Author: **Chojnacki, Sarah L.**

Title: ***The Relationship Between Student Knowledge of Medical Terminology and Exam Score on the National Credentialing Exam for Medical Assistant Graduates***

The accompanying research report is submitted to the **University of Wisconsin-Stout**, **Graduate School** in partial completion of the requirements for the

Graduate Degree/ Major: MS Career and Technical Education

Research Advisor: Kathy Brock, Ph.D.

Submission Term/Year: Fall 2022

Number of Pages: 57

Style Manual Used: American Psychological Association, 7th edition

☑ **I have adhered to the Graduate School Research Guide and have proofread my work.**
☑ **I understand that this research report must be officially approved by the Graduate School.** **Additionally, by signing and submitting this form, I (the author(s) or copyright owner) grant the University of Wisconsin-Stout the non-exclusive right to reproduce, translate, and/or distribute this submission (including abstract) worldwide in print and electronic format and in any medium, including but not limited to audio or video. If my research includes proprietary information, an agreement has been made between myself, the company, and the University to submit a thesis that meets course-specific learning outcomes and CAN be published. There will be no exceptions to this permission.**
☑ **I attest that the research report is my original work (that any copyrightable materials have been used with the permission of the original authors), and as such, it is automatically protected by the laws, rules, and regulations of the U.S. Copyright Office.**
☑ **My research advisor has approved the content and quality of this paper.**

STUDENT:

NAME: Sarah L. Chojnacki **DATE: 01/09/2023**

ADVISOR: (Committee Chair if MS Plan A or EdS Thesis or Field Project/Problem):

NAME: Kathy Brock, Ph.D. **DATE: 01/09/2023**

This section for MS Plan A Thesis or EdS Thesis/Field Project papers only
Committee members (other than your advisor who is listed in the section above)

1. **CMTE MEMBER'S NAME:** **DATE:**
2. **CMTE MEMBER'S NAME:** **DATE:**
3. **CMTE MEMBER'S NAME:** **DATE:**

This section to be completed by the Graduate School
This final research report has been approved by the Graduate School.
Director, Office of Graduate Studies: **DATE:**

Chojnacki, Sarah L. ***The Relationship Between Student Knowledge of Medical Terminology and Exam Score on the National Credentialing Exam for Medical Assistant Graduates***

Abstract

Medical terminology is the language spoken in healthcare. Credentialed allied health professionals are expected to understand and communicate using medical terminology. In order for a medical assistant program graduate to become credentialed, one must successfully complete a national credentialing exam for medical assistants, such as that offered by the American Association of Medical Assistants. It may be difficult for a medical assistant program graduate to successfully complete the credentialing exam if one does not have a strong understanding of medical terminology. This study aimed to determine if there is a relationship between knowledge of medical terminology and successful completion of the Certified Medical Assistant credentialing exam offered by the American Association of Medical Assistants. A convenience sample of historical data consisting of exam scores and course grades from 162 individuals was analyzed for Medical Assistant program graduates from one technical college in Wisconsin. The resulting analysis identified a weak relationship between Medical Terminology course grade and certification exam scores; however, a stronger relationship was noted when consideration was given to the amount of time between completing the Medical Terminology course and completing the certification exam.

Acknowledgments

Completion of this project was made possible with the support of my family. I am appreciative of my husband's continued encouragement and my children's patience. I know it was not an easy process, and I appreciate the understanding and flexibility shown while I was consumed with research and writing.

To Dr. Brock: Thank you for providing me with your guidance, expertise, and availability as I worked on this project. I can now assimilate this practice to writing a self-study for accreditation with comprehensive effort, thought, and dedication poured into my project.

Lastly, I am grateful for the opportunity to be able to teach medical assisting. Spending time in the classroom with students has the ability to brighten cloudy days. To all of my past students, thank you for helping me learn.

Table of Contents

Chapter I: Introduction

For post-secondary students studying health science, learning medical terminology is like learning a new language; that is, the language of health care. Young children learn their native language by listening and repeating with the intent of understanding and forming context (Neville & Migley, 2008). Developing knowledge of medical terminology adequate enough to communicate effectively in the healthcare setting requires a conscious effort by students for knowledge acquisition (Neville & Migley, 2008). Allied health students who enroll in a post-secondary medical assistant program are required to successfully complete a medical terminology course. In order to communicate effectively in the healthcare community, discipline-specific reading and writing education is necessary (Carter & Rukholm, 2008). A formal medical terminology course aids cognitive retention of medical terms through analysis of the individual word parts, as well as builds confidence to pronounce and understand complex medical terms (Phillips, 1981).

Allied health professionals, such as medical assistants who work in a healthcare clinic, are required to communicate daily using appropriate medical terminology. Communication occurs between the medical assistant and the patient, the medical assistant and the health care provider, as well as between other members of the health care team. Effective communication utilizing medical terminology is important for the purpose of teaching patients about concepts related to their health and improving overall patient outcomes relative to their health care (Ortega & Prada, 2020).

In addition to learning medical terminology, students enrolled in a Medical Assistant Technical Diploma program will learn technical skills, such as obtaining vital signs, collecting patient medical histories, performing venipuncture, administering medications, and assisting the healthcare provider with physical examinations. These tasks require error-free communication with all members of the healthcare team.

Typical post-secondary educational programs for medical assisting are 12 months in length. Upon completion of an accredited medical assistant program, a graduate is eligible to sit for a nationally recognized credentialing exam with the intent of obtaining industry credentials demonstrating knowledge in the field of medical assisting. These exams are voluntary and may or may not be required to work as a medical assistant. Earning a credential such as that offered by the American Association of Medical Assistants (AAMA), which is the CMA (AAMA) credential, provides evidence of competence in the field and may bring about increased recognition from professional peers (AAMA, 2013). Earning a credential in medical assisting is also a way to demonstrate one’s commitment to professionalism (AAMA, 2013).

Specific content tested on a national credentialing exam for medical assistants varies according to the organization creating the exam, but always includes medical terminology basics and application. According to the exam content outline for the Registered Medical Assistant certification exam offered by the American Medical Technologists, medical terminology is included in the anatomy and physiology section of the exam, which comprises nearly 22% of the total exam questions (American Medical Technologists, n.d.). A strong cognitive foundation of medical terminology is necessary to successfully complete this credentialing exam administered by the American Medical Technologists. The same is true of the credentialing exam offered by the AAMA; medical terminology is tested in the general category, which makes up 28% of the overall test questions, according to the exam content outline (AAMA, personal communication, January 5, 2023). It is possible that one who is not confident with medical terminology, or one who does not fully understand the language of medical terminology due to speaking a primary language other than English, may have difficulty successfully completing a national credentialing exam for medical assistants. Confidence in one’s ability to apply the language in the professional context is necessary (Lum et al., 2018). Lacking a strong cognitive foundation in medical terminology may predict an unsuccessful score on the national credentialing exam.

Statement of the Problem

The medical assistant national credentialing exam offered by the AAMA requires that examinees possess a strong cognitive foundation of medical terminology. A cognitive foundation is built through successful completion of the Medical Terminology course. The *AAMA 2018-2019 Occupational Analysis of Medical Assistants* identified that knowledge of medical terminology was ranked at an importance level of 3.83 on a scale of zero (least important) to four (most important; AAMA, 2020a) . Difficulty may arise if one does not possess a minimum necessary knowledge of medical terminology. It is unclear if a relationship exists between one’s final grade in the Medical Terminology course and certification exam scores for medical assistant graduates at a specific technical college in Wisconsin.

Purpose of the Study

The purpose of this study is to analyze the relationship between a cognitive foundation of medical terminology and the successful completion of the AAMA credentialing exam for medical assistants. Completion of a credentialing exam for medical assistants requires application-based understanding of medical terminology. The following questions will guide the research:

1. Is there a relationship between the Medical Terminology final course grade and the final score on the first attempt of the credentialing exam offered by the American Association of Medical Assistants (AAMA)?

2. Is there a relationship between the final grade in the Medical Terminology course and the General section score of the AAMA credentialing exam?
3. Is there a relationship between the final grade in the Medical Terminology course and the Administrative section score of the AAMA credentialing exam?
4. Is there a relationship between the final grade in the Medical Terminology course and the Clinical section score of the AAMA credentialing exam?
5. Is there a difference in correlation between the final grade in the Medical Terminology course and the final score on the first attempt of the credentialing exam offered by the AAMA when consideration is given to the number of months elapsed between completing the Medical Terminology course and attempting the AAMA exam for the first time?

Assumptions of the Study

In regard to this study, the following assumptions exist:

1. Students enrolled in the Medical Assistant program must complete Medical Terminology as one of their first classes in the program. Whether the class is completed on-campus or at a local high school as a dual credit option, grading of assessments follows the same standard.
2. The modality of completion for the Medical Terminology course will not impact one's retention of cognition of medical terms.

Definition of Terms

The definitions identified here will assist the reader to fully understand the context of the relationships represented in this research.

Accredited Medical Assistant Program

An accredited medical assistant program has an accreditation status, which is granted to a program that "is in substantial compliance with the accreditation Standards" (Commission on Accreditation of Allied Health Education Programs, n.d., "Accreditation" section).

Administrative Section

The administrative section is a content category tested on the AAMA certification exam consisting of questions pertaining to medical business practices, medical reception, medical records, scheduling appointments, and patient navigator (AAMA, personal communication, May 31, 2018).

Clinical Section

The clinical section is a content category tested on the AAMA certification exam consisting of questions pertaining to anatomy and physiology, infection control, documentation of care, patient preparation, assisting the provider, nutrition, collecting and processing specimens, diagnostic testing, pharmacology, and emergency management (AAMA, personal communication, May 31, 2018).

CMA (AAMA)

Certified Medical Assistant is a trademarked credential designating "a medical assistant who has achieved certification through the Certifying Board of the American Association of Medical Assistants" (AAMA, n.d.-c, "What is a CMA (AAMA)?" section).

General Section

The general section is a content category tested on the AAMA certification exam consisting of questions pertaining to medical terminology, psychology, communication, professionalism, medical law and ethics, risk management, quality assurance, and safety (AAMA, personal communication, May 31, 2018).

Medical Assistant

A medical assistant is a medical professional that assists a healthcare provider in an outpatient clinic by performing administrative and clinical tasks (AAMA, n.d.-d).

Methodology

This researcher attempted to identify if there is a relationship between cognition of medical terminology and credentialing exam scores for medical assistant examinees. The variables examined in this research study are students' Medical Terminology final course grade as well as first-attempt AAMA credentialing exam scores for medical assistant graduates.

Chapter II: Literature Review

The purpose of this study is to analyze the relationship between cognitive foundation of medical terminology and successful completion of the AAMA credentialing exam for medical assistants. The variables to be studied are students' final course grade in the Medical Terminology course and graduates' scores on the first attempt of the CMA (AAMA) national credentialing exam. According to Wang et al. (2016), learning medical terminology is necessary to communicate as a healthcare professional. The CMA (AAMA) Certification Exam offered by the AAMA requires that examinees have a broad and thorough understanding of general, clinical, and administrative content to complete the rigorous exam (AAMA, n.d.-a). This review of literature details the variables of the study and includes a discussion of cognitive foundation, credentialing exams, and the medical assisting certification exams.

Cognitive Foundation

Medical terminology is the language used to communicate throughout healthcare both efficiently and quickly (Wang et al., 2016). According to the third edition of *Stedman's Concise Medical Dictionary*, learning one of the building blocks of the medical language, a prefix, suffix, or combining form, can help learn about 50 different medical words (Dirchx & Stedman, 1997 as cited in Dean-Jones, 1998). All students completing a degree in health sciences are required to complete a Medical Terminology course (Ryan, 2011). Typical learning objectives in a medical terminology course, such as those in *Introduction to Analyzing and Evaluating Medical Terminology* from the Illinois CTE Innovative Curriculum Resources (Anjur et al., 2020), consist of identifying and defining medical word parts and building and deconstructing medical terms using the word parts. The final examination assessment in a Medical Terminology course is indicative of one's understanding of the language of medical terminology. According to Ryan

(2011), remediation in reading may be necessary for health science students to be successful in the Medical Terminology course.

Cognition of medical terminology requires repetition to form memory of word parts. Strategies, such as taking notes, memorizing, and repeating terms, can help with acquisition, comprehension, and retention of new vocabulary (O'Malley & Chamot, 1990, as cited in Wang et al., 2016). These processes identify how cognition is developed. According to Bandura's theory of social learning, cognitive processes are paired with observation in a social setting for learning to take place (Horsburgh & Ippolito, 2018). Bandura's theory identifies four stages of learning: attention, retention, reproduction, and motivation. Horsburgh and Ippolito (2018) concluded that students were able to learn medical terminology following Bandura's stages with observation in a clinical setting.

Cognition in health sciences is also being studied in curriculum application with a process called design thinking (McLaughlin et al., 2019). In a research review by McLaughlin et al. (2019), it was determined that little research is available about design thinking in health professions education; however, it is an emerging topic. Educators can use design thinking to train students in critical and creative thinking; collaborative designs can also assist with development of interdisciplinary communication essential in healthcare (McLaughlin et al., 2019).

National Credentialing Exams in Health Professions

Credentialing exams for health professionals are varied according to the career. Some exams must be completed before a student graduates from the educational program, while other exams are completed after graduation from an accredited program. Some credentialing exams are required to practice in a healthcare setting, but some exams are voluntary and optional.

Regardless of the specific exam details, each examinee desires successful completion. Academic programs also desire for students to successfully complete their credentialing exam due to the fact that exam scores may be linked to accreditation outcomes. Kurowski-Burt et al. (2020) identified that credentialing exam scores for occupational therapists are a critical quality indicator for retaining programmatic accreditation. Similarly, although credentialing exams for medical assistants are optional, exam passage data are reported annually for the purpose of meeting accreditation thresholds related to program quality.

Research available indicates that specific factors, such as academic course grades, are indicative of successful completion of credentialing exams (Bayliss et al., 2017; Condon & Barefield, 2016; Kurowski-Burt et al., 2020). Bayliss et al. (2017) identified that program grade point average and Graduate Record Examination section scores are indicators of first time passing. Kurowski-Burt et al. (2020) identified that multiple variables attribute to credentialing exam success, such as course grades, academic course test scores, and fieldwork performance. Condon & Barefield (2016) agreed that course grades and Graduate Record Examination scores predict credentialing exam success; in addition, they determined that behavioral interviews at program admission were factors predicting success on credentialing exams.

Although not related to credentialing exam success, a study by Langtree et al. (2018) determined that grade point average in pre-program courses was a good indicator of success in the program. These findings indicate that academic factors may predict a student's success potential, or lack thereof, for credentialing examinations. Multiple authors suggest that academic interventions during a health professions educational program could assist with exam success (Bayliss et al., 2017; Kurowski-Burt et al., 2020).

Medical Assisting Certification Exam

The Certified Medical Assistant credentialing exam is a voluntary, national exam. The three sections of the exam consist of clinical, general, and administrative topic areas (AAMA, personal communication, January 5, 2023). The clinical competency category includes questions about patient intake and discharge, safety and infection control, procedures and examinations, and pharmacology, according to the AAMA (personal communication, January 5, 2023). The general category includes questions about legal and ethical issues and communication. Lastly, the administrative category includes questions about billing, coding, and insurance, and scheduling appointments and health information management (AAMA, personal communication, January 5, 2023). An examinee answers 200 questions, but only 180 questions are scored, calculated into a proficiency measure, re-scaled, and then placed on a reference scale to determine pass/fail status (AAMA, personal communication, May 31, 2018). The AAMA offered the first certification exam in 1963 in three states: California, Kansas, and Florida (AAMA, n.d.-b). Since that time, the exam is now offered year-round in many cities and states. The exam format has undergone changes, but the content tested has remained relatively the same. The requirement of having a credential is determined by each healthcare organization who hires medical assistants. Overall, regulatory requirements to work as a medical assistant vary from state to state. In the state of Wisconsin, certification as a medical assistant is not a requirement of employment; however, some healthcare organizations require a credential and others will offer an increased starting wage for possession of the credential.

Summary

The literature review examined cognitive foundation, national credentialing exams for health professions, and the medical assisting certification exams. Recognition of the importance of academic success, specifically in program courses relative to credentialing exam success, was identified. The AAMA (n.d.-a) describes the CMA (AAMA) certification exam as “a rigorous exam that requires a thorough, broad, and current understanding of health care delivery” (“Exam Content” section). Examinees are tested on content divided into three categories: general, administrative, and clinical competency, and there are 200 questions total on the exam (AAMA, personal communication, January 5, 2023).

Overall, the literature is lacking a specific focus on the medical assistant credentialing exam. To some extent, findings about other allied health professional exams can be generalized for medical assistant exams. Condon and Barefield (2016) identified mixed results relative to credentialing exam success between students who tested immediately after graduation and students who delayed testing.

Given the research that indicates program course grades impact credentialing exam success paired with the uncertainty of how this information pertains directly to a Medical Assistant program, research about credentialing exams for medical assistants is necessary. Voluntary credentialing exams are not required to be completed before one can work as an allied health professional. Voluntary credentialing is a key difference not well reported in current literature.

Chapter III: Methodology

National credentialing exams for medical assisting require that examinees possess a cognitive foundation of medical terminology. This cognitive foundation is built through successful completion of a Medical Terminology course. The purpose of this study is to analyze the relationship between student knowledge of medical terminology and successful completion of the AAMA's Certified Medical Assistant credentialing exam. This research is guided by the following five research questions:

1. Is there a relationship between the Medical Terminology final course grade and the final score on the first attempt of the credentialing exam offered by the AAMA?
2. Is there a relationship between the final grade in the Medical Terminology course and the General section score of the AAMA credentialing exam?
3. Is there a relationship between the final grade in the Medical Terminology course and the Administrative section score of the AAMA credentialing exam?
4. Is there a relationship between the final grade in the Medical Terminology course and the Clinical section score of the AAMA credentialing exam?
5. Is there a difference in correlation between the final grade in the Medical Terminology course and the final score on the first attempt of the credentialing exam offered by the AAMA when consideration is given to the number of months elapsed between completing the Medical Terminology course and attempting the AAMA exam for the first time?

The variables examined in this research study are students' Medical Terminology final course grade as well as first-attempt AAMA credentialing exam scores for medical assistant graduates. This researcher attempted to identify the relationship between cognition of medical terminology and credentialing exam scores for medical assistant examinees.

Understanding and applying medical terms is an important concept for medical assistant students and graduates. According to Bandura's theory of social learning, cognitive processes are required for learning (Horsburgh & Ippolito, 2018). Ideally, medical assistant students apply the four stages of Bandura's theory to form a strong foundation of medical terminology throughout their program coursework. It is expected that a strong cognitive foundation leads to successful completion of the Certified Medical Assistant national credentialing exam.

Acquiring an industry credential in medical assisting is desirable for graduates, but not always required to work as a medical assistant. Participants in this study graduated with a Medical Assistant Technical Diploma from a specific technical college in Wisconsin. According to a recent Annual Report Form submitted to the Medical Assisting Education Review Board, an average of 38 medical assistant graduates per calendar year from 2016-2020 at this college participated in a medical assistant national credentialing exam, with an average of 85 percent of those participants passing the exam.

Determining the relationship between one's final grade in the Medical Terminology course and one's credentialing exam score has the potential to guide future decisions for medical assistant students, medical assistant program leaders, and national credentialing organizations for medical assisting. This chapter identifies and describes the research design, selection of subjects, instrumentation, data collection and analysis, and limitations of the study.

Subject Selection and Description

This correlational study utilized convenience sampling to determine study participants. All participants completed the Medical Terminology course and successfully completed technical diploma degree requirements. A time frame of six calendar years, beginning with 2016, was used to identify study participants. All participants attempted the AAMA credentialing exam. The population for this study was all medical assistant graduates at this specific technical college in the state of Wisconsin. There were 162 total graduates with an average of 27 graduates per calendar year of this population. Approximately 95% of the graduates were female.

Instrumentation

For this non-experimental, quantitative study, historical data was utilized. The AAMA is the source for the credentialing exam scores. A report of exam scores was accessed through private login for program directors (a role held by this researcher). Final letter grades for the Medical Terminology course were obtained from the college's in-house unofficial student transcripts.

Data Collection Procedures

Approval was granted by the institution from which student data was collected, and collection of the historical data began immediately by this researcher. The report of credentialing exam scores was accessed and downloaded from the American Association of Medical Assistant's website. This is possible with private login information by a program director. Initial selection of the sample began by obtaining a list of all medical assistant graduates from this specific technical college in Wisconsin who attempted the AAMA credentialing exam between January 1, 2016 and July 14, 2021. Credentialing exam scores for each examinee included with this list consisted of the final scaled score, General section score, Administrative section score, and Clinical section score. Only the first-attempt exam scores were recorded. The unofficial transcript of each student from this list was viewed electronically to determine if the Medical Terminology course was taken in-house or transferred from a different educational institution. If the Medical Terminology course was taken at a different college and transferred in, the student was removed from the data list because a final course grade was not available. The final course grade was then recorded. In the event that a first or second attempt of the Medical Terminology course was not successfully completed, only the successful course grade was recorded. Students in the Medical Assistant program are given up to three attempts to successfully complete each course in the program. At that time, full student names were removed from the data set to protect the privacy of these individuals. This constitutes the study sample.

Data Analysis

After compilation of the convenience sample, descriptive statistical analysis took place. This researcher calculated the Pearson correlation coefficient using the data sets compiled. The goal of this analysis was to locate possible relationships in the data, as suggested by Laerd Statistics (n.d.). All data was presented in a table in a deidentified manner.

Limitations

The following limitations have been identified for this research study:

1. Data was limited to the medical assistant graduates from this one technical college in Wisconsin who successfully completed the program and attempted the AAMA national credentialing exam for medical assistants between January 1, 2016 and July 14, 2021. As a result, the data may have limited transferability to other accredited Medical Assistant programs, especially those programs outside the state of Wisconsin.
2. It is possible that the Medical Terminology course offered by this technical college was delivered in a local high school as part of a dual credit offering. This varied course setting may have impacted a student's final course grade.

3. The Medical Terminology course at this technical college is delivered in both a telepresence format and an online format. Multiple different allied health instructors teach this course. Course delivery and instructor variability may impact student engagement and ultimately potentially impact a student's final course grade.

Summary

The purpose of this study was to examine the relationship between student knowledge of medical terminology and successful completion of the AAMA's Certified Medical Assistant credentialing exam. To do this, historical data was collected internally from a specified technical college in Wisconsin and from the AAMA. The final convenience sample was determined through collection of data meeting specific characteristics. A data table was created to track the specific deidentified participants. The goal was to determine if a relationship exists between understanding of medical terminology and successful completion of the Certified Medical Assistant credentialing exam. This chapter identified methods used to collect and analyze data. Chapter IV will present the findings from the data collected.

Chapter IV: Results

The purpose of this study was to analyze the relationship between student knowledge of medical terminology and successful completion of the AAMA credentialing exam for medical assistants. The research design was a non-experimental, quantitative study using historical data. Certification exam scores were obtained from the AAMA via private login. All other data was obtained from the college's in-house records requiring password access.

Demographic

Participants for this study graduated with a medical assistant technical diploma from a specific technical college in Wisconsin during calendar years 2014 through 2021. All but three of the graduates completed the Medical Terminology course between August 2007 and July 2020. A total of 162 graduates within the study parameters then took the AAMA certification exam between January 2016 and July 2021. Seventy-five percent of these graduates passed the certification exam on their first attempt. Demographics are presented in Table 1.

Table 1

Participant Demographics

Year of AAMA Exam	Participants	Pass	Fail
2016	35	26	9
2017	34	26	8
2018	42	30	12
2019	23	19	4
2020	15	11	4
2021	13	9	4
Total	162	121	41

Data Analysis

In order to analyze the relationship between student knowledge of medical terminology and successful completion of the AAMA certification exam for medical assistant graduates, research questions were created based upon the specific sections of the AAMA certification exam, as well as the final score of the certification exam.

Research Question 1

The first research question attempted to identify if a correlation exists between one's final grade in the Medical Terminology course and the final score on the first attempt of the AAMA certification exam. The final score is a scaled proficiency measure for the three sections of the certification exam combined. This specific technical college in Wisconsin records final course grades as a letter, with pluses and minuses, based upon a 4.0 grade point scale. Possible passing grades for the Medical Terminology course are A, A-, B+, B, B-, C+, and C. Converted to a numeral, possible passing scores range from 4.0 down to 2.0.

Participants in this study had a final score on the AAMA certification exam ranging from 200 to 777. The minimum passing score is 430, as reported by the AAMA (personal communication, May 31, 2018). Appendix A identifies the data points. A Pearson correlation coefficient was calculated with the numeric final course grade and the certification exam final score for each of the 162 participants. One hundred and twenty-one of the total participants (75%) passed the AAMA certification exam on their first attempt. The Pearson correlation coefficient for this data is $r(160) = .27$, $p = .01$ (2-tailed).

Research Question 2

The second research question attempted to identify if a correlation exists between one's final grade in the Medical Terminology course and the General section score of the AAMA certification exam. The final grade in the Medical Terminology course was converted to a numeral, as described for the first research question. The General section of the AAMA certification exam covers the topics of medical terminology, psychology, communication, professionalism, medical law/regulatory guidelines, medical ethics, risk management, quality assurance, and safety (AAMA, personal communication, May 31, 2018).

Study participants from this specific technical college in Wisconsin had General section scores that ranged from zero to 98. The General section score alone does not determine one's overall ability to pass or fail the certification exam. The General section score is a proficiency measure of the number of questions answered correctly from the General section topics (AAMA, personal communication, May 31, 2018). See Appendix B for the data points. The Pearson correlation coefficient for this data is $r(160) = .21$, $p = .01$ (2-tailed).

Research Question 3

The third research question attempted to identify if a correlation exists between one's final grade in the Medical Terminology course and the Administrative section score of the AAMA certification exam. The Administrative section of the AAMA certification exam covers the topics of medical business practices, patient medical records, scheduling appointments, medical reception, patient navigator/advocate, and practice finances (AAMA, personal communication, May 31, 2018). Twenty percent of the total exam questions are from the Administrative topics.

Study participants from this specific technical college in Wisconsin had Administrative section scores that ranged from zero to 98. The Administrative section score alone does not determine one's overall ability to pass or fail the certification exam. The Administrative section score is a proficiency measure of the number of questions answered correctly from the Administrative section topics (AAMA, personal communication, May 31, 2018). See Appendix C for the data points. The Pearson correlation coefficient for this data is $r(160) = .24$, $p = .01$ (2-tailed).

Research Question 4

The fourth research question attempted to identify if a correlation exists between one's final grade in the Medical Terminology course and the Clinical section score of the AAMA certification exam. The Clinical section of the AAMA certification exam covers the topics of anatomy and physiology, infection control, patient intake and documentation of care, patient preparation and assisting the provider, nutrition, collecting and processing specimens, diagnostic testing, pharmacology, and emergency management/basic first aid (AAMA, personal communication, May 31, 2018).

Study participants had Clinical section scores that ranged from zero to 100. The Clinical section score alone does not determine one's overall ability to pass or fail the certification exam. The Clinical section score is a proficiency measure of the number of questions answered correctly from the Clinical section topics (AAMA, personal communication, May 31, 2018). See Appendix D for the data points. The Pearson correlation coefficient for this data is $r(160) = .29$, $p = .01$ (2-tailed).

Research Question 5

The final research question attempted to identify if there was a difference in correlation when consideration was given to the amount of time that had elapsed between completing the Medical Terminology course and attempting the certification exam for the first time. A student completing program courses full-time will complete Medical Terminology in their first semester and graduate a semester later after completing second-semester courses. Less than half of all Medical Assistant program graduates at this specific technical college in Wisconsin complete the program in two semesters. Rather, many students choose to complete pre-core courses first, including Medical Terminology, so they are able to focus solely on core skills courses during their final two semesters.

A full-time student who completes the Medical Terminology course in their first semester will complete the program five to seven months later, depending upon which semester they start. Therefore, it's possible for a graduate to attempt the AAMA certification exam as early as five months after completing the Medical Terminology course. To address this research question, graduates were separated into two groups: those attempting the AAMA certification exam for the first time five to 15 months after completing the Medical Terminology course and those attempting the certification exam 16 months or longer after completing the Medical Terminology course. See Appendix E for data points. A moderately positive correlation was found between the final course grade in Medical Terminology and the final AAMA exam score when the certification exam was taken 15 months or less after completing the Medical Terminology course, $r(53) = .50$, $p = .01$ (2-tailed). When graduates attempt the AAMA certification exam 16 or more months after completing the Medical Terminology course, the correlation coefficient is, $r(105) = .19$, $p = .05$ (2-tailed).

Summary

In total, 162 graduates of the Medical Assistant technical diploma program at this specific technical college in Wisconsin attempted the AAMA certification exam. Seventy-five percent of examinees, equaling 121 graduates, passed the exam on the first attempt. The Pearson correlation coefficients identified in this chapter indicate that little to no correlation exists between a graduate's final grade in the Medical Terminology course and their overall score on the AAMA certification exam or any of the specific sections of the AAMA certification exam. However, when consideration is given to the time elapsed between completing the Medical Terminology course and attempting the AAMA certification exam for the first time, a moderately positive correlation exists if the test is taken prior to 15 months after completing the Medical Terminology course.

Chapter V: Discussion, Conclusion, and Recommendations

This study analyzed the relationship between student knowledge of medical terminology and successful completion of the AAMA credentialing exam for medical assistants. The research design was non-experimental; a quantitative study using historical data. Certification exam scores were obtained from the AAMA via private login. All other data was obtained from the college's in-house records requiring password access.

A correlation coefficient was determined between the Medical Terminology final course grade and each of the three individual section scores of the certification exam, as well as the final score of the certification exam for an examinee's first attempt. To identify if there was a stronger correlation between completing the Medical Terminology course and attempting the AAMA certification exam within a specific time frame, additional analysis was performed. A correlation coefficient was determined between the Medical Terminology final course grade and final AAMA exam score when the certification exam was completed within 15 months after completing the Medical Terminology course, and again when the certification exam was completed 16 or more months after completing the Medical Terminology course.

Individual section scores and the final score on the initial attempt of the AAMA certification exam were only weakly correlated with one's final grade in the Medical Terminology course. However, consideration of the number of months elapsed after completing the Medical Terminology course and taking the certification exam did demonstrate a difference in the strength of the correlation. A moderately strong relationship, $r(53) = .50$, $p = .01$ (2-tailed), exists between the final score on the AAMA certification exam and the final course grade in Medical Terminology when the certification exam is taken within 15 months after completing the Medical Terminology course.

Discussion

Medical terminology is the required language for any healthcare professional, including medical assistants. In order to effectively communicate as a healthcare team, each member of the team must understand and utilize medical terminology appropriately. Medical assistants are a vital part of the healthcare team and therefore are required to communicate using appropriate medical terminology. During medical assistant program courses, students apply medical terminology learned on a routine basis. Course assessments, such as discussion board assignments, skills demonstrations, and quizzes, require the student to communicate using appropriate terminology. Knowledge of medical terminology is abundant when utilized on a weekly basis in the classroom. Successful completion of the AAMA certification exam designates one as a Certified Medical Assistant, a voluntary credential of distinction.

While there are 200 questions on the AAMA certification exam divided into three content categories, knowledge of medical terminology is necessary to answer questions in each category. No single section of the exam tests only medical terminology; rather, knowledge of medical terminology is applied throughout the certification exam. Given this information, it’s appropriate to conclude that an examinee’s individual section scores are not determined solely by the final grade received in a Medical Terminology course. To the same extent, the examinee’s final score on the certification exam also is not solely impacted by a grade received in a single course of an allied health program. The first research question looked at the relationship between course grade and final score on the certification exam. The next three research questions looked at the individual section scores of the AAMA certification exam independently. Not surprising, the Clinical section score was found to be the most related to the Medical Terminology final course grade, although a weak positive correlation. This section of the certification exam tests content related to patient interaction. In a clinical setting, patient interaction requires an understanding of medical terminology to effectively communicate with the patients about their health care.

The final research question attempted to identify if the number of months between completing the Medical Terminology course and the certification exam were related. Does a relationship exist if more time passes after completing the course? A moderately strong relationship identifies that time is important.

This researcher was surprised that a stronger relationship did not exist between the course grade and any section score or final score of the certification exam. Perhaps the final exam score in the Medical Terminology course, instead of the final course grade, may show a stronger relationship to the final score on the AAMA certification exam. The final exam score may be a better indicator of the level of understanding medical terminology for students than a course grade that includes assessment of additional course activities.

Conclusions

This study confirms that knowledge of medical terminology is necessary in order to successfully complete the certification exam for medical assistants offered by the AAMA. While completion of the Medical Terminology course itself does not determine one's potential for certification success, regularly communicating using medical terminology better prepares a program graduate for success. Furthermore, regular communication utilizing medical terminology takes place during the core skills courses of the program in the first and/or second semester of the program. Upon completion of the program, a graduate who accepts employment as a medical assistant in a primary care clinic will also regularly use medical terminology to the greatest extent. A full-time student who completes the program in 12 months and attempts the AAMA certification exam within three months after graduation may be most prepared for certification exam success and obtainment of the Certified Medical Assistant credential. This represents the 15-month time frame with the moderately strong positive correlation.

Recommendations

This non-experimental study was designed to look at data trends from a single technical college in the state of Wisconsin. As a result of the findings of this study, the following recommendations are made:

- Repeating this study using the Medical Terminology final exam score rather than the final course grade may be beneficial. The final exam score may be a better indicator of the level of understanding medical terminology for students than a course grade that includes assessment of additional course activities.
- With the knowledge that time is an important factor in determining a Medical Assistant program graduate’s certification success, it would be beneficial for Medical Assistant programs to include AAMA certification exam preparation measures near the end of the program so graduates feel prepared to sit for the certification exam shortly after completing the program. Assisting students and graduates with determining the exam preparation method that is best suited for the individual is a step that the Medical Assistant program can take to help prepare program graduates for certification success.
- Future research could give consideration to the modality by which the Medical Terminology course was delivered. Potential modalities include in-person at the college campus, online, or in-person at a local high school as part of a dual credit offering, which is available in the state of Wisconsin. One should recognize that cognition of medical terminology is likely enhanced through direct dialogue during

the learning process. Repetition of communication using medical terminology strengthens cognition of the content.

- Additional research could also be performed through expanding the number of study participants. Data could be collected from more than one of the technical colleges in Wisconsin. Since technical colleges in the state of Wisconsin use state-aligned curriculum for the Medical Assistant program, a larger sample size from more than one of the technical colleges could accurately allow transferability of results from the expanded sample size. Variations in content delivery and design, instructor facilitation, and assessment would potentially be less significant with a larger sample size.
- Further research expanding the categories related to amount of time elapsed between completing the Medical Terminology course and the first attempt of the AAMA certification exam would be beneficial. This study looked at only two timeframes: 15 months or less and 16 or more months. Study participants completed the course and the certification exam in a time frame ranging from five months to 409 months. The strength of the relationship that exists between time intervals could provide valuable information for when to encourage students to test.
- Lastly, it’s noteworthy to identify that the AAMA implemented changes to the content outline for their certification exam effective July 15, 2021. No data in this study were impacted by the change to the content outline. The change notably impacted the number of exam questions for the three different content sections. The change in the number of exam questions from each section is enough to recognize that an examinee’s score related to their knowledge of medical terminology could be

positively or negatively impacted. It would be worthwhile to repeat this study with similar data from matching years after implementation of the new content outline in July 2021.

References

American Association of Medical Assistants. (n.d.-a). *CMA (AAMA) exam: About the exam*. Retrieved February 6, 2021, from https://www.aama-ntl.org/cma-aama-exam/about

American Association of Medical Assistants. (n.d.-b). *History: 60 years of caring*. https://www.aama-ntl.org/about/history/60-years-of-caring#began

American Association of Medical Assistants. (n.d.-c). *Medical assisting: What is a CMA(AAMA)?* https://www.aama-ntl.org/medical-assisting/what-is-a-cma

American Association of Medical Assistants. (n.d.-d). *Medical assisting: What is a medical assistant?* https://www.aama-ntl.org/medical-assisting/what-is-a-medical-assistant

American Association of Medical Assistants. (2013, February). *The CMA (AAMA) credential: Rise above the crowd*. https://www.aama-ntl.org/docs/default-source/about-the-profession-and-credential/cma-cred-rise-above.pdf?sfvrsn=6

American Association of Medical Assistants. (2020a). *AAMA 2018-2019 occupational analysis of medical assistants*. https://www.aama-ntl.org/docs/default-source/about-the-profession-and-credential/oa.pdf?sfvrsn=13

American Medical Technologists. (n.d.). *Registered medical assistant (RMA) certification examination competencies and examination specifications*. http://www.americanmedtech.org/Portals/0/PDF/Get%20Cert/Prepare%20for%20Exam/RMA-Content.pdf

Anjur, S., Brennan, N., & Saiyed, S. (2020, December). *Introduction to analyzing and evaluating medical terminology*. Illinois CTE Innovative Curriculum Resources. https://digitalcommons.imsa.edu/cgi/viewcontent.cgi?article=1001&context=books

Bayliss, J., Thomas, R. M., & Eifert-Mangine, M. (2017). Pilot study: What measures predict first time pass rate on the national physical therapy examination? *Internet Journal of Allied Health Sciences and Practice*, *15*(4), Article 1. https://nsuworks.nova.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1693&context=ijahsp/

Carter, L. M., & Rukholm, E. (2008). A study of critical thinking, teacher-student interaction, and discipline-specific writing in an online educational setting for registered nurses. *The Journal of Continuing Education in Nursing*, *39*(3), 133-138. https://doi.org/10.3928/00220124-20080301-03

Commission on Accreditation of Allied Health Education Programs. (n.d.). *Glossary of accreditation terms*. https://www.caahep.org/accreditation/accreditation-glossary

Condon, J. V., & Barefield, A. C. (2016). Predicting professional examination outcomes: A case of the Registered Health Information Administration certification exam. *Journal of Allied Health*, *45*(4), 267-273. https://www.researchgate.net/publication/314350728

Dean-Jones, L. A. (1998). Teaching medical terminology as a classics course. *The Classical Journal*, *93*(3), 290-296. https://www.jstor.org/stable/3298183

Horsburgh, J., & Ippolito, K. (2018). A skill to be worked at: Using social learning theory to explore the process of learning from role models in clinical settings. *BMC Medical Education*, *18*(1), Article 156. https://doi.org/10.1186/s12909-018-1251-x

Kurowski-Burt, A. L., Woods, S., Daily, S. M., Lilly, C. L., Scaife, B., & Davis, D. (2020). Brief report: Predicting student success on the National Board for Certification in Occupational Therapy examination. *American Journal of Occupational Therapy*, *74*(4), 7404345020p1-7404345020p10. https://doi.org/10.5014/ajot.2020.037622

Laerd Statistics. (n.d.). *Descriptive and inferential statistics*. https://statistics.laerd.com/statistical-guides/descriptive-inferential-statistics.php

Langtree, E. M., Razak, A., & Haffejee, F. (2018). The effect of speaking English as a second language on the study of anatomy and physiology in the nursing programme. *South African Journal of Higher Education*, *32*(1), 129-139. https://doi.org/10.20853/32-1-793

Lum, L., Alqazli, M., & Englander, K. (2018). Academic literacy requirements of health professions programs: Challenges for ESL students. *TESL Canada Journal*, *35*(1), 1-28. https://doi.org/10.18806/tesl.v35i1.1282

McLaughlin, J. E., Wolcott, M. D., Hubbard, D., Umstead, K., & Rider, T. R. (2019). A qualitative review of the design thinking framework in health professions education. *BMC Medical Education*, *19*(1), Article 98. https://doi.org/10.1186/s12909-019-1528-8

Neville, L., & Migley, R. (2008). Tips for learning part 2: Medical terminology. *British Journal of Healthcare Assistants*, *2*(6), 297-300. https://doi.org/10.12968/bjha.2008.2.6.29550

Ortega, P., & Prada, J. (2020). Words matter: Translanguaging in medical communication skills training. *Perspectives on Medical Education*, *9*(4), 251-255. https://doi.org/10.1007/s40037-020-00595-z

Phillips, J. H. (1981). The medical terminology course—its necessity and the solution. *The Classical Outlook*, *58*(3), 65-66. http://www.jstor.org/stable/43934328

Ryan, M. G. (2011). Relationship between students' reading ability and their success in medical terminology at a two-year college. *NADE Digest*, *5*(3), 51-59.

Wang, Y.-H., Kao, P.-F., & Liao, H.-C. (2016). The relationship of vocabulary learning strategies and self-efficacy with medical English and terminology. *Perceptual and Motor Skills*, *122*(1), 47-66. https://doi.org/10.1177/0031512516628377

Appendix A

Medical Assistant Graduates With Grade and Final Exam Score

Exam date	AAMA final score	Medical Terminology final grade and grade points	Status
1/8/2016	523	B (3)	Passed
1/12/2016	647	A- (3.67)	Passed
1/15/2016	596	A (4)	Passed
1/19/2016	526	A- (3.67)	Passed
1/21/2016	487	B+ (3.33)	Passed
1/28/2016	357	C (2)	Failed
1/28/2016	579	C+ (2.33)	Passed
2/6/2016	415	B+ (3.33)	Failed
2/17/2016	481	A (4)	Passed
2/17/2016	730	B+ (3.33)	Passed
2/19/2016	749	C (2)	Passed
2/27/2016	389	B+ (3.33)	Failed
3/4/2016	630	A (4)	Passed
3/12/2016	481	C (2)	Passed
3/26/2016	519	A (4)	Passed
3/29/2016	502	A- (3.67)	Passed
4/6/2016	421	B+ (3.33)	Failed
4/28/2016	545	A- (3.67)	Passed
5/9/2016	762	A- (3.67)	Passed
5/24/2016	326	C (2)	Failed
5/24/2016	489	A- (3.67)	Passed
5/28/2016	342	C (2)	Failed
6/2/2016	498	A- (3.67)	Passed
6/3/2016	347	A (4)	Failed
6/4/2016	323	A (4)	Failed
6/7/2016	645	A (4)	Passed
6/24/2016	623	A (4)	Passed
6/24/2016	691	A- (3.67)	Passed
7/30/2016	513	C (2)	Passed
7/30/2016	574	A- (3.67)	Passed
8/4/2016	491	A (4)	Passed
9/19/2016	489	A (4)	Passed
10/15/2016	428	B (3)	Failed
11/14/2016	445	B (3)	Passed
12/19/2016	625	A (4)	Passed
1/3/2017	302	B (3)	Failed
1/9/2017	447	A (4)	Passed
1/12/2017	464	A (4)	Passed
1/13/2017	543	C+ (2.33)	Passed

Exam date	AAMA final score	Medical Terminology final grade and grade points	Status
1/20/2017	336	B- (2.67)	Failed
1/23/2017	500	A (4)	Passed
2/3/2017	670	A (4)	Passed
2/4/2017	477	C (2)	Passed
2/6/2017	415	C+ (2.33)	Failed
2/18/2017	568	A (4)	Passed
2/25/2017	585	B (3)	Passed
3/4/2017	394	A (4)	Failed
3/16/2017	506	A (4)	Passed
3/24/2017	306	B+ (3.33)	Failed
3/25/2017	481	A (4)	Passed
5/27/2017	387	A (4)	Failed
5/30/2017	668	A (4)	Passed
5/31/2017	583	B+ (3.33)	Passed
6/5/2017	655	B- (2.67)	Passed
6/6/2017	543	B (3)	Passed
6/14/2017	562	B+ (3.33)	Passed
6/19/2017	508	B- (2.67)	Passed
6/20/2017	445	A- (3.67)	Passed
7/5/2017	430	A (4)	Passed
7/12/2017	509	C+ (2.33)	Passed
7/14/2017	594	A (4)	Passed
7/18/2017	425	A (4)	Failed
7/25/2017	313	C+ (2.33)	Failed
7/29/2017	457	C+ (2.33)	Passed
7/29/2017	506	C (2)	Passed
8/3/2017	455	B (3)	Passed
8/21/2017	511	C (2)	Passed
9/11/2017	658	B (3)	Passed
10/2/2017	523	A- (3.67)	Passed
1/4/2018	426	B (3)	Failed
1/4/2018	617	A- (3.67)	Passed
1/10/2018	457	B- (2.67)	Passed
1/26/2018	370	B (3)	Failed
1/26/2018	406	B- (2.67)	Failed
1/27/2018	572	C+ (2.33)	Passed
2/9/2018	481	A- (3.67)	Passed
2/17/2018	309	B (3)	Failed
2/23/2018	447	B+ (3.33)	Passed
2/24/2018	530	B- (2.67)	Passed
3/17/2018	500	A (4)	Passed
3/30/2018	491	C+ (2.33)	Passed
3/31/2018	406	B+ (3.33)	Failed

Exam date	AAMA final score	Medical Terminology final grade and grade points	Status
3/31/2018	519	A (4)	Passed
5/19/2018	596	A (4)	Passed
5/26/2018	555	B (3)	Passed
5/30/2018	200	C (2)	Failed
5/30/2018	408	A- (3.67)	Failed
5/30/2018	609	A- (3.67)	Passed
6/2/2018	462	B (3)	Passed
6/2/2018	604	B+ (3.33)	Passed
6/2/2018	643	A- (3.67)	Passed
6/4/2018	555	A (4)	Passed
6/18/2018	592	A (4)	Passed
6/19/2018	575	C (2)	Passed
6/23/2018	458	A- (3.67)	Passed
7/2/2018	528	C (2)	Passed
7/6/2018	506	C (2)	Passed
7/6/2018	640	B- (2.67)	Passed
7/17/2018	668	A (4)	Passed
7/30/2018	362	B (3)	Failed
8/6/2018	366	A (4)	Failed
10/3/2018	396	B (3)	Failed
10/19/2018	666	B+ (3.33)	Passed
11/2/2018	266	B (3)	Failed
11/17/2018	398	A- (3.67)	Failed
12/21/2018	581	B (3)	Passed
12/21/2018	725	A (4)	Passed
12/22/2018	545	B+ (3.33)	Passed
12/28/2018	470	C (2)	Passed
12/28/2018	553	B (3)	Passed
12/31/2018	547	A (4)	Passed
1/12/2019	628	A- (3.67)	Passed
1/26/2019	711	A (4)	Passed
1/26/2019	758	A (4)	Passed
1/29/2019	325	B (3)	Failed
1/29/2019	374	B (3)	Failed
1/29/2019	572	A (4)	Passed
2/11/2019	392	B+ (3.33)	Failed
2/11/2019	557	A- (3.67)	Passed
6/1/2019	692	A- (3.67)	Passed
6/5/2019	611	A (4)	Passed
6/14/2019	598	A (4)	Passed
6/19/2019	655	B (3)	Passed
6/20/2019	466	A (4)	Passed
6/22/2019	489	C (2)	Passed

Exam date	AAMA final score	Medical Terminology final grade and grade points	Status
6/26/2019	521	C+ (2.33)	Passed
6/27/2019	598	A- (3.67)	Passed
6/27/2019	651	A (4)	Passed
6/29/2019	513	A- (3.67)	Passed
6/29/2019	526	A (4)	Passed
7/5/2019	572	A- (3.67)	Passed
7/29/2019	683	A (4)	Passed
8/17/2019	370	B+ (3.33)	Failed
8/31/2019	683	A (4)	Passed
1/4/2020	777	B (3)	Passed
2/7/2020	460	C (2)	Passed
2/21/2020	645	B (3)	Passed
2/22/2020	640	A (4)	Passed
6/26/2020	543	A (4)	Passed
6/26/2020	555	A (4)	Passed
6/27/2020	455	A (4)	Passed
7/15/2020	481	A (4)	Passed
7/21/2020	436	A (4)	Passed
7/24/2020	338	C (2)	Failed
9/18/2020	575	A (4)	Passed
9/25/2020	419	A- (3.67)	Failed
11/7/2020	292	B (3)	Failed
12/14/2020	358	A- (3.67)	Failed
12/19/2020	613	B (3)	Passed
1/4/2021	679	B (3)	Passed
1/30/2021	323	C+ (2.33)	Failed
2/8/2021	455	A (4)	Passed
3/13/2021	508	A- (3.67)	Passed
5/8/2021	645	B- (2.67)	Passed
5/15/2021	592	A- (3.67)	Passed
5/21/2021	391	B (3)	Failed
5/26/2021	506	B (3)	Passed
6/1/2021	574	A- (3.67)	Passed
6/16/2021	555	A- (3.67)	Passed
6/18/2021	364	C+ (2.33)	Failed
6/23/2021	489	B+ (3.33)	Passed
7/3/2021	289	B (3)	Failed

Appendix B

Medical Assistant Graduates With Grade and General Section Score

Exam date	General section score	Medical Terminology final grade and grade points
1/8/2016	44	B (3)
1/12/2016	73	A- (3.67)
1/15/2016	90	A (4)
1/19/2016	56	A- (3.67)
1/21/2016	83	B+ (3.33)
1/28/2016	20	C (2)
1/28/2016	77	C+ (2.33)
2/6/2016	10	B+ (3.33)
2/17/2016	52	A (4)
2/17/2016	83	B+ (3.33)
2/19/2016	93	C (2)
2/27/2016	33	B+ (3.33)
3/4/2016	98	A (4)
3/12/2016	41	C (2)
3/26/2016	61	A (4)
3/29/2016	73	A- (3.67)
4/6/2016	13	B+ (3.33)
4/28/2016	68	A- (3.67)
5/9/2016	92	A- (3.67)
5/24/2016	9	C (2)
5/24/2016	49	A- (3.67)
5/28/2016	3	C (2)
6/2/2016	49	A- (3.67)
6/3/2016	3	A (4)
6/4/2016	14	A (4)
6/7/2016	77	A (4)
6/24/2016	91	A (4)
6/24/2016	81	A- (3.67)
7/30/2016	71	C (2)
7/30/2016	69	A- (3.67)
8/4/2016	49	A (4)
9/19/2016	47	A (4)
10/15/2016	33	B (3)
11/14/2016	45	B (3)
12/19/2016	89	A (4)
1/3/2017	5	B (3)
1/9/2017	15	A (4)
1/12/2017	33	A (4)
1/13/2017	59	C+ (2.33)

Exam date	General section score	Medical Terminology final grade and grade points
1/20/2017	15	B- (2.67)
1/23/2017	47	A (4)
2/3/2017	86	A (4)
2/4/2017	60	C (2)
2/6/2017	35	C+ (2.33)
2/18/2017	64	A (4)
2/25/2017	86	B (3)
3/4/2017	21	A (4)
3/16/2017	74	A (4)
3/24/2017	8	B+ (3.33)
3/25/2017	45	A (4)
5/27/2017	8	A (4)
5/30/2017	91	A (4)
5/31/2017	79	B+ (3.33)
6/5/2017	82	B- (2.67)
6/6/2017	63	B (3)
6/14/2017	79	B+ (3.33)
6/19/2017	49	B- (2.67)
6/20/2017	26	A- (3.67)
7/5/2017	15	A (4)
7/12/2017	60	C+ (2.33)
7/14/2017	74	A (4)
7/18/2017	13	A (4)
7/25/2017	12	C+ (2.33)
7/29/2017	55	C+ (2.33)
7/29/2017	37	C (2)
8/3/2017	54	B (3)
8/21/2017	81	C (2)
9/11/2017	90	B (3)
10/2/2017	76	A- (3.67)
1/4/2018	28	B (3)
1/4/2018	86	A- (3.67)
1/10/2018	37	B- (2.67)
1/26/2018	8	B (3)
1/26/2018	37	B- (2.67)
1/27/2018	71	C+ (2.33)
2/9/2018	20	A- (3.67)
2/17/2018	8	B (3)
2/23/2018	27	B+ (3.33)
2/24/2018	56	B- (2.67)
3/17/2018	49	A (4)
3/30/2018	43	C+ (2.33)
3/31/2018	24	B+ (3.33)

Exam date	General section score	Medical Terminology final grade and grade points
3/31/2018	45	A (4)
5/19/2018	91	A (4)
5/26/2018	94	B (3)
5/30/2018	0	C (2)
5/30/2018	25	A- (3.67)
5/30/2018	86	A- (3.67)
6/2/2018	33	B (3)
6/2/2018	76	B+ (3.33)
6/2/2018	86	A- (3.67)
6/4/2018	71	A (4)
6/18/2018	66	A (4)
6/19/2018	41	C (2)
6/23/2018	38	A- (3.67)
7/2/2018	74	C (2)
7/6/2018	47	C (2)
7/6/2018	76	B- (2.67)
7/17/2018	93	A (4)
7/30/2018	10	B (3)
8/6/2018	14	A (4)
10/3/2018	15	B (3)
10/19/2018	85	B+ (3.33)
11/2/2018	15	B (3)
11/17/2018	20	A- (3.67)
12/21/2018	85	B (3)
12/21/2018	96	A (4)
12/22/2018	42	B+ (3.33)
12/28/2018	55	C (2)
12/28/2018	89	B (3)
12/31/2018	60	A (4)
1/12/2019	97	A- (3.67)
1/26/2019	81	A (4)
1/26/2019	85	A (4)
1/29/2019	13	B (3)
1/29/2019	20	B (3)
1/29/2019	71	A (4)
2/11/2019	43	B+ (3.33)
2/11/2019	65	A- (3.67)
6/1/2019	81	A- (3.67)
6/5/2019	85	A (4)
6/14/2019	81	A (4)
6/19/2019	85	B (3)
6/20/2019	53	A (4)
6/22/2019	58	C (2)

Exam date	General section score	Medical Terminology final grade and grade points
6/26/2019	58	C+ (2.33)
6/27/2019	85	A- (3.67)
6/27/2019	95	A (4)
6/29/2019	54	A- (3.67)
6/29/2019	58	A (4)
7/5/2019	60	A- (3.67)
7/29/2019	91	A (4)
8/17/2019	23	B+ (3.33)
8/31/2019	96	A (4)
1/4/2020	95	B (3)
2/7/2020	60	C (2)
2/21/2020	92	B (3)
2/22/2020	76	A (4)
6/26/2020	67	A (4)
6/26/2020	51	A (4)
6/27/2020	46	A (4)
7/15/2020	45	A (4)
7/21/2020	76	A (4)
7/24/2020	12	C (2)
9/18/2020	63	A (4)
9/25/2020	48	A- (3.67)
11/7/2020	17	B (3)
12/14/2020	39	A- (3.67)
12/19/2020	88	B (3)
1/4/2021	85	B (3)
1/30/2021	10	C+ (2.33)
2/8/2021	12	A (4)
3/13/2021	48	A- (3.67)
5/8/2021	79	B- (2.67)
5/15/2021	64	A- (3.67)
5/21/2021	10	B (3)
5/26/2021	80	B (3)
6/1/2021	88	A- (3.67)
6/16/2021	58	A- (3.67)
6/18/2021	20	C+ (2.33)
6/23/2021	53	B+ (3.33)
7/3/2021	18	B (3)

Appendix C

Medical Assistant Graduates With Grade and Administrative Section Score

Exam date	Administrative section score	Medical Terminology final grade and grade points
1/8/2016	51	B (3)
1/12/2016	80	A- (3.67)
1/15/2016	75	A (4)
1/19/2016	40	A- (3.67)
1/21/2016	52	B+ (3.33)
1/28/2016	14	C (2)
1/28/2016	35	C+ (2.33)
2/6/2016	24	B+ (3.33)
2/17/2016	65	A (4)
2/17/2016	96	B+ (3.33)
2/19/2016	88	C (2)
2/27/2016	6	B+ (3.33)
3/4/2016	72	A (4)
3/12/2016	61	C (2)
3/26/2016	58	A (4)
3/29/2016	11	A- (3.67)
4/6/2016	17	B+ (3.33)
4/28/2016	20	A- (3.67)
5/9/2016	96	A- (3.67)
5/24/2016	28	C (2)
5/24/2016	24	A- (3.67)
5/28/2016	7	C (2)
6/2/2016	24	A- (3.67)
6/3/2016	7	A (4)
6/4/2016	3	A (4)
6/7/2016	87	A (4)
6/24/2016	84	A (4)
6/24/2016	66	A- (3.67)
7/30/2016	53	C (2)
7/30/2016	59	A- (3.67)
8/4/2016	36	A (4)
9/19/2016	47	A (4)
10/15/2016	31	B (3)
11/14/2016	31	B (3)
12/19/2016	87	A (4)
1/3/2017	11	B (3)
1/9/2017	15	A (4)
1/12/2017	47	A (4)
1/13/2017	53	C+ (2.33)

Exam date	Administrative section score	Medical Terminology final grade and grade points
1/20/2017	13	B- (2.67)
1/23/2017	53	A (4)
2/3/2017	87	A (4)
2/4/2017	20	C (2)
2/6/2017	25	C+ (2.33)
2/18/2017	53	A (4)
2/25/2017	46	B (3)
3/4/2017	18	A (4)
3/16/2017	65	A (4)
3/24/2017	11	B+ (3.33)
3/25/2017	38	A (4)
5/27/2017	17	A (4)
5/30/2017	76	A (4)
5/31/2017	42	B+ (3.33)
6/5/2017	97	B- (2.67)
6/6/2017	28	B (3)
6/14/2017	65	B+ (3.33)
6/19/2017	47	B- (2.67)
6/20/2017	38	A- (3.67)
7/5/2017	8	A (4)
7/12/2017	35	C+ (2.33)
7/14/2017	47	A (4)
7/18/2017	24	A (4)
7/25/2017	0	C+ (2.33)
7/29/2017	39	C+ (2.33)
7/29/2017	79	C (2)
8/3/2017	27	B (3)
8/21/2017	32	C (2)
9/11/2017	80	B (3)
10/2/2017	69	A- (3.67)
1/4/2018	43	B (3)
1/4/2018	74	A- (3.67)
1/10/2018	29	B- (2.67)
1/26/2018	19	B- (2.67)
1/26/2018	11	B (3)
1/27/2018	79	C+ (2.33)
2/9/2018	50	A- (3.67)
2/17/2018	32	B (3)
2/23/2018	50	B+ (3.33)
2/24/2018	49	B- (2.67)
3/17/2018	66	A (4)
3/30/2018	43	C+ (2.33)
3/31/2018	27	B+ (3.33)

Exam date	Administrative section score	Medical Terminology final grade and grade points
3/31/2018	49	A (4)
5/19/2018	37	A (4)
5/26/2018	61	B (3)
5/30/2018	0	C (2)
5/30/2018	23	A- (3.67)
5/30/2018	43	A- (3.67)
6/2/2018	49	B (3)
6/2/2018	97	B+ (3.33)
6/2/2018	69	A- (3.67)
6/4/2018	61	A (4)
6/18/2018	56	A (4)
6/19/2018	69	C (2)
6/23/2018	49	A- (3.67)
7/2/2018	34	C (2)
7/6/2018	44	C (2)
7/6/2018	97	B- (2.67)
7/17/2018	71	A (4)
7/30/2018	24	B (3)
8/6/2018	22	A (4)
10/3/2018	13	B (3)
10/19/2018	84	B+ (3.33)
11/2/2018	3	B (3)
11/17/2018	29	A- (3.67)
12/21/2018	74	B (3)
12/21/2018	89	A (4)
12/22/2018	82	B+ (3.33)
12/28/2018	21	C (2)
12/28/2018	21	B (3)
12/31/2018	46	A (4)
1/12/2019	46	A- (3.67)
1/26/2019	98	A (4)
1/26/2019	79	A (4)
1/29/2019	17	B (3)
1/29/2019	25	B (3)
1/29/2019	66	A (4)
2/11/2019	26	B+ (3.33)
2/11/2019	67	A- (3.67)
6/1/2019	80	A- (3.67)
6/5/2019	52	A (4)
6/14/2019	79	A (4)
6/19/2019	84	B (3)
6/20/2019	21	A (4)
6/22/2019	26	C (2)

Exam date	Administrative section score	Medical Terminology final grade and grade points
6/26/2019	33	C+ (2.33)
6/27/2019	58	A- (3.67)
6/27/2019	67	A (4)
6/29/2019	64	A (4)
6/29/2019	41	A- (3.67)
7/5/2019	74	A- (3.67)
7/29/2019	89	A (4)
8/17/2019	16	B+ (3.33)
8/31/2019	76	A (4)
1/4/2020	98	B (3)
2/7/2020	18	C (2)
2/21/2020	80	B (3)
2/22/2020	75	A (4)
6/26/2020	60	A (4)
6/26/2020	60	A (4)
6/27/2020	33	A (4)
7/15/2020	26	A (4)
7/21/2020	3	A (4)
7/24/2020	7	C (2)
9/18/2020	79	A (4)
9/25/2020	39	A- (3.67)
11/7/2020	11	B (3)
12/14/2020	14	A- (3.67)
12/19/2020	83	B (3)
1/4/2021	83	B (3)
1/30/2021	7	C+ (2.33)
2/8/2021	52	A (4)
3/13/2021	30	A- (3.67)
5/8/2021	83	B- (2.67)
5/15/2021	88	A- (3.67)
5/21/2021	46	B (3)
5/26/2021	62	B (3)
6/1/2021	68	A- (3.67)
6/16/2021	83	A- (3.67)
6/18/2021	9	C+ (2.33)
6/23/2021	55	B+ (3.33)
7/3/2021	8	B (3)

Appendix D

Medical Assistant Graduates With Grade and Clinical Section Score

Exam date	Clinical section score	Medical Terminology final grade and grade points
1/8/2016	71	B (3)
1/12/2016	93	A- (3.67)
1/15/2016	67	A (4)
1/19/2016	72	A- (3.67)
1/21/2016	28	B+ (3.33)
1/28/2016	17	C (2)
1/28/2016	89	C+ (2.33)
2/6/2016	47	B+ (3.33)
2/17/2016	35	A (4)
2/17/2016	97	B+ (3.33)
2/19/2016	99	C (2)
2/27/2016	31	B+ (3.33)
3/4/2016	76	A (4)
3/12/2016	42	C (2)
3/26/2016	54	A (4)
3/29/2016	71	A- (3.67)
4/6/2016	53	B+ (3.33)
4/28/2016	86	A- (3.67)
5/9/2016	98	A- (3.67)
5/24/2016	8	C (2)
5/24/2016	65	A- (3.67)
5/28/2016	34	C (2)
6/2/2016	71	A- (3.67)
6/3/2016	39	A (4)
6/4/2016	17	A (4)
6/7/2016	89	A (4)
6/24/2016	75	A (4)
6/24/2016	99	A- (3.67)
7/30/2016	46	C (2)
7/30/2016	80	A- (3.67)
8/4/2016	57	A (4)
9/19/2016	50	A (4)
10/15/2016	33	B (3)
11/14/2016	35	B (3)
12/19/2016	74	A (4)
1/3/2017	11	B (3)
1/9/2017	73	A (4)
1/12/2017	43	A (4)
1/13/2017	74	C+ (2.33)

Exam date	Clinical section score	Medical Terminology final grade and grade points
1/20/2017	12	B- (2.67)
1/23/2017	53	A (4)
2/3/2017	93	A (4)
2/4/2017	50	C (2)
2/6/2017	28	C+ (2.33)
2/18/2017	83	A (4)
2/25/2017	81	B (3)
3/4/2017	30	A (4)
3/16/2017	35	A (4)
3/24/2017	9	B+ (3.33)
3/25/2017	50	A (4)
5/27/2017	40	A (4)
5/30/2017	93	A (4)
5/31/2017	85	B+ (3.33)
6/5/2017	81	B- (2.67)
6/6/2017	83	B (3)
6/14/2017	63	B+ (3.33)
6/19/2017	60	B- (2.67)
6/20/2017	41	A- (3.67)
7/5/2017	67	A (4)
7/12/2017	61	C+ (2.33)
7/14/2017	90	A (4)
7/18/2017	50	A (4)
7/25/2017	24	C+ (2.33)
7/29/2017	33	C+ (2.33)
7/29/2017	49	C (2)
8/3/2017	38	B (3)
8/21/2017	56	C (2)
9/11/2017	91	B (3)
10/2/2017	43	A- (3.67)
1/4/2018	28	B (3)
1/4/2018	81	A- (3.67)
1/10/2018	47	B- (2.67)
1/26/2018	25	B- (2.67)
1/26/2018	35	B (3)
1/27/2018	69	C+ (2.33)
2/9/2018	65	A- (3.67)
2/17/2018	5	B (3)
2/23/2018	37	B+ (3.33)
2/24/2018	69	B- (2.67)
3/17/2018	47	A (4)
3/30/2018	56	C+ (2.33)
3/31/2018	27	B+ (3.33)

Exam date	Clinical section score	Medical Terminology final grade and grade points
3/31/2018	69	A (4)
5/19/2018	88	A (4)
5/26/2018	52	B (3)
5/30/2018	0	C (2)
5/30/2018	31	A- (3.67)
5/30/2018	91	A- (3.67)
6/2/2018	43	B (3)
6/2/2018	66	B+ (3.33)
6/2/2018	91	A- (3.67)
6/4/2018	69	A (4)
6/18/2018	91	A (4)
6/19/2018	88	C (2)
6/23/2018	37	A- (3.67)
7/2/2018	66	C (2)
7/6/2018	62	C (2)
7/6/2018	81	B- (2.67)
7/17/2018	95	A (4)
7/30/2018	23	B (3)
8/6/2018	22	A (4)
10/3/2018	44	B (3)
10/19/2018	94	B+ (3.33)
11/2/2018	5	B (3)
11/17/2018	28	A- (3.67)
12/21/2018	68	B (3)
12/21/2018	96	A (4)
12/22/2018	69	B+ (3.33)
12/28/2018	55	C (2)
12/28/2018	80	B (3)
12/31/2018	81	A (4)
1/12/2019	91	A- (3.67)
1/26/2019	99	A (4)
1/26/2019	100	A (4)
1/29/2019	10	B (3)
1/29/2019	20	B (3)
1/29/2019	76	A (4)
2/11/2019	17	B+ (3.33)
2/11/2019	72	A- (3.67)
6/1/2019	99	A- (3.67)
6/5/2019	90	A (4)
6/14/2019	75	A (4)
6/19/2019	90	B (3)
6/20/2019	53	A (4)
6/22/2019	58	C (2)

Exam date	Clinical section score	Medical Terminology final grade and grade points
6/26/2019	76	C+ (2.33)
6/27/2019	82	A- (3.67)
6/27/2019	89	A (4)
6/29/2019	59	A (4)
6/29/2019	68	A- (3.67)
7/5/2019	78	A- (3.67)
7/29/2019	88	A (4)
8/17/2019	21	B+ (3.33)
8/31/2019	90	A (4)
1/4/2020	97	B (3)
2/7/2020	46	C (2)
2/21/2020	81	B (3)
2/22/2020	92	A (4)
6/26/2020	63	A (4)
6/26/2020	79	A (4)
6/27/2020	41	A (4)
7/15/2020	61	A (4)
7/21/2020	42	A (4)
7/24/2020	20	C (2)
9/18/2020	74	A (4)
9/25/2020	18	A- (3.67)
11/7/2020	4	B (3)
12/14/2020	11	A- (3.67)
12/19/2020	74	B (3)
1/4/2021	95	B (3)
1/30/2021	16	C+ (2.33)
2/8/2021	56	A (4)
3/13/2021	73	A- (3.67)
5/8/2021	91	B- (2.67)
5/15/2021	74	A- (3.67)
5/21/2021	24	B (3)
5/26/2021	37	B (3)
6/1/2021	64	A- (3.67)
6/16/2021	63	A- (3.67)
6/18/2021	24	C+ (2.33)
6/23/2021	44	B+ (3.33)
7/3/2021	4	B (3)

Appendix E

Medical Assistant Graduates With Medical Terminology Grade, Final AAMA Score, and Length of Time Between Medical Terminology Course and AAMA Exam

Exam date	AAMA final score	Month/year Medical Terminology completed	Months between finishing Medical Terminology and taking AAMA	Medical Terminology final grade and grade points
1/8/2016	523	12/12	37	B (3)
1/12/2016	647	5/15	8	A- (3.67)
1/15/2016	596	7/14	18	A (4)
1/19/2016	526	12/14	13	A- (3.67)
1/21/2016	487	12/14	13	B+ (3.33)
1/28/2016	357	12/12	37	C (2)
1/28/2016	579	5/14	20	C+ (2.33)
2/6/2016	415	5/15	9	B+ (3.33)
2/17/2016	481	5/14	21	A (4)
2/17/2016	730	5/14	21	B+ (3.33)
2/19/2016	749	8/12	42	C (2)
2/27/2016	389	12/14	14	B+ (3.33)
3/4/2016	630	12/13	27	A (4)
3/12/2016	481	5/14	22	C (2)
3/26/2016	519	12/14	15	A (4)
3/29/2016	502	12/14	15	A- (3.67)
4/6/2016	421	5/14	23	B+ (3.33)
4/28/2016	545	12/12	40	A- (3.67)
5/9/2016	762	5/09	84	A- (3.67)
5/24/2016	326	12/13	29	C (2)
5/24/2016	489	12/15	5	A- (3.67)
5/28/2016	342	5/15	12	C (2)
6/2/2016	498	12/14	18	A- (3.67)
6/3/2016	347	12/14	18	A (4)
6/4/2016	323	5/14	25	A (4)
6/7/2016	645	5/14	25	A (4)
6/24/2016	623	5/13	37	A (4)
6/24/2016	691	5/14	25	A- (3.67)
7/30/2016	513	12/12	43	C (2)
7/30/2016	574	5/15	14	A- (3.67)
8/4/2016	491	12/14	20	A (4)
9/19/2016	489	5/15	16	A (4)
10/15/2016	428	5/15	17	B (3)
11/14/2016	445	5/15	18	B (3)
12/19/2016	625	12/15	12	A (4)

Exam date	AAMA final score	Month/year Medical Terminology completed	Months between finishing Medical Terminology and taking AAMA	Medical Terminology final grade and grade points
1/3/2017	302	12/15	13	B (3)
1/9/2017	447	5/15	20	A (4)
1/12/2017	464	7/15	18	A (4)
1/13/2017	543	12/14	25	C+ (2.33)
1/20/2017	336	12/15	13	B- (2.67)
1/23/2017	500	12/15	13	A (4)
2/3/2017	670	12/15	14	A (4)
2/4/2017	477	12/15	14	C (2)
2/6/2017	415	5/14	33	C+ (2.33)
2/18/2017	568	12/15	14	A (4)
2/25/2017	585	12/14	26	B (3)
3/4/2017	394	5/15	22	A (4)
3/16/2017	506	12/15	15	A (4)
3/24/2017	306	12/15	15	B+ (3.33)
3/25/2017	481	7/15	20	A (4)
5/27/2017	387	12/13	41	A (4)
5/30/2017	668	7/16	10	A (4)
5/31/2017	583	12/16	5	B+ (3.33)
6/5/2017	655	12/08	102	B- (2.67)
6/6/2017	543	12/13	42	B (3)
6/14/2017	562	5/15	25	B+ (3.33)
6/19/2017	508	12/15	18	B- (2.67)
6/20/2017	445	5/15	25	A- (3.67)
7/5/2017	430	5/16	14	A (4)
7/12/2017	509	5/15	26	C+ (2.33)
7/14/2017	594	12/10	79	A (4)
7/18/2017	425	12/15	19	A (4)
7/25/2017	313	5/16	14	C+ (2.33)
7/29/2017	457	5/16	14	C+ (2.33)
7/29/2017	506	5/02	182	C (2)
8/3/2017	455	5/16	15	B (3)
8/21/2017	511	5/10	87	C (2)
9/11/2017	658	12/15	21	B (3)
10/2/2017	523	5/16	17	A- (3.67)
1/4/2018	426	5/16	20	B (3)
1/4/2018	617	5/13	56	A- (3.67)
1/10/2018	457	12/16	13	B- (2.67)
1/26/2018	406	5/16	20	B- (2.67)
1/26/2018	370	12/16	13	B (3)
1/27/2018	572	5/16	20	C+ (2.33)
2/9/2018	481	7/15	31	A- (3.67)

Exam date	AAMA final score	Month/year Medical Terminology completed	Months between finishing Medical Terminology and taking AAMA	Medical Terminology final grade and grade points
2/17/2018	309	5/16	21	B (3)
2/23/2018	447	12/16	14	B+ (3.33)
2/24/2018	530	12/09	98	B- (2.67)
3/17/2018	500	5/13	58	A (4)
3/30/2018	491	12/14	39	C+ (2.33)
3/31/2018	406	5/16	22	B+ (3.33)
3/31/2018	519	12/14	39	A (4)
5/19/2018	596	5/17	12	A (4)
5/26/2018	555	5/14	48	B (3)
5/30/2018	200	5/16	24	C (2)
5/30/2018	408	12/16	17	A- (3.67)
5/30/2018	609	12/14	41	A- (3.67)
6/2/2018	462	7/17	11	B (3)
6/2/2018	604	12/16	18	B+ (3.33)
6/2/2018	643	5/16	25	A- (3.67)
6/4/2018	555	12/14	42	A (4)
6/18/2018	592	5/17	13	A (4)
6/19/2018	575	12/13	54	C (2)
6/23/2018	458	5/17	13	A- (3.67)
7/2/2018	528	12/13	55	C (2)
7/6/2018	506	5/11	91	C (2)
7/6/2018	640	5/17	14	B- (2.67)
7/17/2018	668	12/14	43	A (4)
7/30/2018	362	12/14	43	B (3)
8/6/2018	366	5/17	15	A (4)
10/3/2018	396	5/11	89	B (3)
10/19/2018	666	7/16	27	B+ (3.33)
11/2/2018	266	7/17	16	B (3)
11/17/2018	398	5/17	18	A- (3.67)
12/21/2018	581	5/18	7	B (3)
12/21/2018	725	5/17	19	A (4)
12/22/2018	545	5/17	19	B+ (3.33)
12/28/2018	470	12/10	96	C (2)
12/28/2018	553	12/17	12	B (3)
12/31/2018	547	12/17	12	A (4)
1/12/2019	628	12/12	73	A- (3.67)
1/26/2019	758	7/17	18	A (4)
1/26/2019	711	5/18	8	A (4)
1/29/2019	325	5/18	8	B (3)
1/29/2019	374	5/18	8	B (3)

Exam date	AAMA final score	Month/year Medical Terminology completed	Months between finishing Medical Terminology and taking AAMA	Medical Terminology final grade and grade points
1/29/2019	572	12/17	13	A (4)
2/11/2019	392	12/14	50	B+ (3.33)
2/11/2019	557	12/16	26	A- (3.67)
6/1/2019	692	7/17	23	A- (3.67)
6/5/2019	611	12/18	6	A (4)
6/14/2019	598	12/08	126	A (4)
6/19/2019	655	12/15	42	B (3)
6/20/2019	466	5/18	13	A (4)
6/22/2019	489	5/17	25	C (2)
6/26/2019	521	5/18	13	C+ (2.33)
6/27/2019	598	12/17	18	A- (3.67)
6/27/2019	651	12/18	6	A (4)
6/29/2019	526	5/18	13	A (4)
6/29/2019	513	12/17	18	A- (3.67)
7/5/2019	572	5/18	14	A- (3.67)
7/29/2019	683	5/18	14	A (4)
8/17/2019	370	5/18	15	B+ (3.33)
8/31/2019	683	5/18	15	A (4)
1/4/2020	777	12/85	409	B (3)
2/7/2020	460	12/15	50	C (2)
2/21/2020	645	5/19	9	B (3)
2/22/2020	640	12/17	26	A (4)
6/26/2020	543	12/18	18	A (4)
6/26/2020	555	5/09	133	A (4)
6/27/2020	455	12/18	18	A (4)
7/15/2020	481	5/19	14	A (4)
7/21/2020	436	5/13	86	A (4)
7/24/2020	338	12/18	19	C (2)
9/18/2020	575	5/18	28	A (4)
9/25/2020	419	12/15	57	A- (3.67)
11/7/2020	292	5/18	30	B (3)
12/14/2020	358	12/17	36	A- (3.67)
12/19/2020	613	7/19	17	B (3)
1/4/2021	679	8/00	245	B (3)
1/30/2021	323	5/19	20	C+ (2.33)
2/8/2021	455	5/19	21	A (4)
3/13/2021	508	12/18	27	A- (3.67)
5/8/2021	645	12/11	113	B- (2.67)
5/15/2021	592	5/20	12	A- (3.67)
5/21/2021	391	12/18	29	B (3)

Exam date	AAMA final score	Month/year Medical Terminology completed	Months between finishing Medical Terminology and taking AAMA	Medical Terminology final grade and grade points
5/26/2021	506	12/19	17	B (3)
6/1/2021	574	5/20	13	A- (3.67)
6/16/2021	555	7/19	23	A- (3.67)
6/18/2021	364	5/15	73	C+ (2.33)
6/23/2021	489	12/19	18	B+ (3.33)
7/3/2021	289	5/20	14	B (3)