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| Detailed Instruction BME 4951 Spring 2016**Form 2 of 3**  |
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| **Professor** | **Dr. M. Walker III** | **Assessment** |

**ORAL Exams**

**Grading description**:

Student Teams will present an oral PowerPoint report on their work to Dr. Walker as per Excel Sheet schedule (advisors may be invited by Dr. Walker to some of the Oral Exams).  Presentations should be in one of the two formats described below.    The presentation is expected to be a communication as well as a problem solving session - this is your main interaction point with the course instructor!   Presentations are to last no more than about 12 minutes total.  Each report, going forward is to be **complete,** and treated it as your final oral presentation.   Oral reports are, in the aggregate, worth 24 points of total grade.

 It is expected that oral reporting is to be shared by all members of a team.  To a limited extent, oral reports may be rescheduled to accommodate interviews or attendance in other classes required for graduation.

**Minimum suggested format:**

* Question/thesis to be answered
* Background and importance
* Methods
* Status/Results
* Conclusions

**Strongly Recommended Format, the majority of 1-13 below:**

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| Phase of talk | Section | more detail | example(s) |
| **Analysis** | 1.  Problem statement | is it a question? | Can you quantify Parkinson's tremor? |
| a complaint? | There are too many ED complaints. |
| a requirement? | We need more sensitive screening of... |
| 2.  Performance criteria | what constraints? | within +/- 0.001 % |
| what limitations? | within 4 months |
| what exclusions | except humans over 40 |
| 3.  Primary Objective | what are you trying to do? | Rework the cancer clinic process flow. |
| **Design components** | 4.  Solution description | list or diagram | mechanism |
| list or diagram | procedure |
| 5.  Goals | the system/process can/will: | improve profit by 50% |
| 6.  Factors | parameters varied to yield benefit | what affects cost, quality, benefits, etc  List them. |
| 7.  Performance Metrics | outcome measurement formulas | cost/benefit, averages, t-tests |
| **Synthesis** | 8.  System and Environment | diagram this | system diagram |
| 9.  Experiment Block Diagram | if needed, experimental design |   |
| **Validation** | 10. Performance | tables or charts of results | diagnostic accuracy versus altitude |
| 11. Conclusions | sentence or so | Our device outperformed by 50% the competition! |
| 12. Informal Observations | sentence or so  | Patients seem happier with their surgical experience. |
| 13. Recommendations | bullet list | Study the effect of new anesthetics on this device. |

***Suggestions for good Oral Exams:*** *a. Your oral presentation is a rehearsal of the final poster presentation.  This means that all of your information should in some way be represented in your slides.  An observer should be able to read all of your slides (without you talking) and get a good understanding of your project.  Don't worry about repeating what is written on your slides during the oral presentation...like I said, it’s really a rehearsal for the poster show.
b. In your presentation it is critical that you clearly define the problem you are addressing and how you plan to do so.  This sounds obvious, but it is easy to talk around the problem without really stating it.
c. Numbers are important!  Please include calculations, quantities, cost, etc when giving your presentation.  It helps us understand the scope of your problem and why it’s important for you to do this project.
d. Use pictures and diagrams!  They can help you explain a lot without filling up a slide with distracting words.  Use them whenever you can.
e. Remember that each oral presentation should be a complete package.  Just because you are just beginning doesn't mean that your slides can be in "note" form.  Pretend you are presenting a final version.  Each time you present, you must act as if we have never heard of your project before.
f. Lastly, I know it is difficult this time of year to focus on your projects.  It is extremely important, though, that you continuously work on them.  The semester is passing quickly!  Your project should already be about 1/5 finished.  Don't let yourself get behind!"*

2.  The weekly progress reports (done/planned/needs) begun last semester in BME 4950 will be continued, with reports due by the scheduled time (see **Excel Sheet Schedule of Observation/Written PR).**

* Full credit will be given for reasonable communication of progress.
* **Zero credit will be given for progress reports that are duplicates of prior weeks'** reports.  Half credit will be given if reports are turned in 24 hours later, no credit for reports later than this.
* **Spring vacation week** and the weeks of your oral reports, are exempt from the progress reporting requirement, but your PowerPoint slides must be added to the web by Friday of the week you gave the presentation.
* The purpose of the weekly reports is communication with the Professor about your progress; if you do not communicate needs, the Professor cannot meet them.   You will normally receive an email indicating that your report has been read, with any advice or questions included.

3.  Your web pages will be checked to make sure that the web pages are complete and up to date.  It is anticipated that this will be done in February,  March and April, after the final design day presentations (final form.)  ***The Web Page exercise is to develop your independent lifelong learning goals with key skill sets needed in most of your chosen professional settings. The site will serve you well as part of your Resume/CV going forward.*** Your web pages will need to contain  the material listed below:

* Initial review:  web site must include:  all progress reports and oral reports to date, MS Project Plan up to date, and detailed, Grant project proposal updates, electronic references, description of FDA category of your design, email link to team.
* Second review: web site must include the above, but with a completed CREO Model of your design, or a Process Chart, Designsafe, and a minimum of 5 electronic references.
* Final review: web site must include the above and final poster.

I will maintain this site as long as I can.  Again, you may wish to use this site as part of your portfolio, several students have used this also as a means of communication with their relatives regarding their work here...  Sites may be password protected if IP is a consideration, but long term protection (beyond 2 years) is NOT guaranteed.

Do not post materials offensive to others on your web site.  The web site is a reflection of your group's efforts.

4 & 5  Your final poster presentation will be graded by two judges who will use the a scoring sheet that will be posted to OAK.   Poster board size, etc., 3' x 4'.  A poster printer is available in the department, please send material to John Dunbar ( john.j.dunbar@Vanderbilt.Edu)   for printing once approved by Dr. Walker.

Final poster presentation notice:  Will be held in conjunction with EECE, CE, ChBE, and ME on Design Day (Mon. April 25, 2016) in Featheringill atrium, 3:00 - 5:00 PM..    One student group will likely win (as is our custom) the Tom Arnold Design Prize ($100+).  (The judges for this award are typically the Chair and the design instructor.    Specific details regarding placement of posters will be determined by the instructor in charge that year.

Please refer to the photographed examples from last year outside my door.

 6.  Advisor Grade  Your advisor will be asked to give the instructor (Dr. Walker)  his/her estimate of your effort, based upon your work as reported through the term and on your final presentation. The grade reported to Dr. Walker needs to be a numerical grade.

7.  Instructor grade.  Your instructor will also read all web site materials and evaluate your performance, and will be responsible for reporting a final grade to the registrar.

**Project Changes**   If for any reason a project is dropped, it is the responsibility of the student to inform all involved, and write up an analysis of the project and why it failed.  These reports need to be comprehensive, with a length dependent on the amount of time devoted to the project prior to its abandonment.