

2022年春70250431



Scientific Ethics and Exposition

科学规范与表达

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2022.2.22, 3.1, 3.8, 3.15, 3.22, 3.29, 4.12

Tuesdays 15:20-16:55 @6A003

助教：郝敏升



Lecture 1

Introduction





1.0 What is this course about?

科学规范与表达 Scientific Ethics and Exposition

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What is this course about?



- Aim:
 - To help you **behave well** and **perform well** in the academic world
- Context:
 - Mostly STEM (Science, Technology, Engineering and Math)
- Working language: mixed English and Chinese
- Contents:
 - How to make better presentations
 - How to write better
 - Basic principles of scientific **integrity** and responsible conduct
 - Ethic issues in science and technology
 - About critical thinking



问题?

the quality of being honest and
having strong moral principles

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Basic logistics

- 上课时间地点：
 - 2.22, 3.1, 3.8, 3.15, 3.22, 3.29, 4.12（前八周周二）15:20-16:55 **6A003**
- 课程组成：
 - 上课及课上互动（7次课）
 - 作业：2次练习 + 1个结课总结
- 考查：**通过/不通过**
 - 计分办法：
 - 3次作业：每次满分5分，按**认真程度**（而非水平）计分，**未按时交作业或明显不认真得0分**
 - 7次课：每次全程出勤且积极互动得1~2分，**旷课得0分**，迟到早退按照缺课时间占课时比例扣分（如确有合理原因事先请假除外）
 - **10项之乘积达到100分为“通过”（满分16,000），否则“不通过”**



注：有同学戏称为“史上最硬核PF课”

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大纲（Syllabus）



- | | |
|--|---|
| <ul style="list-style-type: none"> • Lecture 1. Introduction 2.22 <ul style="list-style-type: none"> – How to read papers effectively – How to listen to talks effectively • Lecture 2. Scientific Presentations <ul style="list-style-type: none"> – Scientific presentation as a composition – Composing slides and talks – Poster presentations | <ul style="list-style-type: none"> • Lecture 4. Communications and Documentations 3.15 • Lecture 5. Language Use <ul style="list-style-type: none"> – Language style for academic writing – Common language issues in English |
| <ul style="list-style-type: none"> – Presentation practices 3.1 – Comments and discussions | <ul style="list-style-type: none"> – Writing practices 3.22 – Comments and discussions |
| <ul style="list-style-type: none"> • Lecture 3. Scientific Writing 3.8 <ul style="list-style-type: none"> – All you learned on writing were wrong – How scientific publication works – Method for scientific writing – After the review | <ul style="list-style-type: none"> • Lecture 6. Responsible Conduct in Research 3.29 • Lecture 7. Public Media and Critical Thinking 4.12 • Lecture 8. Ethic Issues in Science and Technology |

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作业1. PowerPoint设计和展示练习



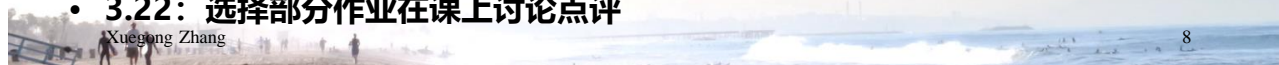
- 2.22起：选择本人之前的一个旧ppt文件（≤10页，中英文均可）
- 根据本课内容整理一个ppt设计要点（1页内）
- 对自己的旧ppt文件进行分析点评，分析内容至少包括：
 - 该ppt当初设计的用途、目的和观众
 - 现在看该ppt设计中的优点（如果有的话）和缺点（如果有的话）
- 在此基础上对原内容重做新ppt文件并准备课堂展示
- **2月26日提交：2个版本的ppt文件，ppt设计要点总结，自点评报告**
- **3.1 课上抽选部分同学在课堂上进行展示和点评、讨论**
- 课后梳理从讲课和同学展示中的内容，写成对如何设计ppt和任何作报告的要点体会报告，**3月3日提交到网络学堂**
- 另外，从过去自己的论文或报告中选1页作为课堂实例分析的候选样本，**3月3日提交到网络学堂**



作业2. 英文写作练习



- **3.1起：根据自己以前的认识或经验，总结英文科技写作要点（不少于半页）**
- 选以下题目之一写成英文短文（1页内，Times New Roman 11pt字体单倍行距）：
 - ① 向你之前认识的外国友人写邮件问候中国年，并介绍冬奥情况和/或中国防疫情况
 - ② 向各位某教授写邮件申请访问学习机会（自己假想一个项目）
 - ③ 假设导师是某大会主席，自己以大会秘书身份代表主席写邮件邀请国外某教授投稿和参会
 - ④ 向自己领域某个学术会议投稿的一篇摘要（含图表文献共1页内）
- 请1位同学阅读自己的写作并给出书面点评。如是书信，请同学以对方身份给你回信；如是投稿，请同学以会议程序委员会身份给出模拟审稿意见。
- 对同学点评/回信/审稿意见给出反思，同时站在第三者角度对回信/审稿意见点评
- **3月12日提交：自己总结的写作要点、英文短文、同学点评和自己的反思、点评**
- 更新自己总结的写作要点（中文1页内），修改或重写英文短文
- **3月17日提交：重新整理的写作要点、新版短文、自己对两次写作的体会（中文1页内）**
- **3.22：选择部分作业在课上讨论点评**



作业3. 结课总结报告



- 4月12日课之后开始写，中文（留学生可写英文），自由格式，以不超过3页为宜
- 内容包括
 - 对作科技报告和写科技文章的方法要点和注意事项再次进行整理和汇总
 - 本课学习的体会（与建设性建议）
- **4月16日提交到网络学堂**

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课程要求



- 认真对待课程，用心提高自我
- 全勤听课，积极参与互动，认真完成作业
- 调整心态，放下架子，忘掉面子，勇于否定自我，勇于暴露问题
- 尊重他人，学习他人长处

问题：

- 以往经常出现“听的时候频频点头，或觉得自己早就知道，到自己做时完全抛到脑后”，怎样避免？

建议：

- 适当记笔记
- 时常提醒自己
- 必要时复习

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科学表达的开始：自我介绍

- 每人做<20秒自我介绍
- 目的是让原来不熟悉的老师同学认识并尽量记住你
- 介绍完后全体点评

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张正阳	程雪珂	徐皓天	高子靖	宁辉
张洵荣	陈奕凡	尹伟杰	蔡昊晓	张晓藤
霍凯达	荆睿	刘清源	苗钰鑫	齐纪
邵睿智	崔晏菲	张丁帆	颜楠	刘浩涤
何玺	汪一帆	梁秋金	朱雅琪	伊尔凡

- 点评与讨论
 1. 怎样自我介绍更容易留下印象？
 2. 在课堂上安排这个自我介绍环节是为什么？



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Scientific Expositions 科学展示

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Types of Scientific Expositions



- Research notes, memos
- Letters, emails, weekly reports, technical reports
- Oral presentations (talks, lectures, speeches)
- Poster presentations
- Conference abstracts, papers
- Journal papers (multiple sub-types)
- Books (monographs, textbooks)
- Grant applications
- Thesis, dissertations
- ...



All types of expositions need **composition**.

Composition: 创作/写作/构图/作曲

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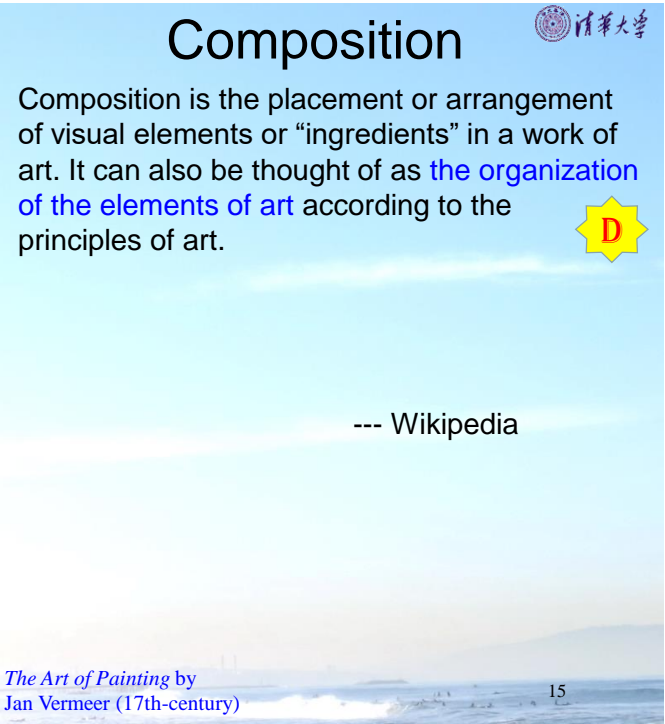


Composition

Composition is the placement or arrangement of visual elements or “ingredients” in a work of art. It can also be thought of as **the organization of the elements of art** according to the principles of art.

--- Wikipedia

The Art of Painting by Jan Vermeer (17th-century)





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车尔尼599第60首练习曲谱

(大众乐谱网制谱)



本曲谱上传于  中国曲谱网



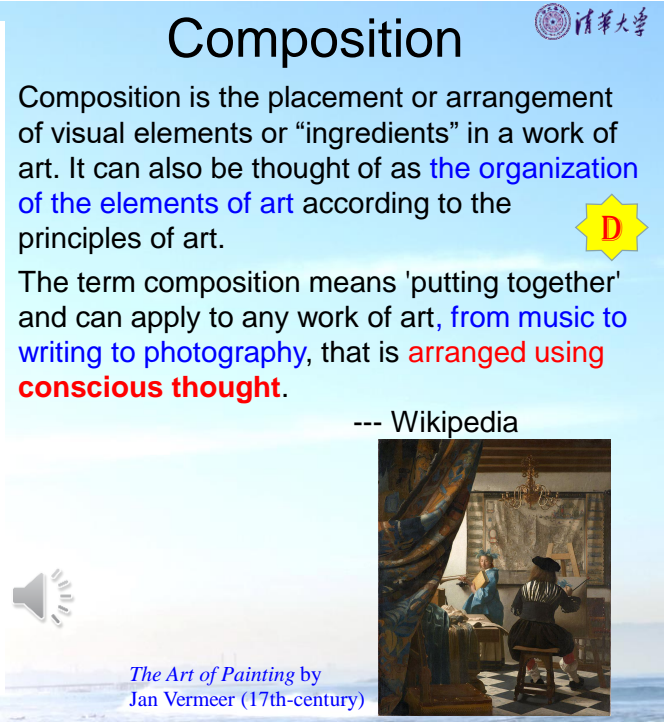
Composition

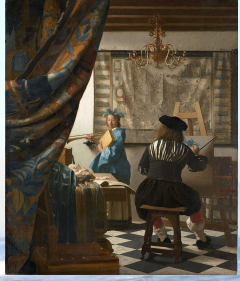
Composition is the placement or arrangement of visual elements or “ingredients” in a work of art. It can also be thought of as **the organization of the elements of art** according to the principles of art.


The term composition means 'putting together' and can apply to any work of art, **from music to writing to photography**, that is **arranged using conscious thought**.

--- Wikipedia


The Art of Painting by Jan Vermeer (17th-century)










Tchaikovsky
Piano Concerto No. 1 in Bb Major
Op. 23
1st Movement
Allegro non troppo e molto maestoso



D

Types of Scientific Expositions

- Research notes, memos
- Letters, emails, weekly reports, technical reports
- Oral presentations (talks, lectures, speeches)
- Poster presentations
- Conference abstracts, papers
- Journal papers (multiple sub-types)
- Books (monographs, textbooks)
- Grant applications
- Thesis, dissertations
- ...

All forms of scientific expositions need composition.



问题：我这里用美术和音乐来介绍Composition的目的是什么？

- 形象说明科学展示中“构图/创作”的重要性
- 科学展示的创作，与艺术作品一样都需要具有全局观
- 提高本课的吸引力

—— 做事都是有原因/目的的



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从哪里开始？

- 我们可能没有写过论文、作过报告
 - 但我们都读过论文、听过报告
- ✓学会做有效的听众和读者，是学会作报告、写文章的基础

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在学习如何作报告和写作之前，我们先需要学习

How to read papers and listen to talks **effectively**

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1.1

How to read papers effectively

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- Structure of a typical journal article

- Title
- Keywords
- Abstracts
- Introduction
- Experimental/methodological
- Results and Discussion
 - Tables, Figures
- Summary/Conclusions
- References



- The better algorithm:



- Phase 1: Surveying the article
- Phase 2: Reading the article
- Write some notes in both phases

Prof. Pete W. Carr, Univ. of Minnesota, Dept. of Chemistry

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课后
自学

- Phase I: Survey the article
 - to keep up with what's going on in the literature
 - and to see if it really worth to spend a lot of time on

Feel free to stop reading the paper at any point,
if you are not obligated to read it.

1. Read the **title** and keywords
2. Read the **abstract**
3. Read the **conclusions**



结论通常在哪里？

- Abstract的最后几句
- Introduction的最后一段（或倒数第二段）
- Conclusion/Discussions的第一段

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课后
自学

- Phase II: Read the article
 - Look at the tables and figures (including captions)
 - What was done in the work
 - Read the introduction
 - The background and why the study was done
 - Read the results and discussion
 - The heart of the paper
 - Read the experimental/methodological
 - How they did the work
 - You only get to this point if (and only if) you are really interested and need to understand exactly what was done.

这与你设想/习惯/以为的
做法最大的不同是什么？



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- Now what?
 - Write some notes so you don't have to reread the whole paper
 - Using some system so that you can easily collect and access your notes
 - 好记性不如烂笔头
 - The faintest writing is better than the best memory!
- Reading a paper can take
 - from a few seconds
 - to a couple of hours or even days



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- Phase I: Survey the article
 - to keep up with what's going on in the literature
 - and to see if it really worth to spend a lot of time on



Feel free to stop reading the paper at any point,
if you are not obligated to read it.

1. Read the **title** and keywords
2. Read the **abstract**
3. Read the **conclusions**

那如果是导师布置的怎么办?

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投票 最多可选1项

⚙️ 设置

讨论：如果是导师要求读的论文，但我在第一阶段就发现无趣，我应该怎么办？



- ☐ A 硬着头皮进入第二阶段
- ☐ B 不读了，告诉老师我读了但论文没意思
- ☐ C 不读了，也不告诉老师
- ☐ D 其他

提交

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• Phase I: Survey the article

- to keep up with what's going on in the literature
- and to see if it really worth to spend a lot of time on



Feel free to stop reading the paper at any point,
if you are not obligated to read it.

1. Read the **title** and keywords
2. Read the **abstract**
3. Read the **conclusions**

那如果是导师布置的怎么办？

建议：

首先搞清楚

- 导师为什么让我读？
- 我为什么会认为无趣？

然后找导师讨论

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休息10秒钟



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1.2 How to listen to talks effectively

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投票 最多可选7项

⚙ 设置

我听报告的时候情况经常是：

- A 听得非常好，很有收获
- B 开始努力听，发现听不懂，看了下手机，再听就更不懂了
- C 开始认真听，发现都知道，看了下手机，发现不知道讲啥了
- D 一直认真听，一直也听不懂，真浪费时间
- E 一边听报告，一边用电脑干其他事
- F 越听越困
- G 其他

提交

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“你可能根本不会听报告！”



- 你之前听报告的经验来着哪里？
 - 上课
 - 听名人报告，听领导讲话
 - 听组会
 - 听学术报告
 - 听学长答辩
 - ...
- 听这些报告时你的思维习惯来自哪里？
 - 从小养成的上课习惯
 - 老师要求
 - 模仿老师/师姐/师兄/他人
 - ...

- 这些是合适的或有效的吗？
- 所以，
- 需要反思并重新建立听报告时的思维习惯和方式

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很多同学听报告的时间都浪费了！



• 解决办法：

- Use your mind! Be a **rational** person!

(rational: 理性的;合理的;理智的;神智清楚的)



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很多同学听报告的时间都浪费了！



• 解决办法：

- Use your mind! Be a **rational** person!

(rational: 理性的;合理的;理智的;神智清楚的)

- 问自己 “Why do I listen to the talk?” ， 给自己设定目标

- if (I’m attracted by the topic)

- Great! Go ahead to listen to the content, and also learn the presentation.

- else if (I’m attracted by the speaker)

- Ok, enjoy watching! And try to learning something besides enjoying watching.

- else if (I have to come)

- Well, you got to make some value of your time as you have to spend the hour here.

- else if (I don’t know)

- ERROR_NOT_SUPPORTED(0x32)! Return and re-enter.

课后自己体会

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How to listen to talks effectively?



- **Catch the point**

- **What is the problem?** Why did she work on it?
- What is her result and conclusion?
- What is her method? **What is the idea? What is the intuition?**
- Any inspiration on my own work? What if ...?

课后自己体会

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How to listen to talks effectively?



- **Catch the point**

- **What is the problem?** Why did she work on it?
- What is her result and conclusion?
- What is her method? **What is the idea? What is the intuition?**
- Any inspiration on my own work? What if ...?

- **Reflect on the presentation**

- How she presents the work? Is it understandable? Is it enjoyable?
 - Logic flow, visual tools, language use, presentation skills
- How she says those words? Why her pronunciation of that word is different from mine?
- Anything I can borrow or should avoid in the way of presentation?
- ...

课后自己体会

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Behave properly in the audience



- For all types of talks
 - Silence your phones
 - Pay attention to the speaker. Be active in listening and asking questions.
- Informal talks
 - Ask questions whenever you have
 - But make sure the question is not only for you. Be considerate to other audience.
 - Be polite but sincere. Treasure everyone's time. Avoid useless words.
- Formal talks
 - Ask questions when you are allowed or encouraged to, usually at the end
 - Be polite in the correct way
 - Do not comment on the speaker if she is more senior than you
 - Be sincere and brief when expressing appreciation, or ask your question directly
 - Treasure everyone's time. Avoid useless words.

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 - **Treasure everyone's time. Avoid useless words.**

不要盲目模仿他人的提问方式

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In summary,

- Be aware of the reason / purpose that you do it
- Be aware of the method you do it
- Always try to optimize your method

课程要求

- 认真对待课程，用心提高自我
- 全勤在线听课，积极参与互动，认真完成作业
- 调整心态，放下架子，忘掉面子，勇于否定自我，勇于暴露问题
- 尊重他人，学习他人长处



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To improve writing & presentation skills

- While or after I read a paper, ask myself:
 - **How would I do it if I wrote this paper?**
 - How would I introduce the topic? How would I order the contents?
 - How would I draw the figure? How would I describe that experiment?
 - How would I present that algorithm? How would I discuss that conclusion? ...
- While or after I listen to a talk, ask myself:
 - **How would I present it if I were the speaker?**
 - How would I organize the materials?
 - How would I design the slides?
 - How would I present the method/conclusion? ...

课后自己体会

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A simple thing we should always do
besides our attention on the contents

- While or after I read a paper, ask myself:
 - How would I do it if I wrote this paper?
 - How would I think about the topic? How would I find the materials?
 - How would I draw the figure? How would I describe that experiment?
 - How would I present the result? How would I discuss the conclusion? ...
- While or after I listen to a talk, ask myself:
 - How would I present it if I were the speaker?
 - How would I organize the materials?
 - How would I design the slides?
 - How would I present the method/conclusion? ...

Take-home message:

**Use your mind, be aware,
and control everything!**

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休息4分钟

