Response Letter Format

To: ME 365 Staff  
From: Dianne Atkinson  
Re: Response Letter Format

To help students draft and format a response letter for their oscilloscope recommendations, I’ve provided a brief discussion of correspondence and a sample response letter illustrating standard format. Students do have some familiarity with formal letters from their written assignments in the ME 290, the Mechanical Engineering Seminar, but may appreciate a review of the essential features.

General Issues in Written Correspondence
Written correspondence is expensive. Generating the physical artifact of a letter costs time and money. Furthermore, a letter is static and non-interactive, compared to such alternatives as a telephone conversation. The positive side of “hard copy” is that written correspondence often has a dual purpose, serving not only to convey information but also to conserve it as a written record. Putting a recommendation in writing can not only impact future action but can also preserve the rationale or justification for future reference. The durability of “hard copy” correspondence can be important and can contribute to a preference for letters over more casual modes of communication such as telephone conversations.

Specific Features of Letters
Formal letters usually have three parts: an opening which connects with the reader and provides context, a middle where the “news” is developed, and a close where an investment in future interaction is made. Even very short letters of just a few sentences will still typically contain these three parts, including context in the first sentence and courtesy in the last sentence.

In the case of a response letter, the opening should identify the specific question motivating the response or recommendation provided in the letter. The middle part of the letter then details the response, using headings or lists, or other format devices to emphasize important points and to keep details from detracting from the main points. The close is an appropriate place to invite questions, always a considerate action.

Specifically about Recommendations Letters
In addition to the general structure of any correspondence (context, core, and close) a recommendations letter should be organized with the most important information presented first. The first section states the recommendation or “answer”. The second part then provides an explanation or rationale, showing how facts or conditions resulted in the particular outcome or “answer”. This “top down” sequence is often used in formal reports and the pattern is familiar to readers.

Although a recommendation is generally a creative response and not just the one correct “deductive” answer, report-style sequence is usually the best choice. Report style organization gets the “news” to an audience who is most interested in the “bottom line” and who may not necessarily be interested in every
detail of the process. The evidence or justification is still important for establishing credibility, but it is typically not presented in great detail in the concise format of a letter.

I have provided a sample letter below. Please let me know if I may help with further questions.

Thank you.

**Sample Response Letter**

*Note about page layout:* Formal letters usually have equal margins on all sides. The text is centered vertically and horizontally. Letter margins are wider than “text-style” margins in order to shorten line length and enhance the readability of single-spaced text. A margin of 1.5 inches on each side would be appropriate.

Return Address

P.O. Box/Street address
City, State  Postal Code

Date
Month Day, Year

Inside Address
Professional title, Name of person addressed
Organizational title (e.g, V. P. for Research)
Name of Organization
Street Address
City, State

Salutation
Dear Professor Davies,

Context
As part of our laboratory work in ME 365, we have been asked to recommend a specific oscilloscope for purchase. . . .

Core
The XXX brand, Model YYY would be our recommendation. This model offers:

- Feature a
- Feature b
- Feature c

Close
Thank for checking with us about this. . . . You could reach me at . . . .

Signature Block
Sincerely,
(two open lines for penned signature)
Typed name

Enclosures
Enclosures: Vendor X brochure, Vendor Y brochure

Communications Notes
A memo report typically begins with a statement of **context**, which states the *purpose* of the document. A statement or paragraph (**summary**) stating the major conclusions then follows the opening context statement. These “up front” conclusions (“what”) are followed by a **discussion** of results or observations (“why”). In a formal memo, a **close** invites questions and indicates how to contact the writer.

**Checklist for “memo report” elements:**

1.0 In the first paragraph, **context** is spelled out.
   1.1___ Question or issue is clearly identified.
   1.2___ Importance of question or issue is affirmed.

2.0 In the second paragraph, a **summary** of the entire report is provided.
   2.1___ Conclusions are stated.
   2.2___ The significance or meaning of the results is addressed.

3.0 In the third and following paragraphs, **discussion** is developed.
   3.1___ Results are presented; data may be referenced as attachments.
   3.2___ Analyses are described; sample calculations may be attached and referenced.
   3.3___ Connections between analyses and conclusions are stated.
   3.4___ Remaining questions, if any, are identified.

4.0 In the last paragraph, further communication is invited and contact information is provided.

5.0 After the last paragraph, attachments are listed by title.
   Attachments might include data sheets, sample calculations, printouts, or other elements as needed.
   5.1___ Attachments

6.0 Overall: Elements of **standard memo format** are used.
   6.1___ Memo heading is included: **To/From/Subject/Date**.
   6.2___ **Headings** identify major content elements, except opening and closing.
   6.3___ **Attachments** are individually titled and listed after close.
   6.4___ Figures are captioned (below, “figure the bottom line”) to *identify* (Figure X), to *describe* content and to *indicate* purpose. Confirm that axes are labeled and legends included as needed.
   6.5___ Tables are designed for comparisons to be read vertically and titled (above, “top”) to describe content and to indicate purpose.
A Sample Memo Report

A sample memo report follows. The content identifies what should be included in a laboratory memo report. The numbers on the left refer to the list of key memo report elements provided on the reverse side of this page.

6.1 To: Supervisor (Name, may include job title)
From: Investigator (Name, ME 365 Student)
Re: Title of Laboratory Report
Date: Date Submitted

1.0 The opening of a formal memo identifies the context of the communication. What questions are to be answered and why are they important? No heading is used in the opening segment.

2.0 Summary: Results, Conclusions, and Recommendations (refer to actual content)
The first major segment sums up the report by indicating what was found, what was concluded, and why. The evidence is also summarized. Observations made and analyses completed are indicated. The connections between analyses and conclusions are stated. This section should have a suitable heading.

3.0 Discussion: Reasons and/or Evidence (refer to actual content)
Each major element is discussed in turn. General statements convey the methodology (procedures, observations, and analyses) employed to reach the conclusions. Specific elements (data, code, etc.) are attached and referenced. Ideally, each discussion segment is identified with an "advance organizer" in the form of a descriptive heading.

3.1 Results area discussed with any relevant attachment referenced (for example, see Attachment X).

3.2 Analyses are described with any relevant attachments such as sample calculations referenced (see Attachment Y).

4.0 The closing is set off by an extra open line, but no heading is used. No new development is introduced in the close. Thanks may be included as well as an invitation for further communication.

5.0 Attachments: (each attachment should be a separate page with title)

6.3 Title of Attachment 1: Table 1 (sample)
Title of Attachment 2: Figure 1 (sample)

Always consider separate pages for graphics.

Table 1. Sample table with “title” placed correctly above the table.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tbody>
</table>

Figure 1. This sample figure caption is placed correctly below the figure.
An important element in document design is that of providing users with a summary of contents. Two commonly used devices are abstracts and executive summaries.

What is the difference between an abstract and an executive summary?

An abstract and an executive summary differ in purpose. Abstracts are used to index documents and to decide whether to access the full document. Executive summaries are used for executive decisions and reflect the assumption that executives do not want the distraction of the specifics that are needed by other document users. Format and content for abstracts and executive summaries reflect these different purposes (see Table 1).

Table 1. Differences between abstracts and executive summaries.

<table>
<thead>
<tr>
<th></th>
<th>Purpose</th>
<th>Format: Size</th>
<th>Format: Text</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>To facilitate decisions about accessing full version</td>
<td>Usually between 100 and 200 words; can be as short as three or four sentences</td>
<td>Usually one paragraph; longer texts can be divided into two, at most, three paragraphs</td>
<td>Identifies topic and approach; may include findings, conclusions, or recommendations</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>To substitute for the full version</td>
<td>One page or 10% of full version</td>
<td>Replicates format of full version</td>
<td>Comprehensive sum of each major element in the full version</td>
</tr>
</tbody>
</table>

What are the similarities between an abstract and an executive summary?

Abstracts and executive summaries share some features.

Similarities:
- Both can be understood without reference to the full version
- No reference to figures or appendices is included
- Both use the same vocabulary as the full version and care is taken to include key terms
- Both help users of the full version to organize material as they read and to recall contents later
Further notes about abstracts: Abstracts intended for indexing are typically brief and may be limited to an identification of topic and approach (“descriptive abstracts”). Abstracts intended for more general use are typically longer and often include results, conclusions, and recommendations (“informative abstracts”). Abstracts are often formatted in a distinctive font, usually smaller and italic.

Further notes about executive summaries: Executive summaries are formatted as miniature versions of the full document: font choices, headings and divisions are replicated with contents reduced to main points.

Here is an abstract constructed from the proceeding discussion:

Abstract

Two summaries used in document design are described: abstracts and executive summaries. Abstracts are subdivided into two categories, “descriptive” and “informative”, with the first type used for indexing purposes and the second type used directly by readers to decide about accessing the complete document. In contrast, executive summaries are used directly by those who do not need access to the detailed material included in the complete document. As with any summary, abstracts and executive summaries should help the reader process text by using consistent key terms and avoiding external reference.

Note that abstracts are formatted as “block text”, with single spacing and wide margins to signal readers about the special purpose of the text. Sometimes italics or small font are also used in addition to “block text” to make abstracts distinctive.

Here is an executive summary constructed from the proceeding discussion:

Executive Summary

An important element in document design is that of providing users with a summary of contents. Two commonly used devices are described: abstracts and executive summaries.

What is the difference between an abstract and an executive summary:

Abstracts differ in purpose, format, and content from executive summaries. Abstracts are used to facilitate decisions about accessing the full version and usually consist of one paragraph identifying the subject of the document and the approach taken in the document. Executive summaries are reduced versions (10% of original document size) with original format elements and main headings retained so that the full document is not needed for making a decision.
What are the similarities between an abstract and an executive summary?

Both abstracts and executive summaries should employ the same key terms while avoiding any reference to additional material (figures or reference).

As an example, this executive summary text was indented. In actual practice, an executive summary should be formatted the same as other textual elements in a report and extending to a full page as a minimum.

Using the Abstract and the Executive Summary in ME 365:

Strategies for Summarizing Laboratory Work

The Abstract

Capturing the essential features and outcomes of such work as a summary or “abstract” is particularly demanding. One of the writing objectives for ME 365 is to develop skill in writing useful abstracts. Students may be asked to write a formal abstract as a concise summary of a particular laboratory.

Here is an example of an abstract written for laboratory work on static calibration and dynamic response analyses. Although the abstract itself is brief, designing the content and format is not brief:

Substantive Example:

Abstract

This laboratory provides students with experience in conducting static calibration and dynamic response analyses; both are used in sensor selection. The sensors under consideration are a thermocouple (TC) and a resistance temperature detector (RTD); each can be modeled with a first order ordinary differential equation. For the static calibration, voltage versus temperature data sets are acquired and then linear regression techniques are applied to generate calibration equations. The dynamic behavior is investigated by using step responses to calculate the time constants of the sensors. Based on the static analysis the RTD demonstrated a finer resolution than the TC. The dynamic analysis, however, indicated that the thermocouple has a smaller time constant. Thus for temperatures that change very slowly, the RTD is preferred. When temperatures change quickly, however, a thermocouple must be used.
The Executive Summary

In deciding how to convey the results of laboratory work, it is important to consider how the reader will use the information. Work can be summarized concisely in an “abstract” (above) but a paragraph summary may not always suffice.

A more developed summary can be formatted as an “executive summary”. The “executive summary” format is typically one page. Tables and figures are not included or referenced.

The text is made easy to process by the same format devices used in full reports. Readers expect the headings, the sequence of topics, and the layout to follow report conventions. The “executive summary” is a miniaturized report that fits on a single page.

Even the best abstracts can be challenging reading. When more format is introduced, reading the same material is easier. The following “draft” of an executive summary is actually the example abstract (above) which has been formatted using formal report conventions.

Note that the executive summary is placed on a separate page.
Executive summary draft:

Laboratory 5 Executive Summary

Objectives

This laboratory provides students with experience in conducting static calibration and dynamic response analyses; both are used in sensor selection.

Procedures

The sensors under consideration are a thermocouple (TC) and a resistance temperature detector (RTD); each can be modeled with a first order ordinary differential equation.

Static Calibration

For the static calibration, voltage versus temperature data sets are acquired and then linear regression techniques are applied to generate calibration equations.

Dynamic Response Analyses

The dynamic behavior is investigated by using step responses to calculate the time constants of the sensors. Based on the static analysis the RTD demonstrated a finer resolution than the TC. The dynamic analysis, however, indicated that the thermocouple has a smaller time constant.

Conclusions and Recommendations

Thus for temperatures that change very slowly, the RTD is preferred. When temperatures change quickly, however, a thermocouple must be used.
MECHANICAL ENGINEERING COMMUNICATIONS

ME 365 SYSTEMS AND MEASUREMENTS

Project Proposal:  *Give the project a specific title*

**Investigators:**
*List students working on project. Include both names and email addresses*

The opening statement should describe the relevance of the project to measurement systems, a statement of context that should require only a couple of lines. The remainder of the document (one page maximum) should describe what is to be achieved (the objectives), how that is to be accomplished (the subtasks), and how the tasks are sequenced.

A flow-chart or other diagram also should be included to show how subtasks are to be sequenced and coordinated across four phases of work: 1) Pre-project Lab, 2) Project lab, 3) Post-project Lab, and 4) Presentation Lab. Additionally, the chart or diagram should indicate which investigator is responsible for each subtask. Finally, a list of resources needed to complete the work should be appended.

**Objectives:**
*State the objective(s) of the investigation.*

**Plan:**
*List the sequence of subtasks needed to achieve the objectives. Be specific. For example, one subtask might require writing Matlab code; a different subtask would be checking the MATLAB simulation.*

Tasks associated with reporting results should also be included in the subtask list. For example, one subtask could be drafting a two-page memo to the instructor reporting on the project and providing the results. Another subtask would be editing and producing a final version for submission. Subtasks should also cover the work involved in preparing for an oral project presentation.

**Subtask Identification: List each subtask**
*Include planning, drafting, checking, and presentation. Be specific, not generic. E.G., write “Develop flow chart for program to calculate Fourier coefficients” instead of “Plan program”.*

**Subtask Sequence:**
*Group tasks into time-sequential phases and also assign tasks to specific individuals.*

**Attachment:** Resources (title of attachment)
*(Go through task assignment and determine resources required (and availability) for each subtask. On an attachment, list the resources needed to complete the work. Resources might include specific individuals as well as software and/or hardware. Please indicate whether availability has been established.*)
MECHANICAL ENGINEERING COMMUNICATIONS

ME 365 SYSTEMS AND MEASUREMENTS

PRESENTATIONS

What are presentations?

1. *Presentations are oral communications with formality.*

Presentations are oral communications made formal by the expectations of audiences for preparation, structure, and an initial flow of information from speaker to listener. Audiences expect presenters to invest in advance and to provide leadership for the session.

Because presentations are spoken, the opportunity does exist for interaction; not everything has to be scripted. Often the opportunity to ask questions is one reason for arranging the presentation in the first place. Speakers should anticipate this possibility, preparing in advance to respond to audience questions and concerns. Planning presentations should include the issue of inviting and responding to questions.

2. *Presentations are costly.*

Presentations are more costly than most other modes of communication. Conversations, in person or at-a-distance, can be more informal and more interactive as well, and require less advance packaging and rehearsal. Written messages, whether formal or informal, can be completed in segments, revised whenever time is available, and sent on their way at the convenience of the sender—in these ways, text costs less.

In contrast, presentations constrain both speaker and hearer, even if technology is employed to preserve and relay the original performance, as in teleconferencing. Presentations are performances and as such, require an expenditure of time, not just to produce, but also to perform. Audiences too must invest their attention, relinquishing some control over how their minds are occupied over a span of time.

3. *Presentations are sometimes essential.*

Presentations are essential when information is needed that cannot be obtained in less costly ways. For example, a presentation is often used as a basis for reaching important funding decisions. Presentations provide information to audiences about commitment and capabilities that are not easily extracted from text. Presenting is more personal—more of a witnessing—than written communication.

The opportunity to talk over unresolved issues which may have first been expressed already in text is another reason presentations are valued.

Finally, presentations can be a way of developing with the audience, and with the speaker, a sense of synchronous, “here-and-now” community that is not available in the individualized, asynchronous process of reading text at remote locations.
Face-to-face meetings continue to be a valued way of relating to colleagues, even in an age where electronic options, conferences-at-a-distance, are more cost effective.

**Examples of valuable presentations:**

*Co-op students present their work.*

A co-op student may be asked to present a summary of what has been accomplished in a work session. The purpose of the presentation is to provide an opportunity to make decisions about what should happen next. The student may provide the scene-setting, data, but decisions about “what next” may evolve out a subsequent discussion. The audience also forms opinions about credibility and capability of the presenter.

*ME 365 students present special reports.*

An ME 365 student may be asked to give a talk about a selected transducer application. The purpose of the presentation is not just to practice presentation skills but also to share with the audience an understanding of real-world devices exemplifying technical material in ME 365. Because topics often reflect student co-op experience or out-of-school projects, there is an opportunity to share in the genuine interest of someone in a technical application that also has relevance to ME 365 course materials.

*Faculty candidates present research.*

A prospective faculty member may present recent research not yet been published. The purpose is not just to get a preview of the research, but also to evaluate the person behind the work. Is this person collegial? Is this person committed? Would this person be someone we could work with in the future?

The purpose of presentations in all these cases is not just to convey technical information, which can always be achieved in less costly ways. The “hot” medium of presentations only makes sense when there are other objectives. Identifying all the objectives is important to succeeding in any particular situation.

**Planning the Presentation**

The first step in putting together materials for a presentation is to figure out your goal. What do you want to happen after the presentation has been completed? If you want your audience to understand something new, such as the application you have chosen to explain to your ME 365 lab section, you have to anticipate what your audience already knows and what may raise questions. You also have to estimate how much news can be packaged in the time available.

**Tailoring to Fit**

What fits in fifteen minutes, leaving five minutes for questions?

About three single-spaced pages of text can be presented, if the talk were transcribed word-for-word. This guideline is presented as an indication of quantity and not as a recommended way of preparing a talk.
If overhead transparencies or screen projections are used, from three to five will fit in fifteen minutes. More can be used if they fit together as composites. The first transparency can be used to introduce speakers and the topic.

If more than one speaker is involved, introduce everyone and describe what each person will do. The audience appreciates order – introduce people in the same order as they will speak. Questions should be invited. The audience usually needs a cue that the presentation is complete.

**Transparency and Screen Design**

Audiences love color.

Use some color somewhere – even if full color is not available. In fact, color can be all the more effective if used just as highlight, added in by hand. Outline the part of the schematic you will be discussing specifically. Have a sequence of the same schematic and shift the colored segment as the focus of the talk shifts. Have a composite that is generated by a sequence of overlays, each with a portion in color.

Visuals need editing.

Cut out every line you can live without. Extras only confuse. The content is complicated enough without including anything extraneous. Figure out what is essential for audience comprehension and what can be omitted in order to achieve simplicity and even elegance in design.

Remember a guideline for lists and other sequences you want your audience to entertain simultaneously:

**Limit short-term memory demands to three to five anything.** (Yes, phone numbers require the high-performance short-term memory retention of seven to ten digits – but everyone hates phone companies). The audience should not be asked to keep more than a “hand-full”, (three to five) of items simultaneously in mind. If more need to be considered, provide visual support with a picture or with list.

Text in visuals must be easy to read.

**Promise never to use a page of text from a print document as a substitute for a presentation visual.** The font size will be too small and the format too crowded.

Even for small class audiences (n = 20), font size should be at least 18 points. For larger audiences, use a floor of 24 points, and edit out everything not meeting these standards. Take special care with labels in technical drawings. Remember to edit transparencies and screen designs just as you would text. Do a first version and return later to revise.

**Producing and Performing**

The presentation package is more than just text.

The presentation package includes text and support materials. Producing such a package entails integrating the different components – support for the spoken word such as speaker’s notes, cue cards, or (rarely) full text manuscripts; visual aids such as overheads or screen projections; and any audience materials such as copies of the visuals, reference lists, or additional text materials.

Give the audience a gift.
Audiences like to be well cared for. Handing audiences something is a friendly gesture, although the transaction has some risk – it is easy to burden an audience with something irrelevant or poorly designed.

A strategic choice is to hand the audience one page with an overview, either textual or visual, which can serve as a platform for audience note taking. They are saved the struggle of figuring out the basics and transcribing the essentials and space is available for them to record their own processing.

The speaker should always include their name and how they may be contacted (e.g., email address, FAX, phone number) and the date on this document.

If some handout material is not original, authors should be credited by standard citations and copyright restrictions on distribution respected. Generally, the “fair use” guideline means that any non-for-profit one-time distribution for educational purposes is not copyright infringement.

You have an unstated contract with the audience.

Performance is a matter of entering into a contract with the audience. You affirm that you have something to say and that you are prepared to share that with the audience. In return, the audience gives you a hearing.

Performance is a real-time event which means risking natural and non-natural disasters – the power may fail. The PowerPoint file may be corrupted by unknown powers. Audiences can be surprisingly understanding about the unpredictable; what audiences never forgive is the predictably dismal effects of inadequate preparation.

Here are some pointers:

Knowing techniques that work is a good place to start.
1. Figure out how to harness your own interests. No audience will be interested if you are not. If you are interested, the task of projecting and packaging is simplified because you can more readily focus on details and anticipate difficulties – because you care about the outcome.

2. Use all available modalities. Use sight as well as sound. Provide information visually as well as verbally. Note that posture and voice send non-verbal messages.

3. Organize with an awareness of the differences between oral and written communication. Audiences cannot re-read or skip to the end of a presentation. Speakers need to provide some redundancy for the audience without wearing ruts in their gray matter. Providing a visual right away, and even setting it aside in a way that leaves it available to the audience for reference as the presentation unfolds, helps audiences get the big picture. Start with a drawing or schematic.

4. Prepare ahead of time to change negatives to positives. Performance anxiety can be substantially transformed into performance energy, given an investment in a two-punch strategy: rehearsal and relaxation.

Two invitations:

Trying new tactics with old advice can be rewarding.
If rehearsals never seem to help, try an order of magnitude shift in how much you rehearse. Once you experience the feeling of enough rehearsal, you can more confidently decide what is appropriate for a given situation.

Similarly, dramatic relaxation can be achieved with sufficient investment. A thirty or sixty minute brisk walk an hour or so before the presentation will have a perceptible impact. Many people do not benefit from a physical exercise approach because they never get past an effectiveness threshold. Walking up and down the hall five minutes before beginning to speak is not very effective. Try exercise if nervousness is a big issue.

Just as it is said that only good writers understand how difficult it is to write well, so good presenters often invest more in their presentations than others realize. A checklist follows.

CHECKLIST FOR THE FIFTEEN MINUTE TECHNICAL PRESENTATION, FIVE MINUTES FOR QUESTIONS:

Plan
___Narrow topic to fit available time and resources.
___Identify audience. How do they relate to the topic?
___Identify common ground between presentation and the audience?
___Determine goals.

Draft
___List main points.
___Give special attention to motivation. Why will audience benefit?
___Figure out what background the audience will appreciate.
___Plan support for the textual content: visuals, audience handouts, and other materials.
___Seek audience feedback and talk to lab instructor.

Revise
___Trim content to equivalent of three single-spaced pages.
___Trim visuals to about three to five.
___Rehearse a first cut of the presentation.
___Revise presentation.
___Let presentation rest one or more days.
___With content stabilized, add some colorful vocabulary and revise visuals.
___Seek audience feedback and complete final tune-up.
___Visit physical location of the presentation to verify equipment availability.
___Confirm location of electrical plugs and on/off switches, note layout of audience seating.
___Try out visuals. Sit in the last row. Can you read them?

Perform
___Rehearse. (Test your limits!)
___Relax. (Test your lungs! Breathe deeply and slowly.)
___Present. (Project voice and enjoy.)

Communications Notes
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