

**College of Engineering Peer Teaching Review**  
**Dustin Gilbert, Assistant Professor**  
**Fall 2019**

**1. General Information**

- Faculty member reviewed: Dr. Dustin Gilbert
- Department: Materials Science and Engineering (MSE)
- Review semester: Fall, 2019
- Review team: Dr. Kenneth Kihm (MABE), Dr. Claudia Rawn (MSE), and Dr. Hahn Choo - chair (MSE)
- Review submitted to: Dr. Veerle Keppens, MSE Dept. Head

**2. Course Reviewed**

- Course title: MSE 201 – Introduction to Materials Science and Engineering
- Catalog info: Correlation of atomic structure, crystal structure, and microstructure of solids with mechanical, physical, and chemical properties of engineering significance.

**3. Review Process**

- The review committee chair met with the associate dean, Dr. Frymier, and department head, Dr. Keppens, at the beginning of the fall semester of 2019 to initiate the process.
- Subsequently, Dr. Gilbert met with the review committee to provide overview of his class, plan the classroom visits, and provide the course materials such as course syllabus with detailed class schedule and examples of homework assignment and exam. Dr. Gilbert also provided the committee access to course website on Canvas.
- Each review team members reviewed the course materials and also visited the class two times during the semester. A total of four visits were conducted as follows:
  - Individual visits: Oct. 15 (Dr. Rawn), Oct. 22 (Dr. Kihm), and Oct. 29 (Dr. Choo)
  - Group visit and discussion with students: Nov. 14 (all three committee members)
- The classroom observation reviews by Dr. Kihm and Dr. Rawn were submitted to the chair and incorporated into this summary.
- The committee members and Dr. Gilbert had a chance to review the summary document before the final version is submitted to the department head.

**4. Committee Evaluation on Review Criteria**

**(1) Course content**

The course reviewed is one of the larger sections of MSE 201 (with 70 students enrolled), which is taught to engineering undergrads from many departments including some MSE students. This is an important service course for the department. For the MSE majors, it is the first core course they take. This course sets up the basics of MSE and the expectations include (1) introducing a broad and essential topics covering the structure, property, and processing of metals, polymers, and ceramics, and (2) preparing the MSE students for junior-level core courses, while getting them excited about their major.

Dr. Gilbert's course contents exceeds all key expectations set for the course by the department. The department uses a common textbook (written by Callister) across all MSE201 sections. Based on course syllabus as well as semester-long observations both in the classroom and through Canvas site by the committee, Dustin teaches key contents in all chapters of the textbook expected to be covered.

Also, during the "Q & A" session with students by committee, the students clearly expressed that the course contents are consistent with the expectations based on the curriculum structure and with what is outlined in the syllabus.

The committee agrees that the course content is appropriate and no changes are recommended.

## **(2) Teaching Methodology**

Dr. Gilbert's lecture slides are well prepared covering, for each chapter: objectives, core concepts, examples, and summary. The major part of lecture notes are from the textbook (Calister), but he had significant number of slides and supplemental content (including videos) that are not from the textbook, which indicates that he enhances the lecture materials significantly beyond what is provided from the textbook.

Dr. Gilbert's classroom delivery consists primarily of lectures using PPT slides. His slides often included useful real-life examples (e.g., cars, airplanes, transistors, etc) and numerous animations and movies illustrating important physical and mechanical phenomena beyond what is provided in the textbook (and companion slides), which helped explaining complex issues. His class has weekly quizzes, which help students review key concepts regularly and be able to keep up with the contents.

Often times, MSE faculty express the difficulty of teaching this large service course due to the broad contents that have to be covered within a semester to entry-level undergraduate students from different backgrounds. However, it is evident that Dr. Gilbert did not have problem of covering all chapters effectively. We believe this is because of his outstanding organization of class schedules, effective use of class time, and exciting classroom teaching and interaction.

Dr. Gilbert's grading scheme is clearly outlined in his syllabus and is reasonable with good proportions of quizzes and exams. Students expressed that his grading is timely and fair. Majority of students were satisfied with his availability and quality of help they get when visiting him during office hours.

The committee agrees that Dr. Gilbert's teaching is effective and student feedback is overall positive.

## **(3) Classroom Observations**

- The classes were well attended and started on time.
- He began his lectures by reviewing what was covered in the previous class for a few minutes, and led that to the list of objectives of the new class. This gave a good outline of what was taught, what will be taught, and how they are related.
- The lecture materials, which were prepared in PPT files, were outstanding and undoubtedly won the students' attention. A highly conscientious attitude was observed among the students throughout the entire class period. Eye-catching images and video clips that Dr. Gilbert had includes in his lecture were wonderful supplements for the students' learning.
- It was impressive how well Dr. Gilbert was able to keep a large group of students engaged during the entire class period (75 minutes). He was interacting with students by asking questions frequently. Students responded well and also asked good questions, which made the class lively.
- He is friendly and casual with students, making the classroom environment inviting. Students seemed to be comfortable talking to the instructor and not afraid to ask questions.
- The class ended on time with a quick recap of what they learned and also with reminders on upcoming due dates, quizzes, etc. During multiple class visits, it appears that the class time is used efficiently.

## **(4) Student Feedback**

- Students mentioned that Dr. Gilbert teaches "visually" (e.g., by using videos) and it is effective and appreciated.
- Dr. Gilbert is energetic, enthusiastic, knowledgeable, and engaging.
- Overall, students agreed that Dr. Gilbert is encouraging in and out of classroom. Students feel that he genuinely cares about their learning.
- He is easy to approach and helpful outside of the class. He keeps his office hours and is accessible both online and offline.
- His quizzes and exams are fair and provide students "equal chance" of doing well. At the same time, he still maintains the quality and challenges students. He quickly grades and returns exams.

- He uses Canvas course website effectively and makes it easy for students to keep up with notes, grades, etc.
- One student expressed that it would be nice if a few more example problems are worked out during the class.

## **5. Overall Summary**

Dr. Gilbert demonstrated a clear and commanding understanding of the course material. His class is well organized in all aspects: preparation of materials, class scheduling, lecture delivery, assignments/quizzes/exams, and grading. Dr. Gilbert has put together a nice course that covers core knowledge appropriate for the class. He is an effective teacher who puts in extra care, time, and effort for students' better learning experience in and out of his classroom. Overall, he is a commendable teacher who runs his class eloquently, with confidence in his knowledge of the subject matter while maintaining relaxed learning environment. Dr. Gilbert has lots of potential to become an award-winning teacher in the future.

*Prepared by Kenneth Kihm, Claudia Rawn, and Hahn Choo on 12/5/2019*