathematical techniques to these analytical and diagnostic problems; Select and correctly use appropriate test equipment to collect data.

#5 Design and Commissioning

Select, design, construct, configure, and install components necessary for the proper function of systems related to instrumentation and control, applying industry standards and verifying correct system operation when complete.

#6 System optimization

Improve technical system functions by collecting data and evaluating performance; Implement strategies to optimize the function of these systems.

#7 Calibration

Assess instrument accuracy and correct inaccuracies using appropriate calibration procedures and test equipment; Select and apply correct mathematical techniques to these calibration tasks.

#8 Documentation

Interpret and create technical documents (e.g. electronic schematics, loop diagrams, functional diagrams, P&IDs, graphs, narratives) according to industry standards.

#9 Independent learning

Select and research information sources to learn new principles, technologies, and techniques.

#10 Job searching

Develop a professional resume and research job openings in the field of industrial instrumentation.

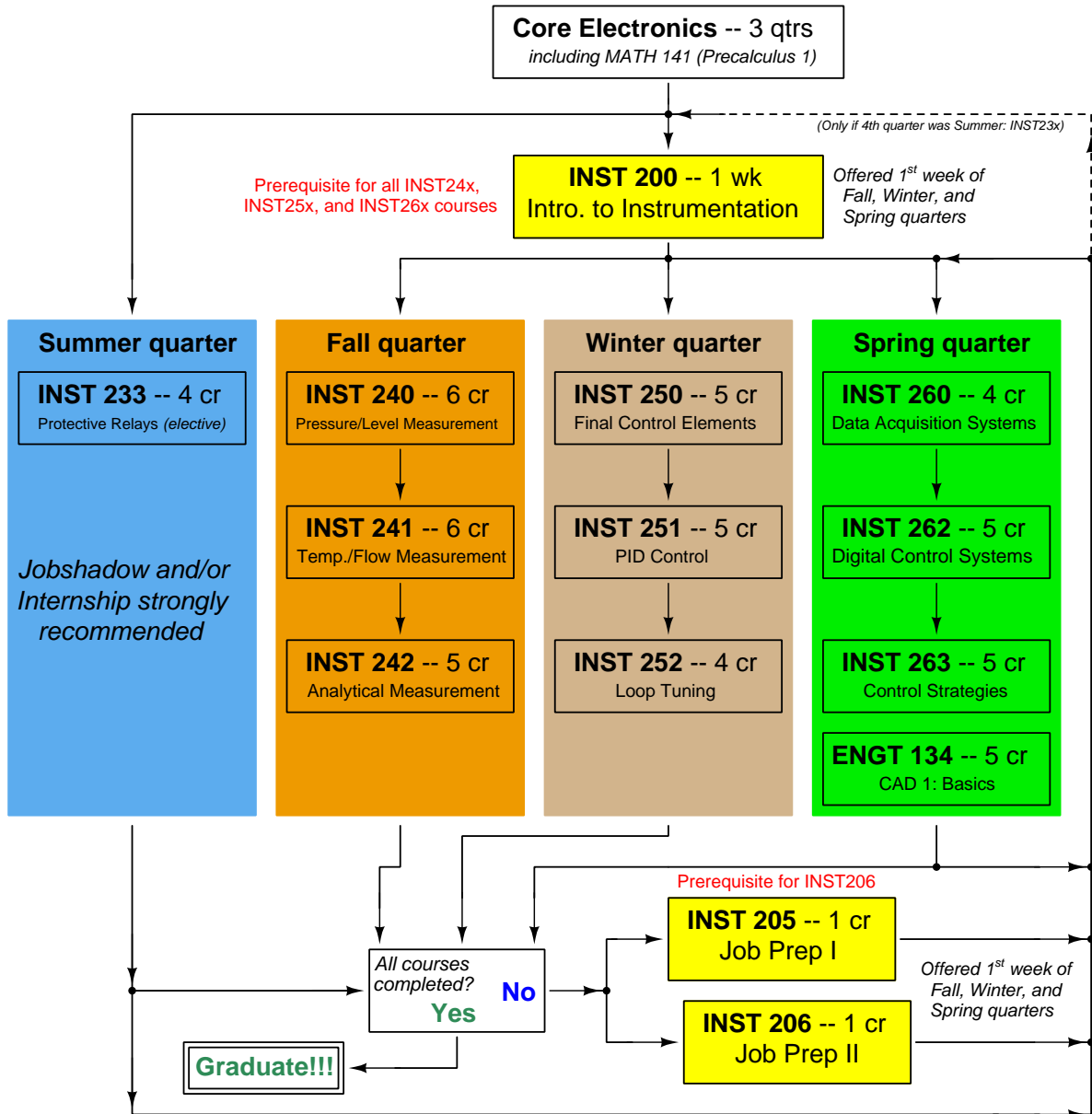
file outcomes_program

INST 205 Course Outcomes

Each and every outcome in this course is assessed at a mastery level (i.e. 100% competence)

- Write a personal a resume with no spelling or grammatical errors. [Ref: Program Learning Outcomes #1 and #10]
- Write a personal cover letter with no spelling or grammatical errors. [Ref: Program Learning Outcomes #1 and #10]
- Research and document at least three open job descriptions for instrument technicians, from at least two different sources. Note: successfully completing a “jobshadow” or “internship” experience either during the week this course is scheduled or during the break immediately preceding this quarter counts as equivalent credit for the job search assignment. [Ref: Program Learning Outcome #10]

Sequence of second-year Instrumentation courses



The particular sequence of courses you take during the second year depends on when you complete all first-year courses and enter the second year. Since students enter the second year of Instrumentation at four different times (beginnings of Summer, Fall, Winter, and Spring quarters), the particular course sequence for any student will likely be different from the course sequence of classmates.

Some second-year courses are only offered in particular quarters with those quarters not having to be in sequence, while others are offered three out of the four quarters and must be taken in sequence. The following layout shows four typical course sequences for second-year Instrumentation students, depending on when they first enter the second year of the program:

Possible course schedules depending on date of entry into 2nd year



file sequence

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Questions

Question 1

Research some of the online job search engines and list some of them here. Also, print a screenshot showing one of these job search engine's search results for at least one instrumentation-related job.

Since you will need a real instrumentation job to target your résumé and cover letter, locating some real instrumentation job descriptions as soon as possible will be a great help!

[file i00722](#)

Question 2

Identify what a *TWIC* card is, and which industries require one for employment. Also, identify how to obtain a TWIC card for yourself (including cost). The best place on the Internet to begin researching this is <http://www.tsa.gov/twic>.

[file i00720](#)

Question 3

Suppose an interviewer asks you a technical question that you have no idea how to answer. Perhaps the anxiety of the moment makes it too difficult for you to recall the answer, or perhaps you *never* knew the answer to this question. Either way, you are stumped. Identify a good way to respond to this scenario, and explain why it is preferable to some alternatives.

[file i00738](#)

Question 4

Any time you apply for a job, you should have a list of references ready to submit to employers upon request. What purpose do references serve, and who should be included on your reference list? Who should *not* be included on your reference list?

[file i00739](#)

Question 5

A challenging question sometimes encountered in interviews goes along the lines of this:

“Tell me about an incident on the job where you made a mistake, and also describe what you did to correct it.”

A common mistake many inexperienced interviewees make is to not refer to an actual experience that took place in their lives when answering a question like this. Instead, interviewees often answer such questions in the hypothetical, telling the interviewer what they *might* do *if* something like this *were to happen* to them.

Explain why it is important to answer questions like these with *real life experiences* and not hypothetically. Specifically, how you would answer this question about making mistakes, and what positive attribute(s) would be revealed about yourself in your answer?

[file i00745](#)

Question 6

A common “soft-skill” sort of question that interviewers ask is for the interviewee to describe one of their weaknesses. Explain a general strategy for answering this sort of question.

[file i00742](#)

Question 7

The following list of questions are often asked of interviewees applying for computer programming positions at the Microsoft Corporation:

- How are M&Ms made?
- If you had a clock with lots of moving mechanical parts, you took it apart piece by piece without keeping track of the method of how it was disassembled, then you put it back together and discovered that 3 important parts were not included; how would you go about reassembling the clock?
- If you had to learn a new computer language, how would you go about doing it? *Translating this question into “instrumentation” terms, if you had to learn how a new type of instrument worked, how would you go about doing it?*
- You have been assigned to design Bill Gates’ bathroom. Naturally, cost is not a consideration. You may not speak to Bill.
- If Microsoft told you we were willing to invest \$5 million in a start up of your choice, what business would you start? Why?
- How would you explain how to use Microsoft Excel to your grandma? *Translating this question into “instrumentation” terms, how would you explain your chosen career (Instrument Technician) to a small child in such a way that they know what kinds of activities you do at work on a typical day?*
- Suppose you go home, enter your house/apartment, hit the light switch, and nothing happens – no light floods the room. What exactly, in order, are the steps you would take in determining what the problem was?
- Why is it that when you turn on the hot water in any hotel, for example, the hot water comes pouring out almost instantaneously?
- Explain a scenario for testing a salt shaker.
- Interviewer hands you a black pen and says nothing but “This pen is red.”

Choose any one of these questions, and try answering it as best you can. Also, identify the most difficult question on this list and explain why it is difficult for you to answer.

[file i00747](#)

Question 8

List at least three different sources of information for employer research *other than job search engines* (e.g. *Monster.com*) and *classified ads* (e.g. *Craigslist*).

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[file i01855](#)

Question 9

A common yet unfortunate trend seen in many résumés are lists of self-described attributes. Examples of such include:

- “Hard-working and motivated”
- “Easy to get along with”
- “Creative problem-solver”
- “Dedicated”
- “Clean-cut and professional”
- “Critical thinker”
- “Conscientious”
- “Always punctual”

Explain why self-endorsements such as these have little or no value in a résumé, from the perspective of the employer reading them.

Next, give a specific example of how one could present any of the listed positive attributes in a résumé, but in such a way that is factual (not subjective) and does a better job capturing the employer’s attention.

file i00723

Question 10

A general rule-of-thumb for graduates of an Instrumentation program is to remain at your first job for at least a year or two before considering other employment, even if better-paying prospects come to your attention. The most important rationale for this attitude is to guarantee a “return on the investment” your first employer makes in you.

Identify some of the significant “investments” that an employer makes in an unexperienced instrument technician.

file i00721

Answers

Answer 1

Answer 2

Answer 3

Answer 4

Answer 5

Answer 6

Answer 7

Discuss these with your classmates, with an eye toward practical answers as well as figuring out what the interviewer is trying to determine with each question.

Answer 8

Answer 9

Answer 10

Here are a couple to get you started:

- Cost of pay and benefits during non-productive initiation time
- Cost of mistakes made due to inexperience