MITTEILUNGSBLATT

DER

Medizinischen Universität Innsbruck

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148. Curriculum für den Universitätslehrgang „Master of Science in Medical Writing“ an der Medizinischen Universität Innsbruck

Das Mitteilungsblatt erscheint jeweils am 1. und 3. Mittwoch jeden Monats.
Eigentümer, Herausgeber, Vervielfältigung, Vertrieb und für den Inhalt verantwortlich:
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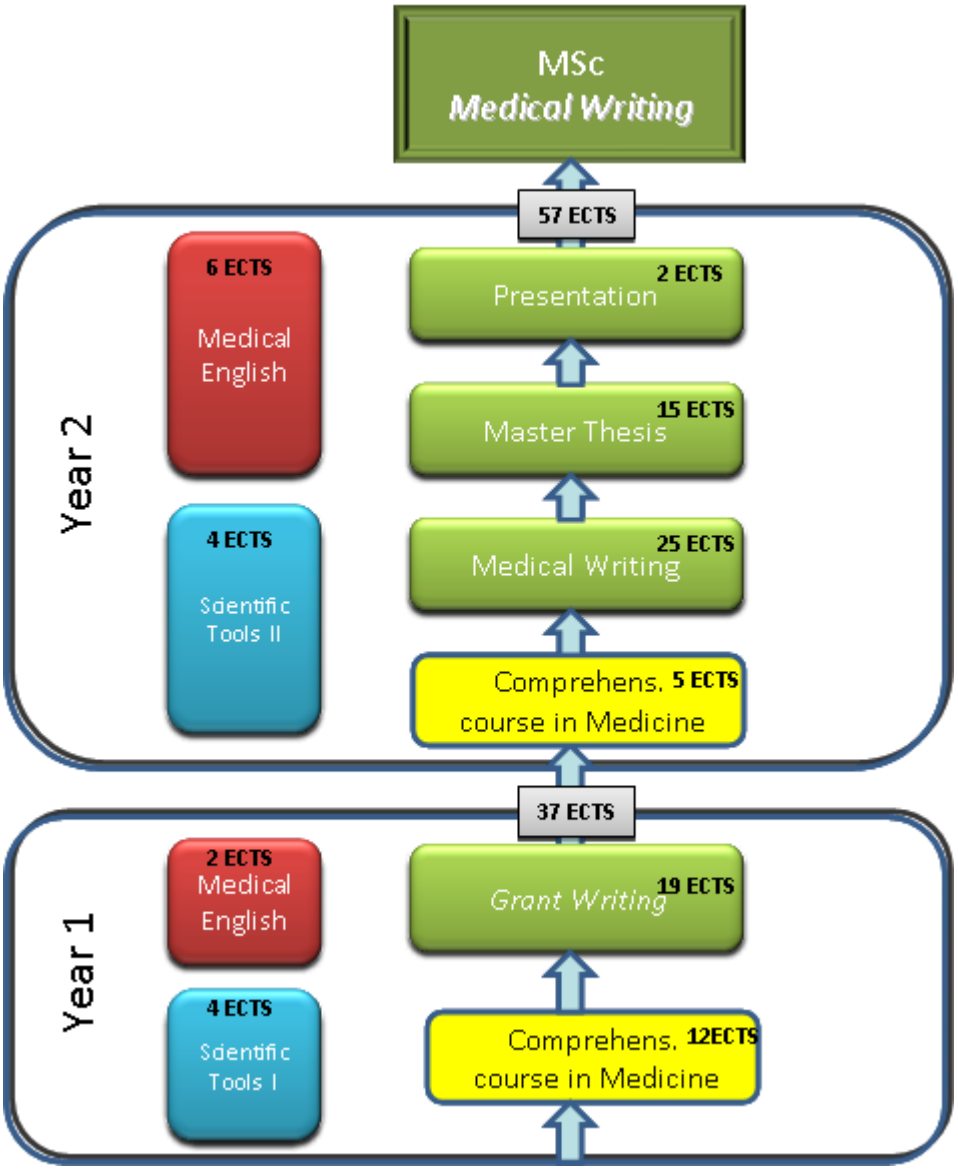
148. Curriculum für den Universitätslehrgang „Master of Science in Medical Writing“ an der Medizinischen Universität Innsbruck

Der Senat hat in seiner Sitzung vom 5.5.2010 gemäß § 25 Abs 1 Z 10 iVm § 56 UG 2002 idgF folgendes Curriculum für den Universitätslehrgang „Master of Science in Medical Writing“ erlassen:

Master of Science

in

Medical Writing



§ 1 Zielsetzung - Qualifikationsprofil

Medizinische Texte werden in zahlreichen Lebensbereichen benötigt. Die Art dieser Texte ist dabei in Inhalt und Form breit gefächert. Dies reicht von Texten, die sich an den medizinischen Laien in allgemeinen Informationen in der Presse oder populärwissenschaftlichen Journalen über rechtlich reglementierte Texte in der verpflichtenden Patienteninformation bis hin zu wissenschaftlichen Publikationen in internationalen Journalen.

Der Universitätslehrgang Medical Writing richtet sich an Personen, die solche medizinisch-wissenschaftlichen Texte verfassen. Sie haben bereits ein Studium der Humanmedizin oder ein naturwissenschaftliches Studium abgeschlossen und publizieren bzw. möchten in medizinischen Fachzeitschriften publizieren. Alternativ haben sie bereits ein einschlägiges literatur- oder sprachwissenschaftliches Studium abgeschlossen und möchten sich auf das Schreiben medizinischer Texte spezialisieren. Neben einer Einführung in die Grundlagen der Medizin (für Nicht-Mediziner) und das grundlegende wissenschaftlich-medizinische Arbeiten liegt ein Hauptaugenmerk auf dem Prozess des Erarbeitens von qualitativ hochstenden medizinischen Texten in seiner gesamten Breite von der Informationssuche über das Studiendesign, die Einreichung von Ethikkommissions- und Förderanträgen, die Datenauswertung und das Erstellen von wissenschaftlichen Manuskripten. Ebenso wird der gesamte Publikations- und Review Prozess wissenschaftlicher Publikationen erarbeitet. In einer Masterarbeit aus den Schwerpunkten des Kurses sollen die Lehrgangsteilnehmer/innen die erworbenen Fähigkeiten praxisnah demonstrieren.

Nach Abschluss des Lehrgangs sind die TeilnehmerInnen in der Lage wissenschaftliche Publikationen auf hohem Niveau zur Publikation in internationalen Fachzeitschriften zu verfassen. Sofern sie nicht selbst medizinisch forschend tätig sind, sind sie interessante redaktionelle Mitarbeiter für medizinische Fachverlage und Zeitschriften. Im gleichen Ausmaß sind sie Kandidaten für Unternehmen aus der Pharma- oder Medizingerätebranche, die in großem Umfang medizinische Texte für Patienten- und Benutzerinformationen erstellen müssen. In solchen Unternehmen können die AbsolventInnen des Lehrgangs auch für die publizistische Betreuung von Studien und dem Verfassen von regulatorischen Texten eingesetzt werden. Darüber hinaus ergeben sich Einsatzmöglichkeiten in wissenschaftlichen Institutionen, Kliniken, Krankenhäusern und Universitätsinstituten, die medizinisch-wissenschaftlich publizieren.

§ 2 Zulassung

(1) Die Aufnahme der Lehrgangsteilnehmer/innen erfolgt jährlich; erstmalig im Wintersemester 2010/11.

(2) Aufnahmevoraussetzungen

In den Lehrgang können Personen mit folgenden Voraussetzungen aufgenommen werden:

a) Absolvent/innen eines in- oder ausländischen medizinischen Universitätsstudiums,
b) Absolvent/innen eines in- oder ausländischen naturwissenschaftlichen Universitätsstudiums,
c) Absolvent/innen eines in- oder ausländischen Universitätsstudiums der Psychologie,

d) Absolvent/innen eines in- oder ausländischen Universitätsstudiums für Sprach- und Literaturwissenschaften, Amerikanistik, Anglistik, Dolmetsch und Übersetzung, Journalismus oder vergleichbare.

(3) Aufnahmeverfahren und Zulassung

1) Bewerbungen um die Aufnahme in den Universitätslehrgang sind unter Beifügung der erforderlichen Unterlagen (Antragsformular, Lebenslauf und Motivationsschreiben sowie Bestätigungen über Abschlüsse und/oder Berufserfahrung jeweils in beglaubigter Kopie) fristgerecht einzubringen. Die Fristen werden vor Semesterbeginn jedenfalls auf der Homepage der Medizinischen Universität Innsbruck und in anderen geeigneten Medien festgelegt und bekannt gegeben.
2) Über die Aufnahme der Bewerber/innen entscheidet der/die Lehrgangsleiter/in auf der Grundlage der formalen Voraussetzungen und des Motivationsschreibens.
3) Personen, die in den Lehrgang aufgenommen wurden und den Lehrgangsbeitrag entrichtet haben, sind vom Rektorat als außerordentliche Studierende an der Medizinischen Universität Innsbruck zuzulassen.

§ 3 Dauer und Gliederung des Lehrgangs

Der Universitätslehrgang umfasst 94 ECTS-Anrechnungspunkte. Das entspricht einer Studiendauer von 4 Semestern.

§ 4 Bezeichnung Beschreibung der Lernziele der Module

(1) Unterrichtssprache ist Englisch

(2) Bei sämtlichen Modulen handelt es sich um Pflichtmodule.

Master of Science

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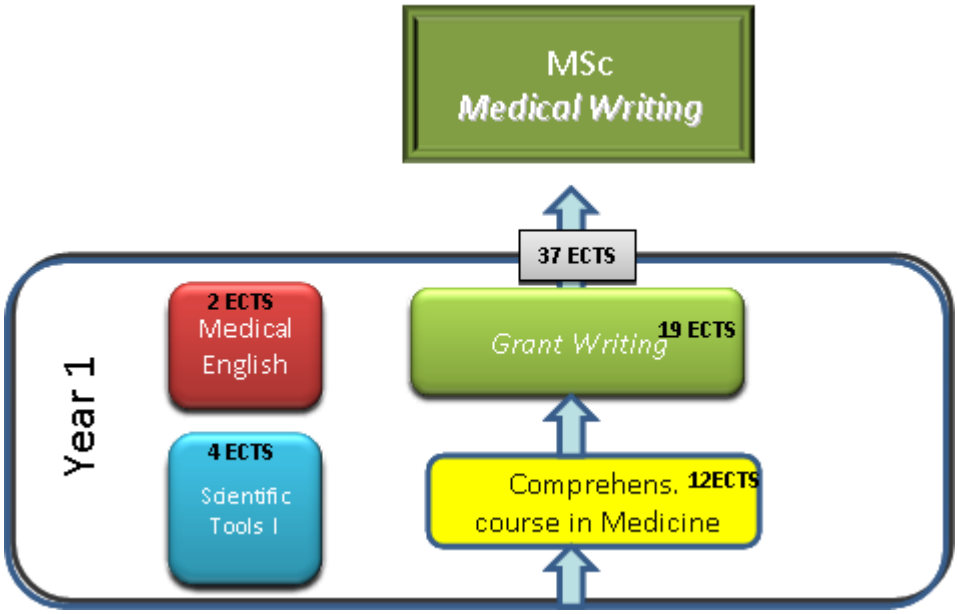

Year 1

Class Name	Content	Overview	Notes
Medical English 2 ECTS	**Basic grammar** – usage review: nouns, pronouns, verbs, adjectives, adverbs, tenses **Punctuation** – appropriate usage of commas, semi-colons, colons, dashes, apostrophes, quotation marks **Spelling** – commonly misspelled and misused words **Sentence logic and clarity** – writing clearly and concisely **Compliant Language** – The legal and regulatory implications of specific words	After completing this course, students will be able to: 1) Identify correct or incorrect usage of nouns, punctuation, spelling, and sentence structure. 2) Edit sentences using correct grammar and punctuation. 3) Recognize when a sentence is unclear and know how to rewrite the sentence clearly and concisely. 4) Identify and correct non-compliant language in an article, abstract, manuscript or submission document.	This is a review course of English and "polishing" course. It is assumed students enter the course with fluency in English. English at A-level standard (B2/C1 of the common European framework or TOEFL score) Each student will need the full version of Adobe 8.0 to review and edit documents. Some homework assignments require electronic editing of documents. For other homework assignments, students have to print the document, edit it according to the directions, save it as a PDF-file, and e-mail it back to the course instructor. All instruction and homework materials relate to the field of medicine.
Scientific Tools Ia *Basic Statistics* 3 ECTS	**Basic biostatistical terminology** – mean, median, mode, power, significance, p value, Type I error, Type II error, confidence intervals, clinical significance vs. statistical significance, regression analysis, sample size calculations. **How to report statistics in medicine** – when	After completing this course, students will be able to: 1) Define and correctly use basic statistical terminology 2) Report statistics correctly in journal articles, abstracts and submission docs 3) Determine when to report statistics in verbal and/or graphical or tabular form 4) Choose the best	This course is designed for non-scientists. No statistical software is required for this course.

	and how to report statistics in texts, when and how to report statistics using graphs, how to choose the right type of graph or table **Determining appropriate sample size and study power** – how to ensure significance can be achieved from analyzing study results	graphical or tabular method for reporting statistical outcomes 5) Identify the methods needed to correctly determine appropriate sample size and study power before a study is begun	
Scientific Tools Ib *Presenting Data* 1 ECTS	**Charts, tables, graphs** – using the correct medium to report data **Designing posters** – choosing the best layout to convey the message **PowerPoint presentations** – how to create high impact slides	After completing this course, students will be able to: 1) Select the correct medium in which to display data from a scientific study 2) Evaluate the text, data and images for a scientific poster and determine the most appropriate design layout 3) Create clear, succinct, high impact PowerPoint presentations to report study progress and/or study results	Students need PowerPoint software for this course and have a basic understanding of how PowerPoint works.
General Anatomy and Physiology 2 ECTS	Basic principles of human anatomy. Overview of anatomic systems in morphology and their normal functionality.	After completing this course, students will be able to: 1) Describe on a basic level the normal anatomy of the human	This course will use anatomic samples for visualization purposes.

		body 2) Describe on a basic level the normal physiology of the fundamental biological systems in the human body	
Head/ Central Nervous System 2 ECTS	Normal anatomy and physiology of the brain and the CNS pathologies care discussed. Several treatment options are introduced and explained. ENT as well as other aspects of the face are covered.	After completing this course, students will be able to: 1) Describe on a basic level pathologies of the brain , the CNS and the face 2) Identify on a basic level several treatment options and strategies	
Thorax /Adomen 2 ECTS	Based on the normal anatomy and physiology of the thorax and abdomen pathologies are discussed. Several treatment options will be introduced and explained.	After completing this course, students will be able to: 1) Describe on a basic level pathologies of the thorax and abdomen 2) Identify on a basic level several treatment options and strategies	
Musculoskeletal System 2 ECTS	Pathologies of the musculoskeletal system as well as several treatment strategies are discussed. This includes diseases, degenerative	After completing this course, students will be able to: 1) Describe on a basic level pathologies of the musculoskeletal	

	diseases, injuries to the musculoskeletal system.	system 2) Identify on a basic level several treatment options and strategies	
Radiation in Medicine and Radiology 1 ECTS	This course elaborates on using radiation as a fundamental system in the diagnosis and treatment of a wide range of pathologies. Physics of radiation are covered as well.	After completing this course, students will be able to: 1) Describe on a basic level the impact of radiation as a diagnostic and treatment tool 2) Explain on a basic level the safety issues involved with using radiology as a diagnostic tool	
Anesthesia / Intensive Care 1 ECTS	This includes surgical anesthesia as well as pain management treatments. Primary focus is on intensive care medicine for postoperative treatment and emergency medicine.	After completing this course, students will be able to: Describe on a basic level how anesthesia is used differently for intensive care, postoperative care, and emergency medicine cases and explain why.	
Infection / Transmission / Protection 1 ECTS	Basic principles of infections, infectious agents, transmission and transmissible diseases are explained. Protection against transmission and infection are a	After completing this course, students will be able to: 1) Describe on a basic level the process of infection and transmission 2) Explain on a	

	main focus.	basic level why infectious diseases is an important field of medical research and writing 3) Know how to avoid contamination	
Working in the Hospital Environment 1 ECTS	In order to understand academic medicine it is necessary to understand how a hospital system functions. Roles, interactions and behavior in this critical environment are explained and trained.	After completing this course, students will be able to: 1) Explain how a hospital works and identify the internal structure of a hospital 2) Describe the roles and responsibilities of the different departments	
Grant Writing 1 *Components of grant writing* 4 ECTS	How to find funding within the Austrian scientific funding system, maximizing the "potential impact" of a proposal, how to write abstracts, write on the background, define the needs, timeline and budget; evaluate tools to measure success, etc.	After completing this section, students will be able to: 1) Locate Austrian funding sources 2) Define and explain the components of a grant proposal 3) Maximize the impact potential of a grant proposal 4) Outline and write the core sections of a grant proposal	Students need internet access.
Grant Writing 2 *The 7th Framework Program (FP7)*	What is FP7, the structure of FP7, how to apply for funding, using the electronic proposal submission service	After completing this section, students will be able to: 1) Explain in detail what FP7 is and how it can be	At the beginning of Part 1, students are told they will be required to complete and submit a grant application by the end of Part 4. Therefore,

2 ECTS	(EPSS)	used to obtain grant funding 2) Describe how the electronic submission proposal system works 3) Know how to move forward once a proposal has been accepted	students should begin actively looking for grant writing opportunities/research partners at this time.
Grant Writing 3 *How to write a competitive proposal for FP7* 3 ECTS	Structure, terminology, the evaluation process, understanding the forms used by the evaluators, how to find strategic partners	After completing this section, students will be able to: 1) Identify the key components required to write a grant proposal for FP7 2) Recognize and understand the required forms for submitting to FP7 3) Find strategically appropriate grant partners for research projects when needed	
Grant Writing 4 *Writing a grant* 4 ECTS	Plan, write, and submit a complete grant proposal	After completing this section, students will be able to: 1) Write and submit a complete and comprehensive grant proposal	
Regulatory Writing *Submissions for Drugs and Devices (emphasis on devices)* 2 ECTS + 4 ECTS (optional)	Eucomed, Declaration of Helsinki, International Conference on Harmonization (ICH), MEDDEV, FDA, how to use guidance documents, how to obtain a CE-Mark, writing clinical	After completing this section, students will be able to: 1) Explain the reasons for Eucomed, the Declaration of Helsinki, and ICH 2) Know how to find and use guidance documents provided by the	

	study reports	above 3) Describe the basic process required to obtain a CE-Mark 4) Outline the basic components contained in a clinical study report	

*After completion of the first year the Medical University Innsbruck will issue a certificate in "**Grant Writing**"*

Master of Science

in

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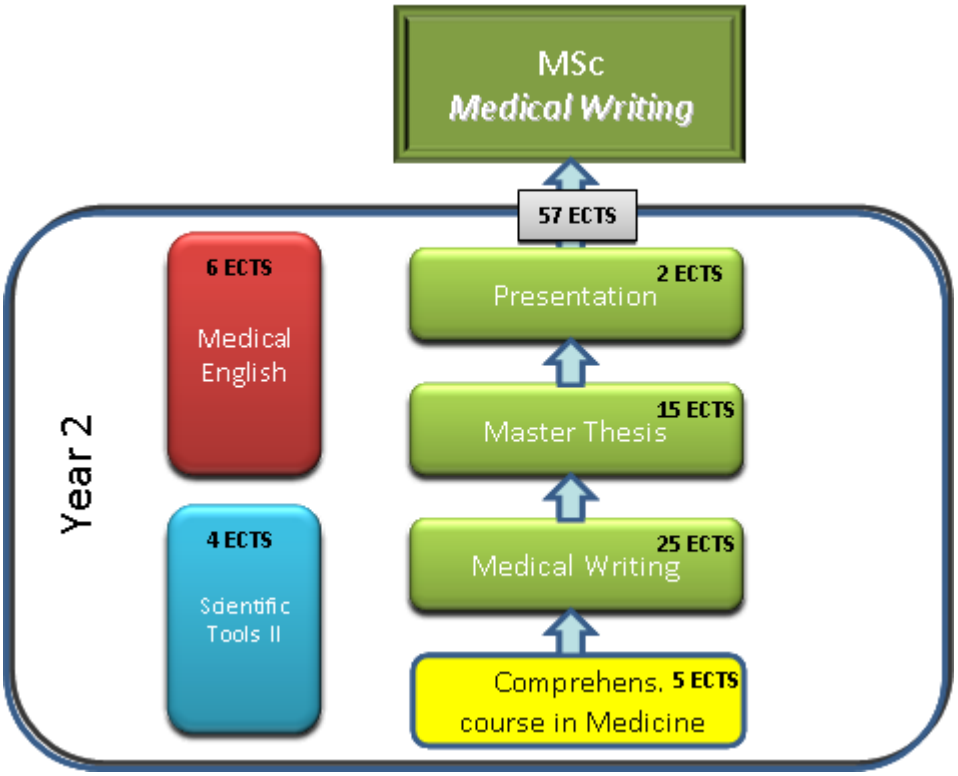

Year 2

Class Name	Content	Outcome/Results	Notes
Medical English *Reading and editing biomedical papers* 6 ECTS	How to read biomedical papers and identify strengths, weakness, and inconsistencies organizing biomedical papers ensuring a consistent message using references correctly proof reading and copyediting	Students will be able to: 1) Read a biomedical paper and identify the important points of papers. 2) Identify strengths, weaknesses, and inconsistencies in a biomedical paper 3) Create an outline for a biomedical paper 4) Organize the parts of a biomedical paper 5) Proof read and copyedit manuscripts 6) Use references/citations properly	
Scientific Tools II *Research study design* 4 ECTS	Interventional (clinical), observational, and cross-sectional trials, case control and cohort studies Prospective vs. retrospective studies Bench top (laboratory) studies, pre-clinical studies, clinical studies, post market studies Ethical considerations Investigational review board (IRB) approval Creating the research question (thesis statement) Clinical Evaluations	Students will be able to: 1) Describe the differences between and the pros/cons of interventional, blinded/double-blinded observational, and cross-sectional studies as well as case-control and cohort studies. 2) Differentiate between prospective and retrospective studies and identify the pros/cons of each. 3) Explain the differences	Students must be told at the beginning of this course that a subsequent course on research study design requires them to write a comprehensive research study design outline. Students should begin actively looking for study design opportunities/research partners

		between laboratory, pre-clinical, clinical and post market studies. 4) Explain the reasons why IRB approval is required for certain types of studies. 5) Create a research question (thesis statement).	
Current Frontiers in Medicine 5 ECTS	An overview of the current frontiers of research in selected fields of human medicine: 1. Neuroscience 2. Internal Medicine 3. Genetics 4. Molecular Biology 5. Musculoscelettal Medicine 6. Surgery	Students will be able to: 1) Identify current concepts of research in different fields of human medical research 2) Explain what the most pressing scientific questions are and what the main areas of research are 3) Provide general explanations of current research topics in selected medical specialties	Course will combine general overview lectures on the topics with experts in different research areas with individual elaboration of the topic and presentation of the finding to the group.
Finding information 5 ECTS	How to perform a literature review use online bibliographic resources understand software programs for referencing: EndNote and/or Reference Manager Index Medicus (abrreviations of journals have to be understood)	Students will be able to: 1) Use online bibliographic resources to conduct literature searches, including proper selection of key words and search strings 2) Use a referencing software program such as EndNote	Students need access to referencing software, such as EndNote or Reference Manager (whichever program the University prefers)

		or Reference Manager to create personal reference library files, download references from online bibliographic databases, and insert correctly formatted references into manuscripts	
Outlining a research study design 5 ECTS	Using the information from *Scientific Tools II – Research Study Design*, write a comprehensive research study design outline including: introduction and purpose of the research review of the literature, methodology or procedures, findings (analysis and evaluation methods), budget summary, conclusions, and recommendations. writing plan-time; managing a writing team/statistican etc. resource planing.	Students will be able to: 1) Identify all the necessary components for designing and writing a research study 2) Write a comprehensive outline for the research study, including appropriate referencing where needed	A comprehensive outline is required for this course, *not* a fully written research study. However, the intent behind requiring a comprehensive outline only is for students to be able to easily convert their outlines into fully written study designs if they wish to do so in the future.
Writing the manuscript – Part 1: <u>*What kind of article?*</u> 5 ECTS	Types of publication – clinical study or scientific study results, letters to the editor, case reviews, tips & techniques, literature reviews; determining the best medium for publishing your message levels of Evidence writing and submitting scientific conference abstracts	Students will be able to: 1) Identify the different options for submitting scientific data to journals 2) Determine the best submission option for the work 3) Explain the role of Levels of Evidence in the submission of scientific papers	<u>*Master's Thesis*</u>: Students are be told at the beginning of this course that a fully written and submitted journal article will be required for their Master's Thesis. If students are not already involved in working on a manuscript (or manuscripts), students should begin actively looking for manuscript writing opportunities.

		4) Write an abstract for submission to a scientific conference 5) Write one (1) of the following: a case review, letter to the editor, or a tips & techniques article and review one article (good to not only write but also analyze written work) could do good/bad paper example.	*Conference Abstract:* Students should have a specific scientific conference in mind for submitting the abstract. However, due to the variability of conference abstract submission deadlines, submitting the abstract to a scientific conference is not a requirement, although it is hoped the student will be able to submit the abstract at a near point in the future. *Article:* The student should have a target journal in mind for either the case review, letter to the editor, or tips & techniques article to ensure compliance to journal submission guidelines. Although submission of the above is not a course requirement, it is hoped the student will be able to submit their work at some point in the near future if they wish.
Writing the manuscript – Part 2: *Sections of a manuscript* 5 ECTS	Abstract, Introduction, Materials/Methods, Discussion, Conclusion Acknowledgements Conflict of Interest Selection of and responsibilities of co-authors (impact points) Acknowledgements – who to (or not to) include	Students will be able to: 1) Identify the sections of a scientific manuscript. 2) Describe specifically what should be included in each section of a manuscript and explain why it belongs there. 3) Write each section of a manuscript in its entirety	

		including correct references, figures, tables, graphs 4) Explain what does and does *not* constitute who is an author on a manuscript 5) Explain when to (or not to) include a person or an institution in the Acknowledgements section	
Writing the manuscript – Part 3: *Techniques for improving chances of acceptance* 5 ECTS	How to write a high impact title Selecting the most appropriate references Choosing the most appropriate journal Electronic submission of the manuscript and related figures Responding to reviewer comments – tips for getting a quicker turnaround time Following up on your submission	Students will be able to: 1) Determine the most appropriate title for a manuscript while remembering the importance of compliant language 2) Know how to select and eliminate references obtained during a literature search to achieve maximum relevance and minimal bias 3) Realistically assess the level of work of a particular manuscript and target the most appropriate journal for that level of work 4) Explain to co-authors why a particular journal is the most appropriate choice for submission 5) Exhibit	

		proficiency in electronic submission of manuscripts and the related tables, graphs, and figures 6) Respond to reviewer comments efficiently and effectively	
Masters Thesis 15 ECTS	A fully written and submitted scientific manuscript, grant application or book articles required.	Students will be able to: 1) Write and submit a completed scientific manuscript to a medical journal. 2) Grant application 3) Book article.	
Presentation of Thesis 2 ECTS	Oral and PowerPoint presentation of the submitted manuscript is required.	Students will be able to: Summarize and present their manuscript findings to a panel.	

§ 5 Master Thesis

(1) Jede(r) Lehrgangsteilnehmer/in hat eine Master Thesis in Form einer schriftlichen Arbeit zu verfassen, die vom/von der jeweiligen Projektbetreuer/in beurteilt wird.

(2) Die Lehrgangsteilnehmer/innen haben bis zum Beginn des dritten Semesters ein Thema für die Master Thesis dem/der Lehrgangsleiter/in in schriftlicher Form vorzuschlagen. Gleichzeitig ist die Zustimmung des/der Betreuers/in vorzulegen. Das Thema und der/die Betreuer/in gilt als angenommen, wenn der/die Lehrgangsleiter/in diesen/diese innerhalb eines Monats nach Einlangen der Bekanntgabe nicht untersagt.

(3) Themen für die Master Thesis sind aus folgenden Bereichen zu wählen:

1. Erstellung eines einreichbaren Förderantrages bei nationalen und internationalen Förderinstitutionen. Der Antrag muss tatsächlich eingereicht werden.
2. Erstellung eines medizinisch wissenschaftlichen Journalartikels in einer englischsprachigen Fachzeitschrift. Das Manuskript muss zur Publikation eingereicht werden. Das Thema der wissenschaftlichen Arbeit kann ein eigenes Forschungsprojekt der Teilnehmer/innen selbst sein oder das einer Arbeitsgruppe.
3. Erstellung eines Buchbeitrages in einem medizinischen Lehrbuch. Das Manuskript muss zur Publikation eingereicht sein.

(4) Betreuer/in einer Master Thesis können alle Vortragenden des Universitätslehrganges sein.

§ 6 Prüfungsordnung

(1) Für das Prüfungswesen im Rahmen des Universitätslehrgangs sind die Bestimmungen der §§ 72 ff UG 2002 und die einschlägigen Bestimmungen des Satzungsteils „Studienrechtliche Bestimmungen der Medizinischen Universität Innsbruck“ anzuwenden.

(2) Für den erfolgreichen Abschluss des Universitätslehrgangs und zur Verleihung des akademischen Grades „Master of Science in Medical Writing“ sind folgende Voraussetzungen zu erfüllen:

1. Positive Teilnahme an allen Veranstaltungen des Universitätslehrgangs (Pflicht- und gewählte Wahlfächer). Die Anrechnung von gleichwertigen Ausbildungsteilen durch die wissenschaftliche Leitung des Universitätslehrgangs ist möglich.
2. Approbation der Master Thesis durch die Prüfungskommission im Rahmen der Präsentation der Abschlussarbeit.

(3) Wenn alle Lehrveranstaltungen eines Moduls von dem/der Teilnehmer/in positiv abgelegt wurden, hat der/die Modulleiter/in die Modulnote für dieses Modul durch Addition der Prüfungsnoten und nachfolgende Division durch die Anzahl der Prüfungen zu ermitteln. Ist die ermittelte Zahl nicht größer als 1,5 – so hat der/die Teilnehmer/in das Modul „Mit Auszeichnung bestanden“. Ist die ermittelte Zahl größer als 1,5 – so lautet die Modulnote „bestanden“.

§ 7 Prüfungskommission

Die Prüfungskommission besteht aus von dem/der Vizerektor/in für Lehre und Studienangelegenheiten auf Vorschlag der Lehrgangsleitung aus dem Kreis der Lehrbeauftragten bestellten Prüfer/innen. Eine Prüfungskommission besteht aus mindestens drei einschlägig qualifizierten Mitgliedern.

§ 8 Bezeichnung für Absolventen/innen des Universitätslehrgangs

(a) Nach erfolgreicher Teilnahme am ersten Jahr des Lehrganges wird ein Zertifikat über die Teilnahme am Lehrgangsteil ,,Grant Writing“ ausgestellt.

(b) Den Absolventen/innen des Universitätslehrgangs ist nach der positiven Beurteilung aller vorgeschriebenen Prüfungen und der Master Thesis die Bezeichnung „Master of Science in Medical Writing“ – abgekürzt MSc - zu verleihen.

Für den Senat
Ao. Univ.-Prof. Dr. Michael Joannidis
Vorsitzender