

# AUM

## Catalog 2019–20

aum.edu.mt

#### ACCREDITATION AND LICENSURE

The National Commission for Further and Higher Education of Malta (NCFHE) accredited and licensed (License Number: 2016-002) the American University of Malta (AUM). The license permits AUM to deliver academic degree programs at Levels 6, 7, and 8 (Bachelors, Masters, and Ph.D. programs) of the Malta Qualifications Framework (MQF). The NCFHE individually accredits all degree programs at AUM.

At the appropriate times AUM will also seek accreditation from international disciplinary accrediting bodies and from a regional accrediting body in the United States.

#### EMPLOYEE NON-DISCRIMINATION POLICY

AUM prohibits discrimination in terms consistent with Maltese law and American practice. AUM is committed to providing faculty and staff with an environment in which they may pursue their careers free from discrimination. Employees who believe that they have been denied opportunities because of discrimination may file a grievance.

#### NOTICE

To keep University policies in compliance, AUM may without prior notice change policies, regulations, procedures, and fees in this Catalog.

The University reserves the right to change curricula, rules, fees, admission requirements, and other requirements without notice. The provisions of this Catalog do not constitute a contract, express or implied, between any applicant, student, faculty member, or any other person, and American University of Malta.

#### STUDENT DATA PROTECTION

The American University of Malta (AUM) abides by the Genera Data Protection Regulation (GDPR) of the European Union and the Family Educational and Privacy Act (FERPA) of 1974 as amended of the United States. Appropriate technical and organizational measures are used to protect personal data in accordance with the principles of each law.

The AUM has identified the following student information, under FERPA, as "directory information": student's name, address, telephone number, date and place of birth, major field of study, participation in officially recognized activities and sports, height and weight if a member of an athletic team, dates of attendance, degrees and awards received and the most recent educational institution attended. This information may be released without the student's written consent. However, students have the right to restrict the release of directory of information by completing and submitting a Restriction of Directory Information form to the Registrar located in room 110.

Regular photographs and videos of school events and activities either in university or on outings are taken regularly. These photographs are used in classroom displays as well as for communication purposes, such as school newsletters, the school website, television, newspaper reports and social media coverage. The written consent of the student is required before taking and using photographs/video for any of the above purposes.

Students have the right to access their own official records. The written consent of the student must be received before personally identifiable data is released from the student's records to any third party other than the exceptions specified below.

AUM is authorized to provide campus officials and employees, who have a legitimate educational interest, access to students' records. These persons are those who have responsibilities in connection with the academic, administrative, or service functions of the university and who have reason to access student records connected with their academic or other university responsibilities. Disclosure may also be made to other persons or organizations under certain conditions (e.g. as part of an accreditation or program evaluation; as part of an immigration process for international students; in response to a court order or subpoena; in connection with financial aid; or to other institutions to which the student is transferring).

#### STUDENT NON-DISCRIMINATION POLICY

AUM is committed to providing its students, faculty, staff, trustees and alumni an environment in which they can pursue their studies, careers, teaching & research free from discrimination. AUM does not discriminate on the basis of gender, sex, race, color, gender identification, gender expression, sexual orientation, religion, creed, national origin, age, veteran status or disability. Retaliation is prohibited by AUM policy.

"Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less." — Marie Curie



This Fall our first class of students is beginning their third year at AUM. What began as a small group of risk-taking pioneers has become a fast-growing university, with new programs, new faculty and bold plans for the future. Our commitment to you, though, has not changed. We remain a new kind of university. Different from other universities because we build our academic program around one unassailable fact: that we live in a time of unparalleled social, economic and technological change.

By taking seriously the enormity of this change, we take seriously the need to make necessary changes in our educational mission and student programs. Those trained to perform only the skills and procedures of the present, in business, in government, in civil society, will become obsolete before they reach middle age. Students who are prepared to embrace the path of change, who have developed the courage and the wisdom to sustain life-long growth and development, will be the leaders of tomorrow and by the time they reach their middle years be already shaping the future, bending the arc of change toward a world in balance with its resources and passionate about the care and support of the most vulnerable. We will undertake to bring all our programs in line with this goal.

This Fall we will partner with Arizona University's Cloud and Autonomic Computing Center and its Director and Founder, Dr Salim Hariri, Professor of Electrical and Computer Engineering. Dr. Hariri has just received another five years of funding for his Center from the National Science Foundation in the United States, signalling the world-class importance of his work. One of the primary thrusts of Dr. Hariri's research work is Cyber Security, an area whose importance affects virtually all organized life in our world, from government to industry, to recreation and the intimacies of home and neighbourhood. Working with Dr. Hariri, AUM will develop a state-of-the-art research laboratory on our campus, and Dr. Hariri will supervise post-doc graduates of the University of Arizona and advanced doctoral candidates to continue on our campus the research being conducted in Arizona.

In this way, we will be bringing a part of the future to the AUM campus. As students, faculty and staff interact on a personal and professional level with the research centers, we will all learn to understand, appreciate and walk in confidence with the massive changes of our time. We will become part of that change. We believe that all areas of AUM will benefit from the presence on our campus of world-class research and the scientists who stand at the center of global science and technology. Our students and faculty will engage formally and informally with the Research Center(s) and share the dream of a new world based upon human values and technological advance.

Change creates uncertainty. Unless a person is prepared for a life of change, such uncertainty will weaken resolve and impair decision making. AUM will prepare you to thrive in environments of uncertainty. In our courses and in our student life, we will reward risk taking. We will instill a respect for individual accomplishment and the value of team effort. We will welcome at the table of discovery, unique personal experience and honor diverse views. We will instill a confidence in each of you that will sustain you as you choose new directions of thought and action, often alone and with an uncertain compass.

As Marie Currie said we conquer fear by understanding more. We prepare men and women for the future not by insulating them from the enormity of the changes that lie ahead, but by arming them with the ability to master change, to feel at home in the frontier lands of technology and thought—prepared for the future because they have studied at AUM.

Our values are:

- ➤ Character and Integrity.
- > The Well-Educated Person—a lasting Foundation of values and understanding.
- > A Design Perspective—recognizing practical approaches for complex choices.
- Sustainability—leaving a more human world for our children

Our cause is:

To meet the needs of this century and the next by providing our students with the skills and knowledge to be critical thinkers and innovative and ethical leaders prepared for the challenges, uncertainties and opportunities of an unknowable future.

Lewis N. Walker President of American University of Malta

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American University of Malta			
Fall 2019			
August	20	Placement Tests	
August	21	New Faculty Orientation	
August	22-23	Orientation and New Student Course Registration	
August	26	First day of Class; Tuition and Fee Payment Deadline	
September	2	Last day to Add/Drop	
September	8	Victory Day	
September	21	Independence Day	
October	14-18	Mid-term Exams	
October	26	Last date to withdraw from a course without grade 'F'	
November	28-29	U.S. Thanksgiving*	
December	3	Registration opens for spring semester 2020	
December	8	Immaculate Conception	
December	11	Last Day of Classes	
December	13	Republic Day*	
December	14-20	Final Exams	
December	24	Grades available	
December	21 Dec – 12 Jan	Intersession	
		Spring 2020	
January	7	Placement Tests	
January	8	New Faculty Orientation	
January	9-10	Orientation and New Student Course Registration	
January	13	First Day of Class; Tuition and Fee Payment Deadline	
January	20	Last Day to Add/Drop	
February	10	Feast of St. Paul's Shipwreck*	
March	2-6	Mid-term Exams	
March	13	Last Date to Withdraw from a Course Without Grade "F"	
March	19	Feast of St. Joseph's*	
March	28 – 13 April	Spring/Easter Break	
March	31	Freedom Day*	
April	14	Classes Resume	
April	14	Registration opens for summer/fall semesters	
May	1	Workers' Day*	
May	13	Last Day of Class	
May	15-21	Final Exams	
May	25	Grades Available	
	Su	ummer 2020 - Session I	
May	25	Classes Begin	
June	7	Sette Giugno	
June	25	Last Day of Summer Session I	
June	29	Grades Available	

\* National and AUM Holidays

**General Information** 

#### AMERICAN UNIVERSITY OF MALTA AT A GLANCE

AUM is a private university founded by Sadeen Education Investment Ltd. The Sadeen Group itself committed to establishing a university on the American model that would deliver a university education of the highest international standards. After high-level discussion, it was determined that the Republic of Malta would be the right location for the university. After a rigorous review process of all aspects of the proposed university, including its planned physical plant, academics, and financing, the American University of Malta was officially born on 16 September 2016, with the issuing of its license and accreditation (*License Number 2016-002*) by the National Commission for Future and Higher Education of Malta (NCFHE).

#### <u>Our Vision</u>

The American University of Malta educates a diverse student body to become ethically responsible global citizens, critical thinkers, and future leaders in an academically challenging learning environment. AUM strives constantly to innovate and enhance quality in teaching, research, public service, and economic development.

#### **Our Mission**

The American University of Malta is a private, American-style liberal arts university dedicated to higher education and research for an international community at the highest standards. Our degree programs, research activities, and service to the community transform lives and serve society by educating ethically knowledgeable citizens, creating knowledge, and putting knowledge to work in a global setting.

#### **Our Values**

- Character and Integrity
- Foundation of Well Educated Person
- Prepared to Design the Future

- Sustainable Future
- Innovative Design

#### Our Goals

- **Goal 1:** Provide the highest standards of education, through teaching and research, based on an American liberal arts model and curriculum.
- **Goal 2:** Create an environment that fosters academic quality and student success through innovative and effective teaching strategies along with high quality academic and student sup- port programs.
- **Goal 3:** Provide students with a richly rewarding educational experience through strong academic support, student services, and campus life initiatives.
- **Goal 4:** Provide a safe and healthy campus to support and advance teaching, learning, and research.
- **Goal 5:** Maintain and enhance financial stability, integrity, and transparency in all areas.
- **Goal 6:** Build and promote AUM community engagement and service.

#### **General Purpose of the Catalog**

This Catalog is an official bulletin of American University of Malta where AUM provides general information concerning procedures and fees in effect when the Catalog was published. AUM reserves the right to make changes at any time to reflect current board policies, administrative regulations and procedures, amendments by law and fee changes. Students remain responsible for observing the regulations contained herein; therefore, they are urged to read this Catalog carefully. This Catalog does not contain all University rules for which a student is responsible. Stu- dents should also consult other publications, such as the American University of Malta's student handbook.

## **Academic Integrity**

#### AUM Honor Code

Students are responsible for understanding the Code's provisions. Cheating and attempted cheating, plagiarism, lying, and stealing of academic work and related materials constitute Honor Code violations.

"To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of AUM community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code:

#### Student members of the American University of Malta community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work."

In the spirit of the Code, a student's word is a declaration of good faith acceptable as truth in all academic matters until proven otherwise. To maintain an academic community according to these standards, students and faculty must report all alleged violations to the Office of the Provost.

At the beginning of each semester, faculty members have the responsibility of explaining to their students the policy regarding the Honor Code, and what is considered an integrity violation in their courses with special attention to plagiarism. They must explain the extent to which aid, if any, is permitted on academic work. It is the sole responsibility of the students to request an explanation of any aspect of an instructor's policies regarding the Honor Code that they do not fully understand. They have an obligation not only to follow the Code themselves, but also to encourage respect among their fellow students for the provisions of the Code. This includes an obligation to report violations by other students to the Office of the Provost.

Faculty members are also responsible for maintaining the integrity of the learning and testing process. Faculty members may actively proctor exams, prohibit the use of mobile phones in class, or take any other actions they believe are warranted.

For all academic assignments, project work, and presentations, students need to ensure that due acknowledgement is given to the source of any information that they incorporate in their work. Students must ask their professors if they are unsure whether or not something constitutes academic misconduct in any form. The following are some examples of academic misconduct:

- Cheating or using unfair means in examinations as determined by the professor.
- Significant paraphrasing in written academic work.
- Unacknowledged use of information or ideas unless such ideas are commonplace.
- Citing sources which student has not read or referred to.
- Breaching the word limit of assignments and/or intentionally mentioning the wrong word count.

Cheating may take many forms, for example:

- Copying from another student's paper during an exam, or allowing or encouraging another student to copy from your paper during an exam.
- Having someone else take your exam in your place, or taking an exam for someone else.
- Obtaining unauthorized access to exams and accepting exams obtained by unauthorized access.

#### Violations of Academic Integrity: Plagiarism

This is a serious academic offense that constitutes the use of someone else's ideas, words, projects, artwork, phrasing, sentence structure, or other work without properly acknowledging its source. Plagiarism is dishonest because it misrepresents the work of someone else as one's own. It is intellectual theft as it robs others of credit for their work. For a student found plagiarizing, the punishment can range from receiving a failing grade on that particular assignment without the right to redo the assignment up to dismissal from the university.

#### Plagiarism takes many forms and includes:

- Using someone else's words without putting these words in quotation marks.
- Handing in as "original" work prepared by some- one else or preparing/completing someone else's work.
- Using unique, original ideas, phrases, sentences, paragraphs, etc. from a single source or a variety of sources, such as a text, journal, web page, electronic source, design, artwork, etc. in one's work without citing all sources.
- Using the same work to satisfy the

requirements of two or more courses (during the same or different terms).

 Having someone else rewrite a rough draft or rewriting a rough draft that is not your own work.

Violations of plagiarism are subject to evaluation according to the criterion of "reasonable doubt." Any violation of the university's academic rules, regulations or directives must be reported as soon as possible to the Provost and may result in one or all of the following disciplinary measures:

- Verbal or written warning.
- Repeating the course.
- Repeating the term.
- Dismissal from the university.

#### Reporting Violations of AcademicIntegrity/ Misconduct

In the event of a suspected incident of academic misconduct, the faculty member raising the issue must submit a formal written report to the Provost requesting action. The Provost will review the written request and determine if there are sufficient grounds to pursue the case further. If so, he/she will forward the case to AUM's Disciplinary Committee. The student under investigation will be formally notified of the date and venue. The Provost will make the student under investigation, and all committee members, fully aware of the charges. Final decision will be taken by the Disciplinary Committee.

#### The Academic Disciplinary Process

The Provost will make the student under investigation, and all committee members, fully aware of the charges. During the hearing, both the student and the faculty member bringing the charges will be allowed to state their case before the three-member committee. If requested, the parties involved will be allowed an advisor during the proceedings from inside the university community or from the student's immediate family.

Once the committee has heard the evidence, it will come to a judgment and determine sanctions, if warranted, within two working days of the hearing. The judgment and sanctions will be formally submitted in writing to the Provost who will then inform the student immediately and administer the sanctions. The student is allowed to lodge a formal, written appeal with the Provost within seven working days of the committee's findings. Appeals can be granted only on the basis of new evidence, procedural irregularity, or other grounds of a serious nature. The Provost shall review the case and determine the final disposition on the case.

#### Structure of Sanctions and Penalties for Student Behavioral Misconduct and Academic Integrity Violations

All cases of academic misconduct and violations of the student behavior and academic integrity shall be dealt with fairly and judiciously.

#### Academic Integrity Violations

The following shall be the penalties for academic integrity violations:

**First time offense:** The disciplinary committee will deter- mine a penalty appropriate with the seriousness of the offense and the degree of student fault. The penalty may be as severe as dismissal from the university.

**Second time offense:** The sanction for the second-time offenders of the Honor Code is dismissal from the university. The student will have to withdraw from all of the courses for which he/she is registered. Additionally, a grade of "F" will be assigned as the final grade for the course in which the violation occurred.

#### **Copyright Regulations**

Maltese and international copyright laws govern the making of photocopies or other reproduction of copyrighted material. All students are expected to familiarize them- selves with the policies on "fair use." The photocopy or reproduction is not to be used by students for any purpose other than private study, scholarship, or research. If copying or reproduction of copyrighted materials is in excess of what constitutes "fair use", students may be liable for copy- right infringement and risk losing their library privileges and/or be subject to legal action.

#### Non-Academic Misconduct

Refer to the American University of Malta Student Hand- book.

## UNDERGRADUATE

#### Undergraduate Admission Policies

American University of Malta (AUM) seeks to admit qualified students who wish to become part of a new, innovative global academic institution based on the American model. It is the goal of AUM to admit those students most likely to benefit from its academic programs and diverse student body. Applications are welcome from all students without regard to race, color, religion, national origin, dis- ability, sex, or age.

To be considered for admission, each applicant must present sufficient evidence of appropriate qualifications in line with the requirements of the Republic of Malta. Factors considered include, but are not limited to, marks on leaving certificates and on other standardized exams, English proficiency, level of difficulty and appropriateness of course- work, essays, and recommendations. An offer of admission is valid only for the semester for which the student applies.

#### **Applying for Admission**

Applications to the American University of Malta are only available online on the AUM website. The application process requires prospective students to have an interview with an Admissions counselor to discuss their academic aspirations.

#### Undergraduate Requirements

#### Admission

AUM has benchmarked the admissions criteria of the American University of Beirut (AUB) and the American University of Cairo (AUC), which it regards as its aspirational peers. It may not be possible to apply identical admissions criteria as AUB and AUC initially, but AUM intends to move in that direction. With that in mind, it will apply the following procedure:

## Materials required in the undergraduate admissions application:

- Official AUM application and applicable fee
- Secondary school transcript.
  - Minimum of grades 10 and 11.
  - Documents should be in English.
  - Official transcript and diploma must be presented before courses commence.
- Proof of English proficiency (for students who did not graduate from a secondary school using English as a medium of instruction). Accepted proof of English proficiency includes:

- International English Language Testing System (IELTS).
- Test of English as a Foreign Language (TOEFL).
- American College Test\* (ACT) or Scholastic Aptitude Test\* (SAT) English/reading score results.
- Other forms can be decided on a case-bycase situation.

\* The ACT and SAT can be done several times and the highest scores from each section will be used.

#### Undergraduate Admission Requirements:

- Secondary school completion, which can include:
  - High School Program.
    - 70% or above for grades 10 and 11 in a US system or the equivalent standards in other countries.
  - International Baccalaureate (IB) Certificate.
- General Certificate of Secondary Education (GCSE) / International General Certificate of Secondary Edu- cation (IGCSE).
  - Five subject exams with grades of D or above on each.
  - Three subject exams in the Advanced Subsidiary (A/S) or Advanced Levels (A Levels) with a minimum of D.
- Maltese secondary (sixth form) schooling applicants:
  - Matriculation Certificate.
    - Five (5) or above in English and Mathematics.
  - A/S or A Levels: three subject exams with a minimum of D.
- Other school leaving certificate may be considered.
  - Can include IB, AP International diploma (APID), or European Baccalaureate (EB).
- Proof of English proficiency (for students who did not graduate from a secondary school using English as a medium of instruction). Acceptable proof of English proficiency includes:
  - IELTS minimum of 6.0. Engineering and Technology degrees require a 6.5.
  - TOEFL.
    - Paper Based minimum of 550.
  - Internet Based (iBT) minimum of 79.

- Computer Based (CBT) minimum of 213.
- ACT or SAT English score results.
  - ACT reading 18 or above and 20 or above in English.
  - SAT reading and writing score of 550 or above.
- IGCSE English as a second language.
  - Grade C or above.
- Other forms can be decided on a case-bycase situation.

#### Additional Requirements

Please note that the admission requirements for specific degree programs may be higher than the general requirements indicated here. For example, degree programs in Engineering require A-level mathematics and GSCE: Science C.

#### **Conditional Admission**

Conditional admission is offered for applicants who meet all requirements except English proficiency. Conditional admits must enroll as full-time students in the AUM English for Academic Purposes program. The minimum English proficiency scores for conditional admission is 5.0 IELTS for undergraduates (or equivalent).

#### **TOEFL** Test

Applicants may take the TOEFL tests on line at: <u>http://www.toefl.org/</u> The AUM TOEFL - ETS SCHOOL code B757.

The English language proficiency requirement can be waived if students meet one or more of the following:

- You are a native speaker of English and you have completed your secondary education in an English medium institution in a country where English is the official language.
- You are a student admitted to and have graduated from to an institution in which English is the language of instruction.

#### **Readmission after Previous Attendance**

Students who miss two or more consecutive semesters of enrollment at AUM for these reasons must **apply for readmission**:

#### Early Admission

Students in their final year of secondary school are encouraged to apply for early admission by submitting official grade reports from at least the last two years previous to the final year of secondary school, the transcript of the first term of the final year, and TOEFL scores to be considered for early admission.

Applicants with the highest grades who have the required TOEFL score will be given priority in admission consideration. Early admission is only offered to highly qualified applicants and is not final until students submit:

- A recognized and officially certified secondary school certificate or equivalent showing successful completion of secondary education.
- All other items as requested in the letter of admission.

#### **Application Deadlines**

AUM reports the application deadline for admission on the AUM Website, through newspapers, through social media, and/ or through university notice boards for freshmen and transfer applicants. AUM makes admission decisions for first- year students after receipt of the first-semester grades of the senior year of secondary school and all appropriate test results. Admission is contingent upon satisfactory completion of in-progress course work and graduation from secondary school. AUM makes transfer decisions when files become complete.

#### Acceptance of Admission Offer

Students confirm their acceptance of an admission offer by paying the admissions deposit which is described on the AUM Offer Letter.

#### **Enrollment Deferral**

Admitted students can defer admission for one semester with the approval of the Director or Assistant Director of Admissions. Admission deferral can only be granted for one semester; further deferrals require re-application.

#### **Right to Withdraw Offer**

AUM reserves the right to withdraw offers of admission if applicants fail to satisfy all requirements, or that the applicant obtained admission through the use of falsified, altered, or embellished information. In the case of withdrawal of admission from a matriculated student, credit earned may be withheld.

An undergraduate returning after an absence during which he or she studied at another institution without prior written permission of the Provost or designee.

- AUM academically dismissed the student.
- The law convicted the student of a felony.

If none of those conditions apply, students in good academic standing who have missed two or more consecutive semesters of enrollment (excluding Summer) at AUM may be readmitted by completing a *Re-Enrollment* Form available through the Registrar's Office.

#### **English for Academic Purposes**

AUM designs the English for Academic Purposes (EAP) program for non-native speakers of English who wish to enroll in AUM undergraduate or graduate programs but who have not met the admissions criteria of minimum scores on standardized tests of English. The EAP program intro- duces students to the academic discourse community at American University of Malta by addressing the linguistic, organizational, critical thinking, and cultural skills necessary to successfully achieve degree-seeking potential. Our program facilitates the smooth transition from conditional to full admission to the university by preparing students to meet academic expectations for successful written and oral English-language communication at a university level and to learn the social and cultural awareness necessary to be successful students and classmates in AUM courses. To achieve this, AUM faculty grounds instructional practices in the fields of TESOL, applied linguistics, and composition.

#### Second Bachelor's Degree Application

Students who have received a baccalaureate degree from an accredited institution may apply to pursue a second degree through the Office of Admissions. If admitted, Admissions will consult with the appropriate dean to assist the student to develop an approved course of study (a contract) of at least thirty (30) credits beyond the first degree that will ensure that college and major requirements are met. General education requirements do not need to be met for a second degree.

#### **Transfer Admission Policy**

## Undergraduate Transfer Admission Requirements and Procedures

#### Currently, AUM accepts transfer students on a case-bycase basis.

Students who have completed courses at other accredited/ recognized institutions of higher education and seek admission to AUM may be awarded credits for those courses, provided that they submit authenticated transcripts and similar documents to prove the validity of such credits. The transfer student must submit to the Office of Admissions a list of courses that he or she requests to be transferred. The request must include a syllabus for each course for which transfer credit is sought. Admissions will consult with the department chair(s) appropriate for each course requested, and the chair(s) will inform Admissions which courses may be transferred and an AUM course. The Office of Admissions will review the chair(s) recommendations to ensure consistency and inform the transfer student of the decisions.

The total number of credits that can be transferred into an AUM program shall not exceed 50% of the total number of credits required for completion of the degree for that program. The transferred course must offer the comparable number of credits as the AUM course to be considered for equivalency. Transferred credits and grades are not used in calculating the cumulative grade point average (CGPA) at AUM. Only courses graded C or above are considered for transfer credit.

#### Advanced Standing Policy

At present, AUM does not wish to award credit by Advanced Standing. If, in the future, we should want to consider a policy on Advanced Standing, we will work with the Commission to receive approval in advance of publishing it in any AUM documents.

#### Recognition of Prior Learning Policy

Currently, AUM does not award credit for recognition of prior learning.

#### **Financial Information**

## Tuition and Fees for Undergraduate Students 2019-2020

Tuition and Fee Payment Deadlines		
Semester	Deadline	Payment Information
Fall Semester	26 Aug 2019	
Spring Semester	13 Jan 2020	Tuition and fees can be paid by wire transfer. Other forms of payment may be accepted on a case-by-case basis.
Summer Session	25 May 2020	,,,,,

	Tuitio	on by Program
Program	Amount (Euro)	Hours Per Semester
Accounting (BS)	15,500	12-18
Business & Finance (BS)	15,500	12-18
Business Administration (BS)	15,500	12-18
Chinese Language & Culture	15,500	12-18
Civil Engineering (BS)	15,500	12-18
Electronic and Communications Engineering (BS)	15,500	12-18
Game Development	15,500	12-18
Graphic Design & Animation	15,500	12-18
Industrial Engineering (BS)	15,500	12-18
Mechanical Engineering (BS)	15.500	12-18

Fees		
Fee Туре	Amount (Euro)	Information
Activity Fee	100	Per semester, non-refundable
Application Fee	50	Upon submission of application, non-refundable
Transcript Fee	10	Per Official Transcript

Deposit Requirements and Deadlines			
Deposit Type	Amount (Euro)	Required From	Deadline
Admissions Deposit		Deposit amount is dependent upon student's home country's visa requirements.	Fall: Upon Acceptance Spring: Upon Acceptance
Housing Deposit	1250	Guarantees an accepted student a spot at AUM residence	Upon Offer Letter

Deposits are refundable only in case the student is denied a visa.

#### **Tuition and Fees for Undergraduate Students**

Deposits are refundable only in case the student is denied a visa.

\* Deposit amount is dependent upon student's home country's visa requirements.

Tuition Refund Policy		
Withdraw By	% Refund	
End of First (1st) Week of Semester	100%	
End of Second (2nd) Week of Semester	75%	
End of Third (3rd) Week of Semester	50%	
End of Fourth (4th) Week of Semester	25%	
Beyond the end of the 4th Semester Week	No Refund	

Payment Plans		
Number of Installments	Administrative Fee (Euro)	Deadline for Submission Request
Two (2)	50	7 Calendar Days before Payment Deadline

All payments must be made before a student can register for the upcoming semester. Students who do not pay their tuition, fees, and/or deposits or have not arranged for a payment plan by the specified deadlines will have a financial hold placed on their student record. Students with a financial hold will not be issued official transcripts until all amounts owed are paid.

Students remain responsible for full tuition payment for all courses in which they are registered unless the course is dropped before the end of the first week of classes. Students who do not meet the payment deadlines will be charged a late payment fee of 100 euro.

## Undergraduate Academic Policies

Every AUM student is responsible for knowing the university's rules, regulations, requirements, and academic policies. The *Student Handbook*, the *University Catalog*, and the institutional website are repositories of policy statements. Corrections, changes, or interpretations may be communicated by other means, including electronically. Any student in doubt about an academic matter should consult the Registrar's Office or his or her assigned faculty advisor. Students are subject to the university's stated policies regarding patents and copyrights.

#### Academic Advising

The university is committed in helping all students achieve success in their course of study. Ensuring that students receive appropriate academic advising is part of that commitment. Students are advised by a faculty member in their disciplines. So that faculty members will have sufficient time for each advisee, no faculty member is assigned more than twenty-five (25) students.

During Student Orientation, all students receive a current *University Catalog* and meet with their faculty advisor to discuss their programs. At these meetings, each student is informed of program procedures, courses of study and the importance of understanding the information in the *Catalog*. Advisors help to answer specific questions concerning the academic programs. Handouts outline each program, its requirements, and a suggested plan of study.

Each faculty advisor maintains advising files for each advisee. These confidential files contain information about the student's program of study, their contact information, sample four-year plans, an advisement guide, and a log of all meetings.

Students who are not in good academic standing, as discussed below, are advised of the support services, including tutoring, that are available to them and the steps they need to take to return to good standing. The Office of the Registrar may also contact students reported by a faculty member who have low performance on a course at midterm assessment, and the teacher may suggest to a student that he or she meet with the advisor.

Students are encouraged to meet with their advisor regularly during the semester throughout their academic career. Toget the most from the university advising services, students should follow these tips:

• Assume total responsibility for your education and success at university.

- Attend and participate in new student orientation to gain valuable knowledge of the wide range of support services.
- Keep in frequent contact with your advisor and follow through on referrals they make to you.
- Speak with your professors when there is a problem or if you are having difficulties in any of your classes.
- Be an active and positive member of the AUM campus community.
- Understand campus rules, academic policies, and the academic calendar.
- Understand your degree requirements and make sure you are taking the right classes.
- Arrive on time and be prepared for all advising appointments. (You should give your advisor ample notice if you are running late or cannot make it. Have respect for their time!)
- Make your advisor aware of any issues or special needs you may have.

#### Assessment/Exam Policy for Undergraduate Students

AUM Faculty shall ensure that the academic assessment of undergraduate students is fair, accurate, aligned with learning outcomes and program goals and is undertaken at an appropriate level. Students shall undergo a minimum of three (3) assessments distributed evenly throughout the semester. Assessment tools could be in the form of

- Exam.
- Project.
- Paper.
- Presentation.
- Homework assignment.
- In class quiz.
- Case Study/Analysis.

In addition to the above-mentioned assessment tools, "in class participation" may be used as an assessment tool; please refer to weighting of assessment for details on weighing. AUM faculty shall ensure that appropriate assessment tools are employed for the specific learning outcomes.

#### Weighing of assessment:

• No single assessment tool can count for more than 40% of the total grade.

- "In class participation" may be used in calculating final grade provided it does not exceed 10% of the total grade.
- The role of attendance in the final grade is dealt with under "attendance policy."

#### Attendance Policy for Undergraduate Students

- Attend all learning and teaching sessions associated with their program of study.
- Notify their course instructors in advance (in person, by phone, or by e-mail) that they will be absent from scheduled class sessions.
- Obtain prior permission from their instructor or course manager for planned absences of two or more consecutive class sessions during the semester.
- Provide a medical certificate or other corroborating evidence to explain their absence, if required by the University.

Unsatisfactory student attendance includes failure to regularly attend learning and teaching sessions without providing a satisfactory reason to instructors for absence and/or persistent late arrival at, or early departure from, learning and teaching sessions.

Where a student fails to attend classes for **two weeks cumulatively** without the University's permission, the student will receive a "non-attendance warning (NAW)," and will be required to provide satisfactory explanation for their non-attendance. With each subsequent NAW issued, a formal report on the student's non-attendance is made to their sponsor.

Where a student fails to attend classes for **four or more weeks cumulatively,** or where a recurring pat-tern of nonattendance (that is more than two NAWs) is observed over the course of the semester, the student may be deemed to have failed the course; in which case they will receive an "F" (Fail)" or "U" (Unsatisfactory)" grade, as appropriate. At this point, and at the instructor's recommendation, the Provost has the authority to instruct the registrar to remove the student from the course.

Course Instructors are responsible for reminding students of the importance of regular attendance at learning or teaching sessions, and for accurately recording student attendance. Instructors and Course Managers (Department Chairs or Program Coordinators) will be required to consult with the Provost, to ensure timely issuance of NAWs, nonattendance reports to sponsors (subject to data confidentiality stipulations) and to provide relevant academic counseling where necessary.

#### Cancellation

Under the 2019 - 2020 tuition model, no refunds will be given for cancellation of classes after the first day of semester.

#### **Class Periods**

Classes normally meet three times a week in 50-minute periods or two times a week in 75-minute periods. In some cases, usually advanced courses, class may meet once per week for 150 minutes. The university holds classes five days a week from Monday through Friday. If necessary, make up classes may be held on Saturdays. University administrative offices are closed on Saturday and Sunday.

All classes are expected to meet on the days and times published in the course schedule. Changes may only be made with the approval of the Provost. Independent study or research, internships and other programs for experimental learning, and other study opportunities may follow a different, approved time frame and schedule.

#### Change of Status, Address

AUM requires students to maintain current contact information with the Registrar's Office including permanent and local addresses, telephone numbers, student number, and legal name (as written in their passport). Addresses should be updated via the MyAUM portal or through the Registrar's Office on the appropriate form. Each student must also claim their university email account assigned at the time of admission. Students are responsible for responding to official communications via their AUM e-mail account. Name and other official identification changes require official documentation, and must be processed according to the requirements of the student's nationality

#### Changing Program / Major

Students wishing to change their program (major area of study) should make an appointment with a faculty advisor in the area of the new program. The advisor will visit with the student about the new major and complete a new *Change of Advisor/Program* form. A copy of the *Change of Advisor/Program* form will be sent to the Office of the Registrar to enter into the student information system.

A student who completes a double major will have both majors noted on the transcript. If the two majors lead to different degrees (BA and BS), that fact will be noted on the transcript, and the students will receive a diploma for each degree earned.

#### **Student Classification**

A student's class standing is not measured by the number of years attended but by the number of college-level hours completed.

0 - 29 hours	Freshman
30 - 59 hours	Sophomore
60 - 89 hours	Junior
90 - plus hours	Senior

#### **Official Communication with Students**

AUM uses electronic mail to provide official information to

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students, such as notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Stu- dents must become familiar with the content of AUM communications sent to their AUM email account, and AUM requires them to activate that account and check it regularly.

#### **Concurrent Enrollment**

Students who apply for admission to AUM usually do not seek simultaneous enrollment at another institution. Should students seek concurrent enrollment, they must obtain advance written approval from the Provost. Such approval enables a student to enroll elsewhere in a course unavailable at AUM. Catalog numbers and descriptions of courses to be taken elsewhere must be submitted with the request for approval. As for any transferred courses, students must submit an official transcript to the Registrar's Office, and grades do not compute into the AUM GPA. Students who enroll elsewhere without advance written permission while enrolled at AUM will not receive transfer credit for the course work taken.

#### **Course Credit**

Each course has a credit value. A credit represents the inclass instruction and out-of-class study per week during the 15-week semester. Normally one (1) U.S. Carnegie Credit (US) / 2 European Credit Transfer Credits (ECTS) cred- its represents 50 minutes of class instruction per week per semester, 120 minutes of laboratory experience per week per semester, or one or two 50-minute recitation sessions per week per semester, and equivalent time devoted to the course outside of class.

#### **Course Numbering**

- 000-099 Preparatory Courses that do not carry credit.
- 100-299 Lower-level undergraduate courses.
- 300-499 Upper-level undergraduate courses.
- 500-699 Graduate-level courses.

#### **Course Prerequisites and Corequisites**

Course pre-requisites or co-requisites reflect necessary preparation and conditions for attempting a course. It is the student's responsibility to be aware of these requirements as stated in the *University Catalog*, and they must have taken required pre-requisites recently enough to be of value. The instructor may drop students who have enrolled in a course for which they have not met the pre-requisites or are not enrolled in a co-requisite.

#### **Courses and Course Schedules**

Each course offered by the university has a designated course prefix (or code) and number. The course prefix represents the discipline or field of study, and the number indicates the level of the course content. MAT 101 thus indicates that the course is Mathematics and is appropriate

for students in their first year; FIN 450 indicates that the course is in Finance and is intended for fourth year students.

Courses are offered at the discretion of the Provost. AUM does not offer every course every semester. AUM offers courses at a frequency that enables students to make satisfactory progress toward their degrees.

#### Double Major

An undergraduate student may elect to complete a double major, which is either a single degree with two majors (for example a BS in two distinct disciplines), or two different degrees and majors (for example a BS in one discipline and a BA in second discipline).

A double major may be undertaken under the following conditions:

- A student must have a CGPA of 2.5 or above at the time of electing the second major.
- A student must have completed no more than 100 US/200 ECTS credit hours when electing to pursue a second major.
- A student must have completed two (2) full years of study toward the first major (120 credit hours) before applying for a double major.
- The second major may not be in the same academic department as the first.

To complete a double major the following conditions must be met:

- A student must meet all the degree requirements for both majors.
- A student must complete at least 24 credits (48 ECTS) in addition to those required by the first major.
- No course substitutions will be available (to a student) in order to complete the requirements for a double major.

#### **Final Exams**

Final exams are usually given at the end of undergraduate courses, in the 15<sup>th</sup> week of the semester. **Except for project submissions, laboratory courses, and studio courses, no exam or assessment mechanism of any kind may be given during the last week of classes.** Exams may not exceed the scheduled length (2 hours for most courses). The final exam schedule is established at least one week prior to the beginning of the semester by the Registrar's Office, and all course instructors include the day and time of the final exam on their syllabi. AUM posts the final exam schedule on campus. No final exam may be given at any date and time other than that established by the Registrar at the beginning of the semester.

An instructor who is assigning a take-home exam or significant end-of-semester paper or project should so

inform the students on the syllabus at the beginning of the semester. Take home exams should be distributed by the beginning of the last week of classes so that students can coordinate them with preparation for other exams. Students must not be required to submit exams before the date of the regularly scheduled exam for a course. Accommodation will be made for students with more than one final exam scheduled in the same time period. Re-taking (or re-sitting) a final exam is not permitted.

#### **Absence from Final Exams**

Absences from final exams are not to be excused except for sickness on the day of the exam or for other cause approved by the Provost. The effect of an unexcused absence from an undergraduate final exam shall be determined by the weighted value of the exam as stated in the course syllabus provided by the instructor. If absence from a final exam is unexcused, the grade for the course is entered as "F."

#### Grade Report

Students may print a grade report for their own records or to issue to a third party. Official transcripts and official semester grade reports for tuition reimbursement are obtained through the Registrar's Office.

#### **Independent Study Policy**

Each academic department has for its degree program(s) an Independent Study course, which provides an opportunity for advanced work for undergraduates under the close supervision of a faculty member that enables students to pursue problems or issues of special interest with the guidance of the instructor in conferences. Students meet weekly with the project instructor for guidance in research, analysis, and composition of the project report or presentation. To be eligible to enroll in an Independent Study course, students must complete a minimum of 60 US/120 ECTS credits, must have a 3.0 (B) or better average, and seek approval through a completed Independent Study Permission form. An Independent Study course carries variable credit, from 1-4 US/2-8 ECTS. Independent Study may be repeated once for a maximum of 8 US/16 ECTS credits.

Independent study should not be used as a way to take a course that is normally offered by the department and listed in the *University Catalog*, nor may students repeat courses in an independent course format.

#### Instructions for Students:

- Discuss your interest in doing an independent study with your faculty advisor to make sure that it meets the requirements of your degree plan.
- Meet with the faculty member whom you wish to direct your study.
- Be certain you understand what is necessary to complete the project and the work you need to do for a desired grade.

- Work with the faculty member to complete the Independent Study Permission form.
- Sign the form, acknowledging your desire to register for the course and your understanding of what it will require.
- Check with the Registrar's Office to make sure the form was approved and your registration for the course completed. Independent Study has the same add/drop deadlines as all other courses at AUM.

#### Instructions for Faculty Members:

- Meet with any student requesting an independent study.
- When reviewing requests, be sure that the students are very clear and specific about their responsibility for completing the study with specific tasks, reports, and readings.
- Assign the number of credits that are appropriate for assessing the study and include that information in the written request.
- Be specific regarding your standards for assessing the study and include the standards in the written request.
- Send the signed, completed form to the Chair/ Coordinator of the department for approval and signature.
- Chair/Coordinator forwards the signed form to the Provost for approval and signature.
- Provost forwards the signed form to the Registrar, with copies to the Department Chair/Coordinator, Instructor, and the student's advisor.

#### Intellectual Property (Student Work)

Intellectual property (IP) is property (an idea, invention, or process) that derives from the work of the mind or intel- lect. IP is also an application, right, or registration of an idea, invention, or prose. AUM deems copyrightable works, including publications and patentable works developed in connection with course work by students who are not AUM employees to be intellectual property that belongs to the student. However, AUM may claim copyright ownership of a work or ownership of a patentable invention when extraordinary use of university facilities, personnel, or resources is made in the development of the materials or invention, especially when unrelated to course work. Students are subject to the university's stated policies regarding patents and copyrights.

#### Leave of Absence

Occasionally, students must leave the university for a semester or two because of circumstances beyond their control. Others find they simply need a break from studying. In such circumstances, taking a leave of absence might be wise. Students who have an approved leave of absence for a semester or a year may register for the semester in

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which they plan to return without applying for readmission. Unless there are extenuating circumstances such as illness, a leave of absence is not normally given to a student who leaves the university during a term.

A leave of absence maintains the student's status while away for up to two semesters. Students who wish to take a leave of absence must do so through the Office of the Provost. All requests for a leave of absence require the completion of the *Leave of Absence* Form, and the Provost's approval prior to the approval of the respective department chair/coordinator of the student's program. If the *Leave of Absence* form is approved, and the student has cleared all financial obligations, the effective date of the leave of absence is noted on the student's permanent academic record. The effective date is the date used for calculating billing or refunds. No grades for the current semester other than a "W" for the current semester are recorded.

#### **Midterm Exams**

The midterm exam may be scheduled by the instructor during the eighth week of the semester, and covers the content covered during the previous weeks. The grade constitutes no more than 20% of the final grade. The date of the midterm exam must be included in the course syllabus. If the instructor teaches multiple sections of the same course, the date for a common midterm exam must be scheduled, and the students informed of the date at the beginning of the semester. Students may be excused from the midterm exam and given a makeup exam on another date only if there is documented evidence of illness or other extenuating circumstances. A makeup exam must be approved by the Chair/Coordinator of the department.

#### **Midterm Reports**

Faculty report midterm progress for all semester-long courses so that students will have a clear idea of their standing in each course midway through the semester. The reporting period extends from the fifth through the ninth week of the semester, allowing flexibility as to when individual faculty provide reports for their classes. Midterm grades are reported as "S" (satisfactory – C and above), "U" (unsatisfactory – C-, D+, D and F). Students should check with their instructors as to when reports will be complete and available for viewing. These progress reports, which appear as "Midterm Grades," are not part of the student's official record. They are not calculated in the GPA, nor do they appear on any official or unofficial transcript. The Registrar distributes the midterm progress report to the student, his or her faculty advisor, and the Office of Student Affairs.

#### **Repeating Courses**

Undergraduate degree students may repeat courses for which they seek a higher grade. A grade received in a repeated course replaces the previous grade in the same course in the calculation of the GPA, even if the more recent grade is lower. The new calculation does not change the academic standing or Dean's list notations for the earlier semester. Every registration for a course and its grade remains part of a student's transcript. Duplicate credit is not given. No adjustment to the cumulative GPA will be made if the grade in the repeated course is "W". A grade in an AUM course will not be excluded from the CGPA based on the subsequent taking of an equivalent course at a transfer institution. Note that individual programs may dis- allow students from retaking certain high-demand courses simply for the purpose of improving their grade.

#### **Requests for Academic Actions**

All requests for academic actions, such as special permissions or exceptions to published academic regulations as found in the *University Catalog*, must be submitted to the Provost. Those who need assistance with the academic actions form should consult the Director of Student Affairs.

#### Schedule of Classes

AUM makes available in the Registrar's Office the list of courses offered around mid-semester for the following semester's classes.

#### Second Degree Requirements

Students who already have a University Degree can apply for a Second Degree at AUM. The number of credits required for graduation will be determined by the concerned department; however, the minimum residency requirement is 30 credits (60 European Credit Transfer Credits (ECTS)).

#### Semester Grades

Students may access and print their semester grades and other academic information from the AUM student portal.

#### **Student Directory Information**

Under provisions of the Family Education Rights and Privacy Act of 1974 (FERPA), as amended, students have the right to withhold disclosure of directory information aslisted.

(20 U.S.C. 1232g(b)(4)(a). Directory information consists of student's name, local and permanent address, telephone number, date and place of birth, major field of study, classification, participation in officially recognized activities and sports, height and weight if a member of an athletic team, date of attendance, degrees, awards and honors received, enrollment status (part-time, full-time, undergraduate, graduate), the most recent educational institution attended and other information which would make the student's identity easily traceable.

Students should carefully consider the consequences of a decision to withhold directory information as future requests from non-institutional persons and/or organizations will be refused. Filing a request to withhold information will also keep a student's name from being listed for publication for honors such as Dean's List or in the

graduation program. A request form to withhold directory information must be filed in the Office of the Registrar, no later than the 6th class day of the fall or spring semesters or third-class day of summer sessions. A request to withhold directory information remains in place until the student informs the Registrar in writing to remove it.

#### Summer Term

During the summer term a student may register for one or two courses. All attendance, grading, and other academic policies apply to the summer term as in the two academic semesters.

#### Transcripts

Students may obtain official transcripts from the Registrar's Office. Students must submit a transcript request form for processing. Official transcripts are 10 Euros per copy. Unofficial copies can be obtained through the AUM website at no cost. A maximum of only two official transcripts can be requested in any given week.

#### **Transfer Credits**

Courses taken at other institutions of higher education may be counted toward a degree, but they are not computed in the AUM GPA. Only courses with a "C" or better will be transferred into AUM and will be noted on the transcript with a grade of "TR."

#### Withdrawal

Official withdrawal removes students from any academic program and cancels student status at AUM. In order to return to the university, students need to apply for read-mission through the Admission Office. Students who wish to withdraw must complete a *Withdrawal* form available at the Registrar's Office and get clearance from all university departments. If the student completes the withdrawal process satisfactorily and all financial obligations to the university clear, the Registrar notes the effective date of withdrawal on the student's permanent academic record. AUM uses the effective date for calculating billing or refunds. The Registrar for the current semester records no other grades than "W."

#### ACADEMIC PROGRESS

#### **Academic Excellence**

To honor academic excellence, an AUM Dean's List is published comprising all students who have a GPA equal to or greater than 3.6 after completing at least 12 credits, subject to the following conditions:

- The student has completed all work assigned and does not have a grade of "I" in any of these courses.
- The student has no grade below " B."

The student has not repeated a course to improve the grade in any of the courses.

#### Academic Standing

- **Dean's List:** Full-time students whose semester GPA is 3.6 or above, no grade below B, no grade of "I" and has not repeated a course to improve the grade in any of the courses AUM places on the Honor List.
- **Good Standing:** Undergraduate students with semester and cumulative GPA of 2.0 and above.
- **Probation:** After completing 30 US/60 ECTS credit hours of study, any undergraduate student with a semester GPA below 2.0 AUM places on Probation.
- **Suspension/Dismissal:** AUM suspends or dismisses students on probation who do not return to good standing within two semesters.

At the end of each semester, the Registrar's Office will identify cases of non-compliance with the academic standards.

- **Warning:** Students who have received a semester GPA that has fallen below 2.0 receive an academic warning. Students who have two warnings during any four consecutive periods of enrollment AUM places on probation during the academic period of enrollment following the second warning, unless other suspension criteria apply.
- places Probation: AUM students whose Cumulative GPA (CGPA) has fallen below 2.0 on academic probation. To remain in the program, students on academic probation must revert to good academic standing (2.0 CGPA and above) within two semesters from the date AUM puts them on probation. Students on academic probation must limit registering for only a maximum of 12 credit hours (24 ECTS) in any fall or spring semester. The Registrar's Office then informs each probationary student in writing of the specific outcomes required for reversion to good academic standing.

Students on academic probation remain ineligible to hold or run for office in any organization or activity associated with the university; travel to or compete in any event; or, serve as a working member of any student organization.

 Suspension: Students on probation for two semesters who fail to improve their CGPA accordingly may be suspended. Students on suspension may not enroll for at least one full academic semester. They must officially request readmission and write a letter to the Dean of Student Affairs stating what they have been doing during their period of suspension, and what they plan to do differently upon return if readmitted to AUM.

Following a first suspension, students cannot take courses for

#### **Policies and Procedures**

two academic periods unless suspended at the end of a summer term, in which case the student will be unable to enroll for the fall semester, but may return for the spring semester. Students receiving a second suspension may not take courses for one full academic year. A third suspension results in dismissal from the University.

Students who have been suspended and are readmitted may be subject to dismissal if they do not earn a minimum of a 2.0 (C) average during their first semester after read- mission. For a student who has been dismissed AUM rarely approves readmission.

#### Satisfactory Progress:

To make satisfactory progress toward degree completion, a student must attain a cumulative GPA of 2.0 or better.

#### **GRADING INFORMATION**

#### **Grade Appeals**

Although faculty members remain the best judges of student performance, sometimes a student believes a grade is unfair. In such cases, the student first asks the faculty member to reconsider the grade. If the student is not satisfied, an appeal may be made to the Provost. Unless there is new or additional information to substantiate an appeal, the Provost has the final authority in determining the appeal decision. If the instructor is no longer associated with AUM, the Provost will appoint a faculty surrogate, who will assume the authority of the instructor of record at this level of appeal. If the matter is not resolved at this point, the Provost will hear the case and make a final decision. Grade appeals are not accepted after the first two weeks of the start of the following semester (spring for fall grades, fall for spring and summer grades).

#### Grade Change

Once a final grade has been recorded by the Office of the Registrar, it can be changed only in cases of computational or recording error, or pursuant to a successful appeal of grade. AUM never accepts additional work of any type submitted to improve a grade after faculty determines the final grade and sends it to the Office of the Registrar, except in the case of an "I" or "IP" grade. All changes of final grades must be initiated, approved, and recorded by the last day of classes of the next regular semester (spring for fall grades and fall for spring and summer grades). All grade changes must be submitted utilizing the *Grade Change Request* form.

#### Pending Grade Appeal

In select cases, a student may request the Provost to delay imposing academic suspension because of a pending grade appeal that could change the student's status. Such approved delay allows the student to register. If the grade appeal is successful, the Registrar corrects the official transcript and the student continues in classes as a student in good academic standing. With an unsuccessful grade appeal, AUM requires the student to stop attending all classes immediately. No record of registration for the academic period appears on a transcript, and the student receives the appropriate refund as of the decision date.

#### **Grading Information**

Undergraduate Grading System			
Grade	GPA Points	Percentage Scores	Standard
А	4.0	94.00 - 100	Excellent
A-	3.7	90.00 - 93.99	Excellent
B+	3.5	86.00 - 89.99	Very Good
В	3.0	83.00 - 85.99	Very Good
B-	2.7	80.00 - 82.99	Good
C+	2.5	76.00 - 79.99	Good
С	2.0	73.00 - 75.99	Good
C-	1.7	70.00 - 72.99	Unsatisfactory
D+	1.5	66.00 - 69.99	Unsatisfactory
D	1.0	63.00 - 65.99	Unsatisfactory
F	0	0.00 - 62.99	Failing

Course Grade Distribution		
Course Work Percentage		
Midterm Exam	No more than 20%	
Final Exam	No more than 40%	
Class Assessment No more than		

Grades Not Included in GPA Calculation					
Grade	Standard				
Ι	Incomplete				
S	Satisfactory				
Т	Transfer				
U	Unsatisfactory (Failure)				
W	Withdrawal				
NC	Not Counted				

#### Additional Grade Notations

Satisfactory/Unsatisfactory (S/U):

An "S" grade reflects passing work in a course (A, A-, B+, B, B-, C+, C); a "U" grade reflects a failure (C-, D+, D, F). "S" and "U" have no effect on grade point average.

#### Incomplete (I):

Faculty assign this grade to students who are passing a course but are unable to complete all the course work or the final exam for a verified reason beyond their control. The student must then complete all the requirements by the end of the next semester, not including any summer term, and the instructor must turn in the final grade by the end of the that semester's grading deadline. Unless the faculty files an explicit written extension, the grade of "I" is changed to an "F" to indicate that the course requirements have not

been fulfilled. Students who have filed their intention to graduate have only six weeks from the date of tentative degree conferral to resolve any incomplete grades. The Registrar does not calculate an "I" grade in the student's grade point average.

#### In Progress (IP):

The grade of "IP" indicates that the student is making progress in a course, writing a thesis or dissertation, or participating in an internship that extends beyond one semester or summer term. The grade of "IP" has no effect on the student's grade point average.

#### Withdrawal (W):

The grade of "W" on a course indicates that the student has dropped the course. While it has no effect on the GPA, dropped courses are part of attempted course credits that serve as the basis for the student's credit level. A "W" for all courses in a given semester and the transcript notation "withdrawn" indicates that the student withdrew from AUM.

#### Grade Point Average (GPA)

The Registrar assigns grade or quality point values to letter grades as indicated in the grading system. The Registrar computes quality or grade points by multiplying the value of a letter grade by the number of US credits for that course (2 ECTS = 1 US). The Registrar computes the GPA by dividing the quality points earned by the number of US credits graded "A" through "F" (GPA hours). The GPA computed for all institutional credits gives the cumulative GPA, (CGPA), which is the basis for the University's progression policies.

The grade point average (GPA) is the average of end-ofterm grades. A GPA can be figured for one term or, using the same method, a student can calculate the cumulative, or overall, GPA.

As an example, use the following grades for a semester:

- 3-hour English Course "C"
- 3-hour computer course "B"
- 5-hour math course "B"
- 3-hour business course "A"

To figure the GPA for a semester, first multiply the number of credit hours for each course times the numerical value of the grade (A=4, B=3, C=2, D=1, F=0). This will give the quality points for each course (e.g., to determine the grade point for English, multiply 3 x 2).

Number of Credit Hours		Numerical Grade Value		Grade Points	Course
3	х	2	=	6	English
3	х	3	=	9	computer
5	х	3	=	15	math
<u>3</u>	х	4	=	<u>12</u>	business
14				42	

The students, like the Registrar, divide the total number of credit hours (14) into the total number of grade points (42) to calculate the GPA (3.0).

#### 42 grade points ÷ 14 credit hours = 3.0 GPA Incomplete Grade

Incompletes, not completed by the end of the subsequent semester, excluding the summer term, automatically become "F" grades.

#### **GRADUATION INFORMATION**

#### Academic Standing Requirement

A student must be in good academic standing to be eligible for graduation.

#### Application for Graduation

By the end of the fifth week of classes in their final semester, students who expect to complete degree requirements must confirm their intention to graduate through the Registrar by completing a *Degree Completion Application* form. Students must make a separate application for a degree in a second major or concentration.

#### Commencement

Commencement provides an opportunity for students and their families to celebrate their achievement. AUM circulates details about commencement within a month of the date of the ceremony.

#### Conferral of Degree

To qualify for a bachelor's degree, students must have been admitted, completed at least 120 US credits (240 ECTS credits), or the number indicated in the *University Catalog* for the specific degree program, fulfilled all degree requirements and achieved a cumulative GPA of 2.00 or higher. Students seeking a bachelor's degree must complete at least 45 US (90 ECTS) credits of upper- division courses (numbered 300 or above) toward graduation requirements. Some programs have higher standards for grades in majors or minors. Students must be registered in the semester prior to graduation. Students not registered for course work in the term of graduation must obtain.

AUM confers degrees three times per year.

#### Policies and Procedures

- January 15 for Fall graduates,
- June 15 for Spring graduates, and
- August 15 for Summer graduates.

#### **Graduation Requirements**

The University stipulates graduation requirements for any individual student in effect when the student began matriculated studies in the degree program. Every individual student is personally responsible for meeting all graduation requirements as detailed in his or her *University Catalog* year.

Important: Course information, content and prerequisites may be subject to change as a result of the university's commitment to a process of continual improvement in academic programs. Students must comply with the most up-to-date course requirements.

#### Names on Degrees

AUM spells the names of students in English when printed on degrees exactly as they appear on their passports or identity cards. If a name on a passport or an identity card does not appear in English, then the spelling of the name AUM prints according to the personal preference of the student.

#### **REGISTRATION INFORMATION**

#### Academic Load

The minimum load for full-time undergraduate students is 12 US/24 ECTS credit hours per semester. Students may register for up to 18 US/36 ECTS credit hours in a semester without special approval. If a student wishes to enroll for more than 18 US/36 ECTS credit hours in a semester the student must receive the written permission of the Provost. A student may enroll in the university as a part- time student, which means that the student registers for fewer than 12 US/24 ECTS credit hours per semester. A student may study part-time for no more than 7 semesters, at which point the student must enroll full-time to complete the degree or leave the university.

#### Add/ Drop

Students may add/drop any class until the last day to add/ drop (see Academic Calendar for dates). If dropping the last enrolled class, see Withdrawal Procedures as outlined in *University Catalog* for necessary procedures.

#### Advisor's Permission to Register

AUM requires all students to obtain their faculty advisor's approval for registration. AUM expects all students to consult with their advisors concerning course registration each semester.

#### **Course Registration**

The Registrar makes available the Schedule of Classes for the next semester by the middle of the semester. AUM reserves the right to change the class schedule as necessary, and courses listed in the Schedule of Classes may be canceled for insufficient enrollment.

#### **Course Selection and Registration**

By mid-semester, the Registrar makes available the class schedule for the following semester, both in the Office of the Registrar and on the website. Students may select courses in consultation with their faculty/academic advisor, and they can then register online or submit a completed *Course Registration Request* Form to the Office of the Registrar by the published deadlines.

#### **Registration Changes**

The student must complete registration changes within the scheduled adjustment period as indicated in the Schedule of Classes. AUM publishes the last day for adding or dropping a course on the AUM Academic Calendar and on the web- site each semester.

All students must complete their initial enrollment before the first day of classes for the semester. Retroactive cred- its will not be awarded to students who report that they attended classes but were not on the official rosters. Students will not receive credits for courses unless their names are on the official class rosters and on final grade sheets.

After the date listed in the Schedule of Classes for adding courses, AUM limits added actions to unusual circumstances beyond the student's control, and these require approval by the Provost in consultation with the faculty/ advisor concerned.

AUM does not cancel registration for a student's failure to drop courses properly, and registration is also not canceled for failure to attend classes unless stated otherwise in the Schedule of Classes. Any classes for which a student enrolls past the drop deadline remains part of the student's official academic record. No change of registration is complete until it is processed in the Student Information System.

Students do not receive written confirmation of schedule changes. They are responsible for checking their schedules before the end of add/drop period to verify that their schedules are correct and that they are properly enrolled. AUM does not allow students to remain in classes unless they are properly enrolled. Students remain responsible, both financially and academically, for all courses in which they remain officially enrolled.

#### **Registration Procedure**

Students should register for courses prior to the beginning of each semester. AUM advises students to follow these registration procedures:

Students should start reviewing their academic

program and their study plan.

- Students should plan to meet their academic advisors and review the upcoming semester's course schedule to choose their courses and complete the online registration procedure.
- Students must meet with their advisor to approve their schedule of classes prior to online registration.
- After approval from the advisor, the student must enter the approved courses into the online registration system to officially register.
- Once their advisor electronically approves the courses and it is accepted by the system, students must proceed to the Finance Department to settle their bill.

Students must be present at the first meeting of every course (lecture and laboratory) to validate their registration. If students cannot attend the first meeting, they must notify the instructor beforehand if they intend to continue in that class. Otherwise, their names may be removed from the class roster in both lecture and lab.

Students must pay their tuition in full or they may be dropped from their classes for nonpayment. AUM may also drop students from their classes administratively due to academic suspension, dismissal, or termination.

#### Schedule of Classes

The list of courses offered is available around mid-semester at the Registrar's Office for the following semester's classes.

### **General Education Program**

Students in all academic programs at AUM must complete the general education program, which complements and contributes to the fulfillment of the mission of the university. AUM requires that students take a set of courses beyond their major to develop their understanding of broad disciplinary areas and the connections between and among them. Courses approved for general education stress experimental and activity-based learning and the application of knowledge to concrete situations. The General Education requirements are a total of 41-42 US/82-84 ETCS credits.

#### **Program Objectives**

## The General Education Program aims to develop self-directed individuals who

- Are engaged and committed citizens aware of the global effect of social, political, and economic change.
- Understand the nature of tradition and world cultures, understand the impact of the past on the present, and respond sensitively in culturally diverse environments.
- ♦ Are aware of ethical issues and think critically to make informed and responsible decisions.
- Use empirical and logical reasoning to assess evidence, evaluate data, make decisions, and solve problems.
- Understand scientific principles and contemporary developments in science and technology and their impact on human life and the environment.
- Communicate clearly and effectively in writing and speech and understand the theoretical and stylistic strategies that impact diverse audiences for various purposes.
- Can locate, access, critically evaluate, and use information ethically and efficiently for a variety of purposes, and engage in independent investigations and research.
- Can interpret the meaning of different forms of artistic expression within historical and theoretical con-texts and respond to works of art.

#### **Program Learning Outcomes**

#### Upon graduation the student will have experience in

Effective written and oral communication skills and the ability to use current technology to create a final written or oral product.

- Recognition, analysis, and evaluation of ethical issues and the ability to defend their positions through reasoned argument.
- Effective use of logical and mathematical reasoning to analyze quantitative data and solve problems for personal and professional purposes.
- Effective use of appropriate tools to access information, evaluate sources, and conduct independent research.
- An ability to employ the basic concepts of ethics or one of the social sciences to analyze a contemporary issue.
- Recognition, analysis, and resolution of scientific problems through the application of scientific methods.
- ♦ Effective use of computers to incorporate technology into academic content and to access information efficiently.
- ♦ A recognition of contributions from multicultural contexts that enhance human experience, and the interdependence of the global community to facilitate coexistence in multicultural environments; and/ or a recognition of the historical contexts and variety of artistic forms, the nature and norms of creative processes that shape creative works, and the ability to engage in creative production of original artifacts.

#### **General Education Degree Requirements**

To achieve these outcomes, the General Education Program requires students to take approximately one third of their total credits in the following five thematic areas:

- Communication in a Global Society (3 courses).
- Data and Quantitative Literacy (1 course).
- Scientific Inquiry (3 courses in three different disciplines for BS, 2 courses in two different disciplines for BA).
- Tradition and Innovation in Arts and Humanities (3 courses BS, 4 courses BA).
- Understanding our Past and Present through Social Sciences (3 courses).

GENERAL EDUCATION (GE) PROGRAM REQUIREMENTS										
		Bach	elor of Ai	rts	Bache	elor of Scie	ence			
Thematic Areas		Number of courses	US CR	ECTS CR	Number of Courses	US CR	ECTS CR			
	US/	2	0	10	•	•	10			
I. Communication in a Global Society	ECIS	3	9	18	3	9	18			
ENG 101 English Composition I	3/0									
COM 101 Communication in a Multisultural Setting	3/0									
U Data and Quantitative Literacy	3/0		2.4	6.0		~ ~ ~	6.0			
II. Data and Quantitative Literacy		1	3-4	6-8	1	3-4	6-8			
MAT 101 Intro to Data Analysis, Probability, and Stats	3/6									
	4/8									
III. Scientific inquiry (SI)		2	8	16	3	12	24			
BIO 101 Unity of Life	4/8									
CHE 101 Introduction to Chemistry	4/8									
CHE 111 Introduction to General Chemistry I	4/8									
PHY 101 Introduction to the Physical Universe	4/8									
PHY 111 Physics with Calculus I	4/8									
(More than one course in a single discipline does not meet the requirement)										
IV. Tradition and Innovation in Arts and Humanities		4	12	24	3	9	18			
ATH 101 Arts of the Mediterranean	3/6									
PHI 101 Introduction to Philosophy	3/6									
PHI 102 Applied Ethics (required for all degrees)	3/6									
REL 101 Religious Worlds in Comparative Perspective	3/6									
Understanding Our Past and Present through Social		2	٥	10	2	٥	10			
Sciences				10			10			
HIS 101 History of the Mediterranean	3/6									
PSY 101 Introduction to Psychology	3/6									
SOC 101 Introduction to Sociology	3/6									
GENERAL EDUCATION TOTALS		13	41-42	82-84	13	42-43	84-86			

BA Degree 41 US / 82 ECTS or 42 US / 84 ECTS BS Degree 42 US / 84 ECTS or 43 US / 86 ECTS

US CR = U.S. Carnegie Credits

ECTS CR = European Credit Transfer Credits

### ACADEMIC PROGRAMS

A degree program—the major or field—is a program of study that normally requires at least 40 semester courses in general education and a specific field. The degree and major or field appear on the diploma. The Bachelor of Science programs at AUM all require the completion of a minimum of 120 U.S. Carnegie unit credits (US)/240 European Credit Transfer System (ECTS) or approximately 40 courses, including general education courses. Some programs require additional coursework.

Degrees normally take four years to complete with a minimum of three years, assuming summer enrollment. If a degree is not completed within six years, all coursework in the major is re-evaluated for its current relevance. A student who wishes to graduate with a bachelor's degree in two or more areas must meet the requirements for the major in each field.

A concentration is a second-order component of a degree program. A concentration consists of at least 12 US/24 ECTS credit hours that are not applied to any other concentration.

#### **Degree Completion Requirements:**

- Successful completion of all credit hours as specified by the program curriculum with a minimum CGPA of 2.0. (3.0 for the MBA).
- Completion of the minimum enrollment period and not exceeding the maximum enrollment period.
- Undergraduate transfer or concurrently enrolled students are required to complete a minimum of 50% of the required credit hours at AUM, including the majority of the final 60 US/120 ECTS credit hours.

#### **Enrollment Periods:**

- The standard enrollment period for a Bachelor of Science is eight (8) academic semesters or four (4) academic years. An academic year consists of two (2) academic semesters in addition to an optional summer session or term.
- The minimum enrollment period for a Bachelor's degree is three (3) academic years.
- The maximum enrollment period for a Bachelor of Science degree is six (6) academic years.
- Summer session or term is not considered an academic semester for the purposes of calculating enrollment periods.

## AUM currently offers twelve (10) bachelor's programs and one (2) master's program:

#### Undergraduate Degrees:

- Accounting
  - 0 Bachelor of Science (BS)
- Business Administration
  - 0 Bachelor of Science (BS)
- Business and Finance
  - 0 Bachelor of Science (BS)
- Civil Engineering (BS)
  - 0 Bachelor of Science
- Chinese Language and Culture
  - 0 Bachelor of Arts (BA)
- Electronics and Communications Engineering
  - 0 Bachelor of Science (BS)
- Game Development
  - 0 Bachelor of Science (BS)
- Graphic Design and Animation
  - 0 Bachelor of Arts (BA)
- Industrial Engineering (BS)
  - 0 Bachelor of Science
- Mechanical Engineering (BS)
  - 0 Bachelor of Science

#### Graduate Degree:

- Business Administration
  - 0 Master of Business Administration (MBA)
- Engineering Management
  - 0 Master of Science (MS)

#### Accounting

#### **Bachelor of Science (BS)**

#### Introduction

The BS in Accounting is intended initially for students who are pursuing an accounting career in an international firm that adopts/recognizes US-based accountancy qualifications. This program contains all necessary courses to pre- pare for the Uniform CPA Examination as administered by the American Institute of CPAs. International candidates are allowed to sit for the Uniform CPA Exam in a number of

international locations.

#### **Program Mission**

The mission of the Business Administration program is to provide students with skills and knowledge required to understand and analyze current accounting issues, and to enable students to pursue successful business, management, and accounting careers in a responsible and sustainable way.

#### Program Objectives

#### Knowledge

- A broad knowledge of fundamentals of business administration, achieved through the modules of the business score, including:
  - 0 Microeconomics.
  - 0 Macroeconomics.
  - 0 Finance.
  - 0 Management.
  - 0 Operations Management.
  - 0 Management Information Systems.
  - 0 Business Ethics.
  - 0 Organizational behavior.
  - 0 Consumer behavior.
  - 0 Marketing.
- A solid foundation in the theory, principles, and procedures of the discipline and professional practice of accountancy, including the study of financial, managerial and tax accounting and auditing and systems;

- Thorough preparation for professional certification;
- An understanding of the profession of accountancy and its role in modern business environments;
- An awareness of the need for continuing intellectual development through either professional or academic means.

#### Skills

Undergraduate accounting majors will have the following goals and objectives:

- Technical Competence. Students will be able to apply and explain the application of accounting standards and regulation and, where appropriate, international accounting standards.
- Research Skills. Students will be able to apply and explain the application of accounting standards.
- Ethical Awareness. Students will be able to recognize ethical issues and, where appropriate, resolve those issues.
- **Teamwork.** Students will effectively contribute to the performance of a multicultural, diverse team.
- **Critical Thinking.** Students will be able to apply accounting knowledge in new and unfamiliar circumstances through a conceptual understanding of accounting policies and theory in order to make informed decisions.
- Global Perspective. Students will be able to understand global business issues in general and demonstrate an understanding of international accounting standards in particular.

#### Competences

- Comply with local and international accountancy rules and regulations.
- Collaborate with a management team to lead the financial operations of a business.
- Guide a team in structuring accountancy processes of a business.

#### **Program Learning Outcomes**

## Communication Skills, the learner will be able to achieve the following:

• Written Communications: Students will demonstrate written communication skills appropriate for general business situations with emphasis on technical accounting contexts.

 Oral Communications: Students will create and effectively deliver oral presentations that are concise and informative and conduct research appropriate to the task at hand. Learning Skills, the learner will be able to achieve the following:

## Learning Skills, the learner will be able to achieve the following:

- Students will be able to proceed to graduate work in Accountancy if they achieve the required academic standards.
- Students will be able to proceed to industrybased experiences that will position them to sit for the US-based Certified Public Accountant Exam.
- Students will be able to analyze complex business and accounting issues.
- Students will be able to display advanced knowledge of business and accounting theories and current business and accounting issues.
- Students will be able to analyze and identify the impact of business and accounting realities on

economic, social, and environmental sustainability.

## Degree Requirements for Accounting

The BS in Accounting degree is a four-year degree program. In their first and to some extent their second year, students focus on completion of the university's General Education Program (42-43 US/84-86 ECTS credits), with specialized courses in general business and accounting gradually introduced. Into the third and fourth year students focus increasingly on business, accounting, and finance topics. To earn a bachelor's degree, students must satisfactorily complete at least 120 US/240 ECTS credits, complete the General Education Program, fulfill all the requirements for the BS in Accounting degree, and achieve a CGPA of 2.00 or higher.

The degree is designed to be completed in four years, assuming students make satisfactory progress toward the degree and do not interrupt their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the pro- gram, which are also detailed in the University Catalog. If a degree is not completed within a period of six years all coursework in the major will be reevaluated for its current relevance.

## ACCOUNTING (BS) DEGREE REQUIREMENTS

		Number of Courses	US CR	ECTS CR
I. University General Education Requirements		13	42-43	84-86
For Details, See Section University General Education Requirements				
II. Business Core Courses	US/ECTS	14	42	84
ACC 101 Principles of Accounting I	3/6			
ACC 102 Principles of Accounting II	3/6			
ECO 101 Microeconomics	3/6			
ECO 103 Macroeconomics	3/6			
FIN 201 Introduction to Finance	3/6			
FIN 301 Money and Markets	3/6			
MAT 201 Business Statistics	3/6			
MGT 101 Principles of Management	3/6			
MGT 301 Operations Management	3/6			
MGT 310 Principles of Marketing	3/6			
MGT 340 Management Information Systems	3/6			
MGT 350 Consumer Behavior	3/6			
MGT 360 Organizational Behavior	3/6			
PHI 301 Business Ethics	3/6			
III. Accounting Major Courses	US/ECTS	6	18	36
ACC 201 Intermediate Accounting I	3/6			
ACC 202 Intermediate Accounting II	3/6			
ACC 301 Advanced Accounting	3/6			
FIN 310 Taxation	3/6			
FIN 350 Auditing	3/6			
FIN 420 Research and Decision Making	3/6			
IV. Free Electives	US/ECTS	6	18	36
Free Elective	3/6			
Free Elective	3/6			
Free Elective	3/6			
Free Elective	3/6			
Free Elective	3/6			
Free Elective	3/6			
ACCOUNTING TOTALS		39	120	240
US CR = U.S. Carnegie Credits	ECTS CR = E	uropean Crea	dit Trans	fer Credits

## SAMPLE FOUR-YEAR SCHEDULE

#### **Bachelor of Science in Accounting**

First Year, Semester 1					First Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR E	CTS CR		
ENG 101	English Composition I	3	6	BIO 101	Unity of Life and Lab	4	8		
HIS 101	History of the Mediterranean	3	6	ENG 102	English Composition II	3	6		
MAT 101	Introduction to Data Analysis, Probability, and Statistics	3	6	MAT 201	Business Statistics	3	6		
REL 101	Religious Worlds in Comparative Perspective	3	6	MGT 101	Principles of Management	3	6		
	Free Elective	3	6						
	TOTAL	15	30			13	26		

	Second Year, Semester 1	Second Year, Semester 2					
Course	Title	US CR E	CTS CR	Course	Title	US CR E	CTS CR
ACC 101	Principles of Accounting I	3	6	ACC 102	Principles of Accounting II	3	6
CHE 101	Introduction to Chemistry and Lab	4	8	COM 101	Communication in a Multicultural Setting	3	6
ECO 101	Microeconomics	3	6	ECO 103	Macroeconomics	3	6
	General Education: Arts / Humanities	3	6	PHY 101	Introduction to the Physical Uni- verse and Lab	4	8
	Free Elective	3	6	PSY 101	Introduction to Psychology	3	6
	TOTAL	16	32			16	32

	Third Year, Semester 1				Third Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ACC 201	Intermediate Accounting I	3	6	ACC 202	Intermediate Accounting II	3	6
FIN 201	Introduction to Finance	3	6	FIN 301	Money and Marketing	3	6
MGT 340	Management Information Systems	3	6	MGT 360	Organizational Behavior	3	6
	General Education: Arts / Humanities	3	6	SOC 101	Introduction to Sociology	3	6
	Free Elective	3	6		Free Elective	3	6
	TOTAL	15	30			15	30

Fourth Year, Semester 1					Fourth Year, Semester 2					
Course	Title	US CR	ECTS CR	Course	Title	US CR I	ECTS CR			
ACC 301	Advanced Accounting	3	6	FIN 310	Taxation	3	6			
MGT 301	Operations Management	3	6	FIN 350	Auditing	3	6			
MGT 310	Principles of Marketing	3	6	FIN 420	Research and Decision Making	3	6			
PHI 301	Business Ethics	3	6	MGT 350	Consumer Behavior	3	6			
	Free Elective	3	6		Free Elective	3	6			
	TOTAL	15	30			15	30			

#### TOTAL CREDIT HOURS: 120 US / 240 ECTS

US CR = U.S. Carnegie Credits

ECTS CR = European Credit Transfer Credits

## **Business Administration**

#### **Bachelor of Science (BS)**

#### Introduction

This flexible program is geared to the student who desires conceptual foundation overall in business an administration. Students maioring in **Business** Administration might be preparing for law school, planning to join a family business, or intending to embark on some other specialized route. The program has sufficient flexibility to meet the needs of each of these career orientations.

#### **Program Mission**

The mission of the Business Administration program is to provide students with the skills and knowledge required to understand and analyze current business administration issues and to enable students to pursue successful business and management careers in responsible and sustainable ways.

#### **Program Objectives**

#### Knowledge

The overall objective of this program is acquisition of knowledge of the many functional areas of a business and of the interrelationships among the functional areas within a business. The core knowledge from studying economics, statistics, accounting, etc. will prepare the students for a well-rounded background in business. The courses from the core will provide a solid background in business knowledge.

#### Skills

- **Teamwork. Students** will demonstrate effective interpersonal skills and the ability to work effectively.
- Quantitative Reasoning and Financial Analysis Skills. Students will demonstrate the ability to perform basic financial analysis.
- **Computer Skills.** Students should demonstrate proficiency in the use of general productivity software in business applications with an emphasis on Microsoft Excel.
- **Global Perspectives.** Students will demonstrate an understanding of global dimensions of business including socio-cultural, political-legal, financial, technological, and economic environments.
- Ethical Reasoning. Students will have the skills to make decisions grounded in ethical thinking.

#### Competences

- Collaborate as part of a team to solve problems.
- Be responsible for ethical decision-making in business.
- Guide practices in small to medium-size businesses.

#### **Program Learning Outcomes**

Written Communications: Students shall demonstrate good written communication skills appropriate for engaging with the various stakeholders of a business.

Oral Communications: Students will create and effectively deliver oral presentations that are concise and informative and will conduct research appropriate to the task at hand.

Students will be able to display advanced knowledge of business and management theories and principles for addressing contemporary management issues.

Students will be able to analyze the impact of business and management practices on a country's economic, socio-cultural, and technological environments.

Students will have the ability to collect, develop and evaluate relevant information for purposes of making informed judgments on different business scenarios.

Our students will evaluate ethical dilemmas facing managers of business organizations, and apply ethical considerations when making business decisions.

#### Degree Requirements for Business Administration

The BS in Business Administration degree is a fouryear degree program. In their first and to some extent their second years, students focus on completion of the University's General Education Program (42-43 US/84-86 ECTS credits) with specialized courses in business gradually introduced. Into the third and fourth year students will focus increasingly on Business topics. To earn a Bachelor's degree, students must satisfactorily complete at least 120 US/240 ECTS credits, complete the General Education Program, fulfill all the requirements for the BS in Business Administration degree, and achieve a CGPA of or higher.

The degree is designed to be completed in four years, assuming students make satisfactory progress toward the degree and do not interrupt

their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the program, which are also detailed in the University Catalog. If a degree is not completed within a period of six years, all coursework in the major will be reevaluated for its current relevance.

#### **BUSINESS ADMINISTRATION (BS) DEGREE REQUIREMENTS** Number of Courses US CR ECTS CR I. University General Education Requirements 13 42-43 84-86 For Details, See Section University General Education Requirements **II. Business Core Courses US/ECTS** 14 42 84 ACC 101 Principles of Accounting I 3/6 3/6 ACC 102 Principles of Accounting II ECO 101 Microeconomics 3/6 ECO 103 Macroeconomics 3/6 FIN 201 Introduction to Finance 3/6 FIN 301 Money and Markets 3/6 MAT 201 Business Statistics 3/6 MGT 101 Principles of Management 3/6 MGT 301 Operations Management 3/6 MGT 310 Principles of Marketing 3/6 MGT 340 Management Information Systems 3/6 MGT 350 Consumer Behavior 3/6 MGT 360 Organizational Behavior 3/6 PHI 301 Business Ethics 3/6 III. Business Administration Major Courses 6 **US/ECTS** 18 36 ECO 310 European Economic History 3/6 MGT 320 International Business 3/6 MGT 330 Principles of Sustainability 3/6 MGT 410 Entrepreneurship 3/6 MGT 420 Global Human Resource Management 3/6 MGT 450 Principles of Marketing Research 3/6 **IV. Free Electives** 18 **US/ECTS** 6 36 Free Elective 3/6 **BUSINESS ADMINISTRATION TOTALS** 39 120 240

US CR = U.S. Carnegie Credits

ECTS CR = European Credit Transfer Credits
## SAMPLE FOUR-YEAR SCHEDULE

#### **Bachelor of Science in Business Administration**

	First Year, Semester 1			First Year, Semester 2					
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR		
ENG 101	English Composition I	3	6	ENG 102	English Composition II	3	6		
BIO 101	Unity of Life and Lab	4	8	HIS 101	History of the Mediterranean	3	6		
MAT 101	Introduction to Data Analysis, Probability, and Statistics	3	6	MAT 201	Business Statistics	3	6		
REL 101	Religious Worlds in Comparative Perspective	3	6	MGT 101	Principles of Management	3	6		
	Free Elective	3	6						
	TOTAL	16	32			12	24		

	Second Year, Semester 1		Second Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ACC 101	Principles of Accounting I	3	6	ACC 102	Principles of Accounting II	3	6
CHE 101	Introduction to Chemistry and Lab	4	8	ECO 103	Macroeconomics	3	6
COM 101	Communication in a Multicultural Setting	3	6	PHY 101	Introduction to the Physical Universe and Lab	4	8
ECO 101	Microeconomics	3	6		Free Elective	3	6
	Gen Ed: Arts / Humanities	3	6				
	TOTAL	16	32			13	26

	Third Year, Semester 1				Third Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ACC 201	Free Elective	3	6	FIN 301	Money and Markets	3	6
MGT 301	Operations Management	3	6	MGT 310	Principles of Marketing	3	6
MGT 340	Management Information Systems	3	6	MGT 360	Organizational Behavior	3	6
PSY 101	Introduction to Psychology	3	6	SOC 101	Introduction to Sociology	3	6
	Gen Ed: Arts / Humanities	3	6		Free Elective	3	6
	TOTAL	15	30			15	30

	Fourth Year, Semester 1		Fourth Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
MGT 320	International Business	3	6	ECO 310	European Economic History	3	6
MGT 330	Principles of Sustainability	3	6	MGT 410	Entrepreneurship	3	6
MGT 350	Consumer Behavior	3	6	MGT 420	Global Human Resource Management	3	6
PHI 301	Business Ethics	3	6	MGT 450	Principles of Marketing Research	3	6
	Free Elective	3	6		Free Elective	3	6
	TOTAL	15	30			15	30

#### TOTAL CREDIT HOURS: 120 US / 240 ECTS

US CR = U.S. Carnegie Credits

## **Business and Finance**

#### **Bachelor of Science (BS)**

#### Introduction

The BS in Business and Finance is designed for those students who desire a solid foundation in business with a particular emphasis on finance. The degree is designed for a graduate to be able to be employed in any general area of finance. A graduate will be able to step into a banking institution and be well prepared to handle tasks that would normally require firm training.

#### **Program Mission**

The mission of the Business Administration and Finance program is to provide the graduate with the knowledge, skills, and understanding required to work productively and fruitfully in the financial world. It provides the foundation on which to build a strong career in financial industries and services.

#### **Program Objectives**

The solid foundation in corporate finance, investments, portfolio management, and international finance will give the student a strong content background. In addition, students will develop communication and presentation skills, active listening skills, the ability to do software analysis, as well as development of teamwork skills and a solid ethical foundation.

#### Knowledge

The core knowledge from studying economics, statistics, accounting, etc. will prepare the students for the study of the financial topics of corporate, investments, international, and institutions, as well as the more specialized topic of Islamic finance. The courses from the core will provide a solid background in business knowledge. The finance courses cover core areas of finance theory.

#### Skills

- **Teamwork skills.** Collaborate for effective presentations and analysis in diverse teams, and develop the interpersonal skills and the ability to work effectively with others.
- Quantitative Reasoning and Financial Analysis Skills. Demonstrate the ability to perform basic financial analysis.
- **Research and Computer Skills.** Research complex financial reports and synthesize the results. The use of appropriate software, in particular SAS and

Microsoft Excel, will demonstrate their proficiency in software for business applications for research and reporting of results.

- Global Perspectives.
  - Demonstrate an understanding of global dimensions of business including sociocultural, political-legal, financial, technological and economic environments.
  - 0 Effectively function in the diverse nature of the local and global society and translate that knowledge into improved decision making.
  - 0 Work effectively in diverse teams to reach sound financial decisions

#### **Learning Outcomes**

By the end of this program, students develop the ability to;

Analyse the financial management function in a business organization

Identify and appraise different sources of business finance

Describe the structure of financial systems and explain the role of financial intermediaries

Apply working capital management techniques

Undertake effective investment appraisal

Perform business valuations

#### Degree Requirements for Business and Finance

The BS in Business and Finance degree is a four-year degree program. In their first and to some extent their second year, students focus on completion of the university's General Education Program (42 US / 84 ECTS credits), with specialized courses in general business and finance gradually introduced. Into the third and fourth year students focus increasingly on business and finance topics. To earn a bachelor's degree, students must satisfactorily complete at least 120 US / 240 ECTS credits, complete the General Education Program, fulfill all the requirements for the BS in Business and Finance degree, and achieve a CGPA of 2.00 or higher.

The degree is designed to be completed in four years, assuming students make satisfactory progress toward the degree and do not interrupt their study. Students who withdraw or take a leave of absence from the program must

meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the pro- gram, which are also detailed in the University Catalog. If a degree is not completed within a period of six years all coursework in the major will be re-evaluated for its current relevance.

BUSINESS AND FINANCE (BS) DEGREE REQUIREMENTS										
		Number of Courses	US Credits	ECTS Credits						
. University General Education Requirements		13	42	84						
For Details, See Section University General Education Requirements										
I. Business Core Courses	US/ECTS	11	33	66						
ACC 101 Principles of Accounting I	3/6									
ACC 102 Principles of Accounting II	3/6									
ECO 101 Microeconomics	3/6									
ECO 103 Macroeconomics	3/6									
MAT 201 Business Statistics	3/6									
MGT 101 Principles of Management	3/6									
MGT 301 Operations Management	3/6									
MGT 310 Principles of Marketing	3/6									
MGT 340 Management Information Systems	3/6									
MGT 360 Organizational Behavior	3/6									
PHI 301 Business Ethics	3/6									
I. Business and Finance Major Courses	US/ECTS	9	27	54						
FIN 201 Introduction to Finance	3/6									
FIN 301 Money and Markets	3/6									
FIN 250 Corporate Finance	3/6									
FIN 305 Investments and Portfolio Management	3/6									
FIN 360 International Finance	3/6									
FIN 380 Financial Statement Analysis	3/6									
FIN 410 Markets, Institutions, and Derivatives	3/6									
FIN 430 Finance: Theory and Applications	3/6									
MGT 370 Taxes, Law, and Regulation	3/6									
. Free Electives	US/ECTS	6	18	36						
Free Elective	3/6									
Free Elective	3/6									
Free Elective	3/6									
Free Elective	3/6									
Free Elective	3/6									
Free Elective	3/6									
BUSINESS AND FINANCE TOTALS		39	120	240						

US CR = U.S. Carnegie Credits

## SAMPLE FOUR-YEAR SCHEDULE

#### **Bachelor of Science in Business and Finance**

	First Year, Semester 1		First Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ENG 101	English Composition I	3	6	BIO 101	Unity of Life and Lab	4	8
HIS 101	History of the Mediterranean	3	6	ENG 102	English Composition II	3	6
MAT 101	Introduction to Data Analysis, Probability, and Statistics	3	6	MAT 201	Business Statistics	3	6
MGT 101	Principles of Management	3	6	REL 101	Religious Worlds in Comparative Perspective	3	6
	Free Elective	3	6				
	TOTAL	15	30			13	26

	Second Year, Semester 1		Second Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ACC 101	Principles of Accounting I	3	6	ACC 102	Principles of Accounting II	3	6
COM 101	Communication in a Multicultural Setting	3	6	CHE 101	Introduction to Chemistry and Lab	4	8
ECO 101	Microeconomics	3	6	ECO 103	Macroeconomics	3	6
PHI 101	Introduction to Philosophy	3	6	PSY 101	Introduction to Psychology	3	6
PHY 101	Introduction to the Physical Universe and Lab	4	8		Free Elective	3	6
	TOTAL	16	32			16	32

	Third Year, Semester 1		Third Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
FIN 201	Introduction to Finance	3	6	FIN 250	Corporate Finance	3	6
MGT 360	Organizational Behavior	3	6	FIN 301	Money and Markets	3	6
PHI 102	Applied Ethics	3	6	MGT 340	Management Information Systems	3	6
SOC 101	Introduction to Sociology	3	6	PHI 301	Business Ethics	3	6
	Free Elective	3	6		Free Elective	3	6
	TOTAL	15	30			15	30

	Fourth Year, Semester 1				Fourth Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
FIN 305	Investments and Portfolio Management	3	6	FIN 380	Financial Statement Analysis	3	6
FIN 360	International Finance	3	6	FIN 410	Markets, Institutions, and Derivatives	3	6
MGT 301	Operations Management	3	6	FIN 430	Finance: Theory and Applications	3	6
MGT 370	Taxes, Law, and Regulation	3	6	MGT 310	Principles of Marketing	3	6
	Free Elective	3	6		Free Elective	3	6
	TOTAL	15	30			15	30

#### TOTAL CREDIT HOURS: 120 US / 240 ECTS

US CR = U.S. Carnegie Credits

## **Civil Engineering**

#### **Bachelor of Science (BS)**

#### Introduction

The Bachelor of Science in Civil Engineering provides a fundamental background in all civil engineering subdisciplines: construction, environmental, geotechnical, hydraulics, structures and transportation engineering. Graduates will be prepared to immediately contribute in professional practice in those subfields in entry level engineering positions.

#### **Program Mission**

The mission of the BS in the Civil Engineering program is to prepare graduates for employment as professional engineers in the wide range of fields associated with civil engineering. The knowledge and skills graduates acquire enable them to work in a wide range of related occupations. Civil engineers plan, design, develop and manage projects for the construction or repair of buildings, earth structures, powerhouses, roads, airports, railways, rapid transit facilities, bridges, tunnels, canals, dams, ports and coastal installations and systems related to highway and transportation services, water distribution and sanitation. Civil engineers may also specialize in foundation analysis, building and structural inspection, surveying, geomatics and municipal planning. Civil engineers are employed by engineering consulting companies, in all levels of government, by construction firms and in many other industries, or they may be self-employed.

#### **Program Objectives**

The Civil Engineering Program objectives and indicators are:

Objective 1: Technical Proficiency. Building on fundamental knowledge, graduates will develop technical skills within and across disciplines in civil engineering and/or in closely related fields.

Objective 2: Professional Growth. Graduates will develop and exercise their capabilities for life-long learning as a means to enhance their technical and non-technical skills.

Objective 3: Management Skills. Graduates will develop and refine their knowledge and skills for management, communications, and professional ethics or communications components.

#### **Program Learning Outcomes**

# Communication Skills, the learner will be able to achieve the following:

a) prepare professional proposals and reports

b) competently deliver oral presentations to technical and lay audiences

c) develop and use effective audio/visual aids

d) write effective professional communications such as email and memorandums

e) communicate within the engineering disciplines through plans and drawings

# Learning Skills, the learner will be able to achieve the following:

(a) an ability to apply knowledge of mathematics, science, and engineering

(b) an ability to design and conduct experiments, as well as to analyze and interpret data

(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability

(d) an ability to function on multidisciplinary teams

(e) an ability to identify, formulate, and solve engineering problems

(f) an understanding of professional and ethical responsibility

(g) an ability to communicate effectively

 (h) the broad education necessary to understand the impact of engineering solutions in a global,
 economic, environmental, and societal context

(i) a recognition of the need for, and an ability to engage in life-long learning

(j) a knowledge of contemporary issues

(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

#### **Degree Requirements for Civil Engineering**

The BS in Civil Engineering is a four-year degree program. In their first and to some extent their second year, students focus on completion of the University's General Education Program (43 US / 86 ECTS credits), with specialized courses in Civil Engineering gradually introduced. Into the third and fourth year students focus increasingly on in Civil Engineering topics. To earn a bachelor's degree, students must satisfactorily complete at least 133 US / 266 ECTS credits, fulfill all the requirements for the BS in Civil Engineering degree, and achieve a CGPA of 2.00 or higher. The degree is designed to be completed in four years, assuming students make satisfactory progress toward the degree and do not interrupt their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the program, which are also detailed in the University Catalog. If a degree is not completed within a period of six years all coursework in the major will be re-evaluated for its current relevance.

## CIVIL ENGINEERING (BS) DEGREE REQUIREMENTS

		Number of Courses	US CR	ECTS CR
I. University Ge	eneral Education Requirements	13	43	86
For Detai	ls, See Section University General Education Requirements			
II. Related Requ	irements US/ECTS	8	21	50
ENR 102	Introduction to Engineering Lecture series and 3/6 Engineering Design			
ENR 211	Dynamics 1/2			
ENR 212	Engineering Economics 1/2			
MAT 105	Introduction to MATLAB I 1/2			
MAT 130	Calculus II 4/8			
MAT 220	Multivariable Calculus 4/8			
MAT 250	Differential Equations 3/6			
PHY 240	Introductory Electricity and Magnetism or CHE 1124/8General Chemistry II4/8			
III. Civil Enginee	ring Major Courses US/ECTS	23	70	140
CIE 210	Engineering Graphics 2/4			
CIE 214	Statistics 3/6			
CIE 215	Mechanics of Materials 3/6			
CIE 218	Mechanics of Fluids 4/8			
CIE 251	Elementary Surveying 3/6			
CIE 301	Engineering Communication 3/6			
CIE 303	Numerical Analysis for Civil Engineers 3/6			
CIE 310	Probability and Statistics for Civil Engineering 3/6			
CIE 323	Hydraulic Engineering and Design 4/8			
CIE 333	Elementary Structural Analysis 3/6			
CIE 334	Structural Design in Steel 3/6			
CIE 335	Structural Design in Concrete 3/6			
CIE 343	Soil Mechanics 4/8			
CIE 363	Transportation Engineering and Pavement Design 4/8			
CIE 381	Construction Engineering Management 3/6			
CIE 389	Materials Testing Laboratory 1/2			
CIE 408A	Issues in Civil Engineering Practice 3/6			
CIE 408B	Civil Engineering Senior Capstone Design 3/6			
CIE 427	Computer Applications in Hydraulics 3/6			
CIE 440	Foundation Engineering 3/6			
CIE 442	Ground Improvement 3/6			
CIE 463	Traffic Flow and Capacity Analysis 3/6			
CIE 482	Construction Project Planning, Scheduling and Control 3/6			
	TOTAL	44	134	268

US CR = U.S. Carnegie Credits

## SAMPLE FOUR-YEAR SCHEDULE Bachelor of Science in Civil Engineering

	First Year, Semester 1				First Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ENG 101	English Composition I	3	6	ENG 102	English Composition II	3	6
MAT 120	Calculus I	4	8	SOC 101	Introduction to Sociology	3	6
CHE 111	Introduction to General Chemistry and lab	4	8	PHY 111	Physics with Calculus and lab	4	8
HIS 101	History of the Mediterranean	3	6	BIO 101	Unity of Life and lab	4	8
ENR 102	Intro to Engineering and Eng. Des.	3	6	MAT 130	Calculus	4	8
	TOTAL	17	34			18	36

	Second Year, Semester 1			Second Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR	
ENR 212	Engineering Economics	1	2	MAT 105	Introduction to MATLAB1	1	2	
PHY 240	Intro Electricity and Magnetism (w/lab) or Gen Chem II (w/lab)	4	8	COM 101	Introduction to Multicultural Communication	3	6	
CIE 210	Engineering Graphics	2	4	CIE 215	Mechanics of Materials	3	6	
CIE 214	Statistics	3	6	CIE 310	Prob and Stats for Civil Eng.	3	6	
MAT 220	Multivariable Calculus	4	8	CIE 251	Elementary Surveying and lab	3	6	
REL 101	Religious Worlds in Comparative Perspective	3	6	MAT 250	Differential Equations	3	6	
	TOTAL	17	34			16	32	

	Third Year, Semester 1				Third Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
PHI 101	Introduction to Philosophy, or ATH 101 Arts of the Mediterranean	3	6	CIE 323	Hydraulic Engineering and Design	4	8
CIE 301	Engineering Communications	3	6	CIE 334	Structural Design in Steel	3	6
CIE 303	Numerical Analysis for Civ Engineers	3	6	CIE 335	Structural Design in Concrete	3	6
CIE 218	Mechanics of Fluids and lab	4	8	CIE 343	Soil Mechanics	4	8
CIE 333	Elementary Structural Analysis	3	6	CIE 389	Materials Testing Laboratory	1	2
ENR 211	Dynamics	1	2	PHI 102	Applied Ethics	3	6
	TOTAL	17	34			18	36

	Fourth Year, Semester 1				Fourth Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
CIE 363	Transportation Engineering and Pavement Design	4	8	CIE 408B	Civil engineering Senior Capstone Design	3	6
CIE 381	Construction Engineering Management	3	6	CIE 440	Foundation Engineering	3	6
PSY 101	Introduction to Psychology	3	6	CIE 442	Ground Improvement	3	6
CIE 408A	Issues in Civil Engineering Practice	3	6	CIE 463	Traffic Flow and Capacity Analysis	3	6
CIE 427	Computer Applications in Hydraulics	3	6	CIE 482	Construction Project Planning, Scheduling, and Control	3	6
	TOTAL	16	32			15	30

TOTAL CREDIT HOURS: 134 US / 268 ECTS

## Electronics and Communications Engineering Bachelor of Science (BS)

#### Introduction

The Bachelor of Science in Electronics and Communications Engineering is designed for students interested in a focus on electronics and communications within the broader field of electrical engineering, such as telecommunications engineering, computer science engineering, consumer electronics engineering, electronics circuit design engineering, electronics test and maintenance engineering, or electronics and communications research engineering.

#### **Program Mission**

The mission of the BS in Electronics and Communications Engineering program is to prepare graduates for employment as professional engineers in the field of electronics and communications engineering. The knowledge and skills graduates acquire enable them to work in a wide range of related occupations.

#### **Program Objectives**

To achieve its mission, the program provides students with the following knowledge, skills, and competences:

#### Knowledge

Students who major in Electronics and Communications Engineering will acquire knowledge in the following areas:

- Basic Sciences.
- Mathematics.
- Engineering Areas:
  - 0 Electric circuits and associated labs.
  - 0 Electronics and associated labs.
  - 0 Digital systems, computers and associated labs.
  - 0 Signals, systems, & communications and associated lab.
  - 0 Control systems and integrated systems design.
- Students will demonstrate an understanding of professional and ethical responsibility.

- Students will demonstrate the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- Students will develop a <u>recognition of theneed for</u> life-long learning.
- Students will demonstrate a knowledge of contemporary issues.

#### Skills

- Students will develop analytical and critical thinking skills.
- Students will develop appropriate information technology (IT) skills.
- Students will demonstrate an ability to apply knowledge of mathematics, science, and engineering.
- Students will demonstrate an ability to design and conduct experiments, as well as to analyze and interpret data.
- Students will demonstrate an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Students will demonstrate an ability to function on multidisciplinary teams.
- Students will demonstrate an ability identify, formulate, and solve engineering problems.
- Students will demonstrate an ability to communicate effectively.
- Students will demonstrate an ability to engage in life-long learning.
- Students will demonstrate an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

#### Competences

- 1. Ability to independently analyze, design, and implement electronic systems
- Ability to independently analyze, design, and implement communications systems Ability to collaborate effectively with a team to

design and development a system involving electronics and/or communications components.

- 3. Ability to use computer hardware and software to solve engineering problems.
- 4. Ability to effectively utilize laboratory equipment to analyze electronic systems.
- 5. Ability to apply mathematics to analyze and design engineering systems.

#### **Program Learning Outcomes**

# Communication Skills, the learner will be able to achieve the following:

- 1. Produce effective written lab reports.
- 2. Effectively communicate orally with team members in the capstone design class.
- 3. Produce well-written lab reports and give an effective oral presentation of the capstone design project.

## Learning Skills, the learner will be able to achieve the following:

- 1. Secure employment where electronics and communication engineering skills can be utilized.
- 2. Proceed to graduate work in electronics and communication engineering and related fields.
- 3. Independently study new emerging technologies, using the frameworks and tools acquired in the program.

# Degree Requirements for electronics and communications engineering

The BS in Electronics and Communications Engineering is a four-year degree program. In their first and to some extent their second year, students focus on completion of the University's General Education Program (43 US / 86 ECTS credits), with specialized courses in Electronics and Communications Engineering gradually introduced. Into the third and fourth year students will focus increasingly on in Electronics and Communications Engineering topics. To earn a bachelor's degree, students must satisfactorily complete at least 129 US / 258 ECTS credits, complete the General Education Program, fulfill all the requirements for the BS in Electronics and Communications Engineering degree, and achieve a CGPA of 2.00 or higher.

The degree is designed to be completed in four years, assuming students make satisfactory progress toward the

degree and do not interrupt their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the program, which are also detailed in the University Catalog. If a degree is not completed within a period of six years all coursework in the major will be re-evaluated for its currentrelevance.

		ELECTRONICS & COMMUNICATIONS ENGINEERING (BS) DEGREE REQUIREMENTS								
		Number of Courses	US CR	ECTS						
Iniversity General Education Requirements	US/ECTS	13	43	86						
For Details, See Section University General Education Requirement	nts									
lectronic and Communications Core Courses	US/ECTS	7	25	50						
CHE 112 General Chemistry II and Lab	4/8									
CSC 201 Introduction to C	3/6									
MAT 130 Calculus II	4/8									
MAT 220 Multivariate Calculus	4/8									
MAT 250 Differential Equations	3/6									
MAT 260 Linear Algebra	3/6									
PHY 112 Physics with Calculus II and Lab	4/8									
lectronic and Communications Major Courses	US/ECTS	16	58	11						
ECE 201 Logic and Computing Devices and Lab	3/6									
ECE 202 Electric Circuits I and Lab	4/8									
ECE 262 Electric Circuits II and Lab	4/8									
ECE 272 Computer Organization and Lab	4/8									
ECE 317 Random Signal Analysis	3/6									
ECE 320 Electronics I and Lab	4/8									
ECE 321 Electronics II and Lab	4/8									
ECE 330 Signals, Systems, and Transforms and Lab	4/8									
ECE 371 Microprocessor Interfacing and Lab	4/8									
ECE 382 Electromagnetics	3/6									
ECE 409 Introduction to Linear Control Systems	3/6									
ECE 427 Communications Systems	3/6									
ECE 430 Digital Communications and Lab	4/8									
ECE 467 Introduction to Digital Signal Processing	3/6									
ECE 495 Integrated System Design I	4/8									
ECE 496 Integrated System Design II	4/8									
echnical Electives (select one)	US/ECTS	1	3	6						
ECE 404 Semiconductor Devices	3/6									
ECE 438 Computer Communications	3/6									

US CR = U.S. Carnegie Credits

## SAMPLE FOUR-YEAR SCHEDULE

#### Bachelor of Science in Electronics and Communications Engineering

	First Year, Semester 1				First Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ENG 101	English Composition I	3	6	CHE 112	General Chemistry II with Lab	4	8
CHE 111	Introduction to General Chemistry and Lab	4	8	ENG 102	English Composition II	3	6
MAT 120	Calculus I	4	8	MAT 130	Calculus II	4	8
REL 101	Religious Worlds in Comparative Perspective	3	6	PHY 111	Physics with Calculus I with Lab	4	8
	TOTAL	14	28			15	30

	Second Year, Semester 1				Second Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
CSC 201	Introduction to Programming in C with Lab	3	6	BIO 101	Unity of Life with Lab	4	8
ECE 201	Logic and Computing Devices	3	6	ECE 262	Electric Circuits II with Lab	4	8
ECE 202	Electric Circuits I with Lab	4	8	ECE 272	Computer Organization with Lab	4	8
MAT 220	Multivariate Calculus	4	8	MAT 250	Differential Equations	3	6
PHY 112	Physics with Calculus II	4	8				
	TOTAL	18	36			15	30

	Third Year, Semester 1		Third Year, Semester 2					
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR	
COM 101	Introduction to Multicultural Communication	3	6	ECE 317	Random Signal Analysis	3	6	
ECE 320	Electronics I with Lab	4	8	ECE 321	Electronics II with Lab	4	8	
ECE 330	Signals, Systems, and Transformations with Lab	4	8	ECE 371	Microprocessor Interfacing with Lab	4	8	
MAT 260	Linear Algebra	3	6	ECE 382	Electromagnetics	3	6	
PHI 101	Introduction to Philosophy (or ATH 101)	3	6	PHI 102	Applied Ethics	3	6	
	TOTAL	17	34			17	34	

	Fourth Year, Semester 1				Fourth Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ECE 409	Introduction to Linear Control Systems	3	6	ECE 467	Introduction to Digital Signal Processing	3	6
ECE 427	Communications Systems	3	6	ECE 496	Integrated System Designs II	4	8
ECE 430	Digital Communications	4	8	HIS 101	History of the Mediterranean	3	6
ECE 495	Integrated System Design I	4	8	SOC 101	Introduction to Sociology	3	6
PSY 101	Introduction to Psychology	3	6		Technical Elective	3	6
	TOTAL	17	34			16	32

#### TOTAL CREDIT HOURS: 129 US / 258 ECTS

US CR = U.S. Carnegie Credits

## **Industrial Engineering**

#### **Bachelor of Science (BS)**

#### Introduction

The Bachelor of Science in Industrial Engineering provides a fundamental background in all Industrial engineering subdisciplines. Whether it is manufacturing smart phones or superior automobiles, streamlining an operating room in a hospital, shortening a rollercoaster line at an amusement park, or distributing products worldwide, these challenges share the common goal of saving a company money and increasing efficiency. Industrial engineers take courses in a variety of subjects such as production and process design, production planning, optimization, modeling and simulation, information management, facility layout, job/workplace design, engineering management, material flow, and distribution.

#### **Program Mission**

The mission of the BS in the Industrial Engineering program is to prepare graduates for employment as professional engineers in the wide range of fields associated with Industrial engineering. Our students combine technical knowledge and skills from engineering, business, and social sciences to design, evaluate, monitor and improve system performance. Industrial engineering graduates go on to a wide variety of careers related to manufacturing, entertainment, shipping and logistics, healthcare, project management, transportation, systems modeling, telecommunications, customer service, and government. Many of our industrial engineers use the foundations we provide to pursue management positions in high tech industries.

#### **Program Objectives**

The Industrial Engineering Program objectives and indicators are:

**Objective 1: Technical Proficiency**. Graduates integrate mathematics, physics, engineering science, operations research, applied probability and statistics, manufacturing technology, production planning, and computer simulation to model and analyze entire systems that are composed of their individual components, subsystems, and processes.

**Objective 2: Professional Growth**. Graduates develop and exercise their capabilities for life-long learning as a means to enhance their technical and social skills.

**Objective 3: Management Skills**. Graduates develop and refine their management, communications, and professional

skills to increase their effectiveness as team members and team leaders.

#### **Program Learning Outcomes**

#### Knowledge Skills: The learner will be able to

(a) ability to apply knowledge of mathematics, science, and engineering

(b) ability to design and conduct experiments, as well as to analyze and interpret data

(c) ability to design system, component, or process to meet needs within realistic constraints

(d) ability to function on multidisciplinary teams

(e) ability to identify, formulate, and solve engineering problems

(f) understanding of professional and ethical responsibility

(g) ability to communicate effectively

(h) broad education necessary to understand the impact of engineering solutions

(i) recognition of the need for, and an ability to engage in lifelong learning

(j) knowledge of contemporary issues

(k) ability to use techniques, skills, and modern engineering tools necessary for engineering practice

# Communication Skills: The learner will be able to achieve the following:

(a) prepare professional proposals and reports

(b) competently deliver oral presentations to technical and lay audiences

(c) develop and use effective audio/visual aids

(d) write effective professional communications such as email and memorandums

(e) communicate within the engineering disciplines through plans and drawings

# Learning Skills: The learner will be able to achieve the following:

(a) understand the impact of engineering solutions in a global, economic, environmental, and societal context

(b) recognize the need to engage life-long learning

(c) be capable of developing a career plan including options for advanced education or specialized training to enhance career

(d) have the ability to autonomously initiate and engage in lifelong learning

### Degree Requirements for Industrial Engineering

The BS in Industrial Engineering is a four-year degree program. In their first and to some extent their second year, students focus on completion of the University's General Education Program (43 US / 86 ECTS credits), with specialized courses in Industrial Engineering gradually introduced. Into the third and fourth year students focus increasingly on in Industrial Engineering topics. To earn a bachelor's degree, students must satisfactorily complete at least 133 US / 266 ECTS credits, fulfill all the requirements for the BS in Industrial Engineering degree, and achieve a CGPA of 2.00 or higher. The degree is designed to be completed in four years, assuming students make satisfactory progress toward the degree and do not interrupt their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the program, which are also detailed in the University Catalog. If a degree is not completed within a period of six years all coursework in the major will be re-evaluated for its current relevance.

## INDUSTRIAL ENGINEERING (BS) DEGREE REQUIREMENTS

			Number of Courses	US CR	ECTS CR
I. University Ger	neral Education Requirements		13	43	86
For Details	s, See Section University General Education Requirements				
II. Related Requi	rements	US/ECTS	7	25	50
CIE 214	Statics	3/6			
CIE 301	Engineering Communications	3/6			
CHE 112	General Chemistry II	4/8			
ENR 102A and B	Introduction to Engineering Lecture and Design	3/6			
MAT 130	Calculus II	4/8			
MAT 220	Multivariable Calculus	4/8			
PHY 240	Introductory Electricity and Magnetism	4/8			
III. Industrial Engi	neering Major Courses	US/ECTS	22	65	130
IEE 175	Computer Programming for Engineering Applications	3/6			
IEE 250	Introduction to Systems and Industrial Engineering	3/6			
IEE 265	Engineering Management I	3/6			
IEE 277	Object-Oriented Modeling and Design	3/6			
IEE 270	Mathematical Foundations of Systems and Ind. Eng.	3/6			
IEE 295S	Systems and Industrial Engineering Soph. Colloquium	1/2			
IEE 305	Introduction to Engineering Probability and Statistics	3/6			
IEE 321	Probabilistic Models in Operations Research	3/6			
IEE 330R	Engineering Experimental Design	3/6			
IEE 340	Deterministic Operations Research	3/6			
IEE 367	Engineering Management II	3/6			
IEE 370	Embedded Computer Systems	4/8			
IEE 377	Software for Engineers	3/6			
IEE 383	Integrated Manufacturing Systems	3/6			
IEE 406	Quality Engineering	3/6			
IEE 410A	Human Factors and Ergonomics in Design	3/6			
IEE 431	Simulation Modeling and Analysis	3/6			
IEE 457	Project Management	3/6			
IEE 462	Production Systems Analysis	3/6			
IEE 464	Cost Estimation	3/6			
IEE 498A	Cross-disciplinary Design	3/6			
IEE 498B	Cross-Disciplinary Design	3/6			
	TOTAL		42	133	266

US CR = U.S. Carnegie Credits

## SAMPLE FOUR-YEAR SCHEDULE

## **Bachelor of Science in Industrial Engineering**

	First Year, Semester 1				First Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ENG 101	English Composition I	3	6	ENG 102	English Composition II	3	6
MAT 120	Calculus I	4	8	SOC 101	Introduction to Sociology	3	6
CHE 111	Introduction to Gen. Chem. and lab	4	8	BIO 102	Unity of Life and lab	4	8
HIS 101	History of the Mediterranean	3	6	MAT 130	Calculus II	4	8
ENR 102	Introduction to Engineering and Eng. Design	3	6	PHY 111	Physics with calculus I and lab	4	8
	TOTAL	17	34			18	36

	Second Year, Semester 1				Second Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
IEE 175	Computer Programming for Engineering Applications	3	6	IEE 250	Introduction to Systems and Industrial Engineering	3	6
CIE 214	Statics	3	6	CHE 112	General Chemistry II and lab	4	8
MAT 220	Calculus III	4	8	IEE 277	Object-Oriented Modeling and Design	3	6
PHY 240	Introductory Electricity and Magnetism and lab	4	8	COM 101	Introduction to Multicultural Communications	3	6
REL 101	Religious Worlds in Comparative Perspective	3	6	IEE 265	Engineering Management I	3	6
	TOTAL	17	34			16	32

	Third Year, Semester 1		Third Year, Semester 2					
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR	
ATH 101	Arts of the Mediterranean	3	6	IEE 340	Deterministic Operations Res.	3	6	
IEE 270	Mathematical Found of Systems	3	6	IEE 410A	Human Factors and Ergon in Des.	3	6	
IEE 295S	Systems and Industrial Engineering	1	2	IEE 321	Probabilistic Models in Oper. Res.	3	6	
IEE 305	Introduction to Engineering Probability and Statistics	3	6	IEE 383	Integrated Manufacturing Systems	3	6	
IEE 377	Software for Engineers	3	6	IEE 370	Embedded Computer Systems	4	8	
IEE 367	Engineering Management II	3	6					
	TOTAL	16	32			16	32	

	Fourth Year, Semester 1				Fourth Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
PHI 102	Applied Ethics	3	6	CIE 301	Engineering Communications	3	6
IEE 431	Simulation Modeling and Analysis	3	6	IEE 462	Production Systems Analysis	3	6
IEE 498A	Cross-Disciplinary Design	3	6	IEE 498B	Cross-Disciplinary Design	3	6
IEE 330R	Engineering to Psychology	3	6	IEE 406	Quality Engineering	3	6
PSY 101	Introduction to Psychology	3	6	IEE 464	Cost Estimation	3	6
				IEE 457	Project Management	3	6
	TOTAL	15	30			18	36

#### TOTAL CREDIT HOURS: 133 US / 266 ECTS

US CR = U.S. Carnegie Credits

## Mechanical Engineering Bachelor of Science (BS)

#### Introduction

The Bachelor of Science in Mechanical Engineering provides a fundamental background in all Mechanical Engineering subdisciplines. Mechanical engineers design and manufacture everything from small individual parts and devices to large systems such as automobiles and spacecraft. To accomplish this, a broad range of skills are needed including the ability to analyze and model the mechanics of solids, fluids and the flow of heat and energy. Since these skills are required for virtually everything that is made, mechanical engineering is perhaps the broadest and most diverse of engineering disciplines. Mechanical engineers play a central role in such industries as aerospace, automotive, biomedical and manufacturing. Therefore, a degree in mechanical represents an entry point into today's modern high-tech workforce. This course fulfils that training requirement.

#### **Program Mission**

Mechanical engineering applies mathematics, physics and material science principles to analyze, design, manufacture and maintain mechanical systems. Core topics taught in the curriculum include solid and fluid mechanics, thermal sciences, dynamics and controls, and mechanical design. Students also learn machine dynamics, energy and power systems, mechanical properties of engineering and biomaterials, computational methods, HVAC systems, and instrumentation. Graduates of the Mechanical Engineering program go on to careers in a wide range of engineering sectors, including the defense, biomedical, manufacturing, mining, and automotive industries.

#### **Program Objectives**

The Mechanical Engineering Program objectives and indicators are:

**Objective 1**: Graduates become practicing engineers who contribute to, and succeed and advance within their companies, institutes or agencies.

**Objective 2**: Graduates succeed in graduate school in mechanical engineering or other fields that benefit from the skills and knowledge gained through their undergraduate education.

**Objective 3**: Graduates engage in life-long learning and acquire new knowledge and skills through practice and

advanced education to adapt to the changing demands of the work environment throughout their careers.

#### **Program Learning Outcomes**

Communication Skills: The learner will be able to achieve the following:

a) Prepare professional proposals and reports

b) Competently deliver oral presentations to technical and lay audiences

c) Develop and use effective audio/visual aids

d) Write effective professional communications such as email and memorandums

e) Communicate within the engineering disciplines through plans and drawings

Learning Skills: The learner will be able to achieve the following:

a) An ability to apply knowledge of mathematics, science and engineering.

b) An ability to design and conduct experiments, as well as to analyze and interpret data.

c) An ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
d) An ability to function on multidisciplinary teams.

e) An ability to identify, formulate, and solve engineering problems.

(f) An understanding of professional and ethical responsibility.

g) An ability to communicate effectively.

h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.

i) A recognition of the need for, and an ability to, engage in life-long learning.

j) A knowledge of contemporary issues.

k) An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

## Degree Requirements for Mechanical Engineering

The BS in Mechanical Engineering is a four-year degree program. In their first and to some extent their second year, students focus on completion of the University's General Education Program (43 US / 86 ECTS credits), with specialized courses in Mechanical Engineering gradually introduced. Into the third and fourth year students focus increasingly on in Mechanical Engineering topics. To earn a bachelor's degree, students must satisfactorily complete at least 136 US /

272 ECTS credits, fulfill all the requirements for the BS in Mechanical Engineering degree, and achieve a CGPA of 2.00 or higher.

The degree is designed to be completed in four years, assuming students make satisfactory progress toward the degree and do not interrupt their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the program, which are also detailed in the University Catalog. If a degree is not completed within a period of six years, all coursework in the major will be re-evaluated for its current relevance.

## **MECHANICAL ENGINEERING (BS) DEGREE REQUIREMENTS**

		Number of Courses	US CR	ECTS CR
I. University General Education Requirements		13	43	86
For Details, See Section University General Education Requirements				
II Related Requirements Courses	US/ECTS	10	28	56
CIE 210 Engineering Graphics	2/4			
CIE 214 Statics	3/6			
ENR 102 Introduction to Engineering Lecture Series and Design	3/6			
IEE 175 Computer Programming for Engineering Applications	3/6			
MAT 105 Introduction to MATLAB I	1/2			
MAT 130 Calculus II	4/8			
MAT 205 Introduction to MATLAB II	1/2			
MAT 220 Multivariable Calculus	4/8			
MAT 250 Differential Equations	3/6			
II Mechanical Engineering Major Courses I.	US/ECTS	24	65	130
MEE 207 Elements of Electrical Engineering	3/6			
MEE 230 Introduction to Thermodynamics	3/6			
MEE 250 Dynamics	3/6			
MEE 300 Instrumentation Laboratory	3/6			
MEE 301 Engineering Analysis	3/6			
MEE 302 Numerical Methods	3/6			
MEE 313 Mechanical Engineering Design Laboratory	1/2			
MEE 324 A Mechanical Behavior of Engineering Materials	3/6			
MEE 324 B Engineer Component Design	3/6			
MEE 324 L Mechanics of Materials Laboratory	1/2			
MEE 331 Introduction to Fluid Mechanics	3/6			
MEE 331 R Fundamentals of Materials for Engineers	3/6			
MEE 352 Dynamics of Machines	3/6			
MEE 400 Senior Mechanical Engineering Laboratory	2/4			
MEE 432 Heat Transfer	, 3/6			
MEE 442 HVAC System Design	3/6			
MEE 445 Renewable Energy Systems and Analysis	3/6			
MEE 452 Planar Multibody Dynamics with Applications	3/6			
MEE 455 Control System Design	3/6			
MEE 460 Mechanical Vibrations	3/6			
MEE 462 Composite Materials	3/6			
MEE 495.5 Mechanical Engineering Senior Colloquium	1/2			
MFE 489 A Cross-Disciplinary Design	3/6			
MEE 498.B. Cross-Disciplinary Design	3/6			
	5/0			
TOTAL		47	136	272

## SAMPLE FOUR-YEAR SCHEDULE

## **Bachelor of Science in Mechanical Engineering**

	First Year, Semester 1				First Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ENG 101	English Composition I	3	6	BIO 102	Unity of Life and Lab	4	8
MAT 120	Calculus I	4	8	ENG 102	English Composition II	3	6
CHE 111	Introduction to General Chemistry and lab	4	8	PHY 111	Physics with Calculus I and lab	4	8
HIS 101	History of the Mediterranean	3	6	MAT 130	Calculus II	4	8
ENR 102	Introduction to Engineering and Eng. Design	3	6	SOC 101	Introduction to Sociology	3	6
	TOTAL	17	34			18	36

	Second Year, Semester 1				Second Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
MAT 105	Introduction to MATLAB I	1	2	MAT 205	Introduction to MATLAB II	1	2
IEE 175	Computer Programming for Engineering Applications	3	6	COM 101	Introduction to Multicultural Communications	3	6
CIE 214	Statics	3	6	MEE 250	Dynamics	3	6
PHY 240	Introductory Electricity and Magnetism and lab	4	8	MEE 207	Elements of Electrical Engineering	3	6
MAT 220	Calculus III	4	8	MEE 230	Introduction to Thermodynamics	3	6
REL 101	Religious Worlds in Comparative Perspective	3	6	CIE 210	Engineering Graphics	2	4
				MAT 250	Differential Equations	3	6
	TOTAL	18	36			18	36

	Third Year, Semester 1				Third Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR		
ATH 101	Arts of the Mediterranean	3	6	MEE 300	Instrumentation Laboratory	3	6		
MEE 301	Engineering Analysis	3	6	MEE 302	Numerical Methods	3	6		
MEE 324A	Mechanical Behavior of Engineering Materials and lab	4	8	MEE 324B	Engineering Component Design	3	6		
MEE 331	Introduction to Fluid Mechanics	3	6	MEE 331R	Fundamental of Materials for Engineers	3	6		
MEE 352	Dynamics of Machines	3	6	PHI 102	Applied Ethics	3	6		
MEE 313	Mechanical Engineering Design Lab	1	2						
	TOTAL	17	34		TOTAL	15	30		

	Fourth Year, Semester 1			Fourth Year, Semester 2					
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR		
MEE 400	Senior Mechanical Engineering Lab	2	4	MEE 455	Control System Design	3	6		
MEE 432	Heat Transfer	3	6	MEE 445	Renewable Energy Systems and Analysis	3	6		
PSY 101	Introduction to Psychology	3	6	MEE 452	Planar Multibody Dynamics with Applications	3	6		
MEE 460	Mechanical Vibrations	3	6	MEE 462C	Composite Materials	3	6		
MEE 442	HVAC System Design	3	6	MEE 495S	Mechanical Engineering Senior Colloquium	1	2		
MEE 498A	Cross-Disciplinary Design I	3	6	MEE 498B	Cross-Disciplinary Design II	3	6		
	TOTAL	17	34			16	32		

## TOTAL CREDIT HOURS: 136 US / 272 ECTS

US CR = U.S. Carnegie Credits

## **Game Development**

#### **Bachelor of Science (BS)**

#### Introduction

Game development is an ever-evolving multidisciplinary field, focusing on creating interactive tools that can be a stand-alone play, or employed even in real world experiences such as education or business. The Bachelor of Science in Game Development is designed for students interested in game development programming at the highest level, including computer science and computer graphic professionals retooling for the game industry. The program follows an approach that provides students with the knowledge to use and combine powerful multimedia platforms, computer programming environments, and animation techniques, and to apply their vision to complex virtual realities.

With the Game Development degree students gain excel-lent coding skills. The degree will give students the best knowledge and opportunities to enlighten their career path, whether aiming to create plays for commercial purposes, for use in education, or for something else. Game developers implement code for games based on web, console, PC, or mobile platforms. Students may develop careers by using their abilities in the area of entertainment, business, training, or other applicable area.

#### **Program Mission**

The Game Development program strives to provide students with the highest possible quality education in the area of game development in terms of both theoretical and applied foundations and train the students to apply their knowledge to solve real world problems in education, business, etc. and to serve to professional societies and increase their lifelong potential for high quality careers in

the challenging job market.

#### Program Objectives

#### Knowledge

Game development is not a stand-alone program; rather, it is made up of intersecting, complementary disciplines. Stu- dents will be exposed to

- software engineering,
- computer graphics,
- artificial intelligence,
- animation,
- software architecture, and

networking.

Covering both emerging trends and proven knowledge, the program's content is always relevant and current. This "best of both worlds" combination allows students to understand the connection between realized applied systems and issues they will likely face professionally in years to come.

#### Skills

- Students will become proficient with realtime C++ Programming Language.
  - 0 Students will demonstrate programming language C++ concepts: class invocation, over-loaded operators, STL containers, pointers and templates.
  - O Students will demonstrate understanding of optimized C++ programming techniques such as data caching, SIMD instructions, return value optimization, proxy objects and implicit conversions.
- Students will be able to design and implement real-time networking for Games.
  - O Students will demonstrate serialization of game data transmission by TCP/UDP socket programming.
  - O Students will demonstrate bandwidth compensation techniques for slow and intermit- tent network connection using dead-reckoning estimation technique.
  - 0 Students will create deterministic data driven flow in game applications.
- Students will be able to create and design soft- ware architecture systems using Design Patterns technique.
  - O Students will demonstrate the ability to identity design patterns used in a program and be able to select an appropriate design pattern to apply to a given problem.
  - Students will demonstrate the ability to design/implement a system using one or more design patterns, such as Factory, Single- ton, Observer, Flyweight, Null Object, State, Commander, Composite, Iterator, Object Pool, Visitor, and Strategy Patterns.
  - Students will demonstrate the ability to communicate software designs using UML diagrams.
- Students will understand real-time polygonal video Graphics.

- O Students will demonstrate a thorough under- stand of real-time polygonal graphics covering back-face culling, camera, texturing, lighting, and transformations.
- O Students will be able to use 3D Math (Matrix and Vector) and collision primitives to solve Graphics and simulations problems.
- O Students will be able to implement an efficient graphics rendering system using data friendly buffers, such as Vertex Buffer Objects.
- Students will be able to design and implement a real-time Game Engine.
  - O Students will demonstrate the ability to design/implement an end-to-end game engine, include game system libraries and full graphics pipeline.
  - Students will demonstrate the ability to design/implement real-time game system components such as Memory, File, Object, Graphics, and Math.
  - Students will demonstrate the ability to create asset conversion tools for 3D models and animations.
  - 0 Students will demonstrate the ability to design/implement a 3D keyframe animation system.
- Students will be able to develop software projects in a local and global environment.
  - O Students will demonstrate understanding issues relating to geographic, time related, cultural, economic, and management issues of global software development.
  - O Students should understand Global software project management, including scheduling, estimating, coordinating, and monitoring of global base projects.
  - 0 Students will understand culturally based leadership and conflict resolutions with direct and indirect reporting.
  - 0 Students will be able to coordinate and communicate with distributed developers through asynchronous communication.
  - O Students will be able to evaluate and implement different software project management models, such as Agile, SCRUM, Test-Driven development and

Waterfall.

- O Students should able to use Software configuration management (SCM), including version control usage in a large-scale project, including merging, branching, release, and bug tracking.
- Students will be able understand fundamentals of computer science.
  - Interpret the informal description of an algorithm and translate the description to a pro- gram and write tests to determine whether a program solves the intended problem.
  - O Analytically determine the running time of a program and validate the analysis experimentally; select an appropriate combinatoric or statistical technique to solve an analytic problem; analyze and select an algorithm based on systems effects.
  - O Solve a specific problem by using proper object-oriented techniques and selecting appropriate data structures and algorithms and customize them to the problem.
  - 0 Correlate the input of a compiler and its assembly language output.
  - O Criticize a program on the basis of its maintainability and suggest improvements; interpret new APIs and use them in developing computer applications.
- Students will be able to participate in the game development process from initial concept to finished product.
  - 0 Understand game mechanics: Determining how specific play mechanics will be perceived by the player.
  - 0 Understanding of the Game Narrative design: Creating the individual narrative experience.
  - 0 Design and constructing 3D levels in a Game Engine.
  - 0 Script and program behavior of interactive objects and characters in a level.
  - 0 Combining the editor and programmatic controls (scripting, software) to control behavior.

- 0 Work in a collaborative team environment: Design, prototyping, recursive development.
- 0 Modify or extend an existing 3D game level for effect.

#### Competences

• Collaborate with a team to develop a

#### **Program Learning Outcomes**

Communication Skills. The learner will be able to

- Discuss game development issues within a structured team.
- Effectively communicate project needs within multicultural and diverse development teams.
- Effectively document in writing one's own coding.
- Effectively communicate with team members utilizing asynchronous tools.
- Articulate orally and in writing the main issues involved in global software development.

#### Learning Skills. The learner will be able to

• Proceed to graduate work in game

The degree is designed to be completed in four years, assuming students make satisfactory progress toward the degree and do not interrupt their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, and the maximum time allowed to complete the program, which are also detailed in the University Catalog. If a degree is not completed within a period of six years all coursework in the major will be re-evaluated for its current relevance. medium size computer game from ideation to implementation.

- Be responsible for planning and implementing a medium size computer game.
- Create all necessary components of a medium size computer game.

development.

 Study independently new emerging game related technologies, using the frameworks and tools acquired in the program.

#### Degree Requirements for Game Development

The BS in Game Development is a four-year degree pro- gram. In their first and to some extent their second years, students focus on completion of the university's General Education Program (42-43 US/84-86 ECTS credits), with specialized courses in computer science and game development gradually introduced. Into the third and fourth year students focus increasingly on technical topics that develop the student's understanding and skills related to game development. To earn a bachelor's degree, students must satisfactorily complete at least 122 US/244 ECTS credits, complete the General Education Program, fulfill all the requirements for the BS in Game Development, and achieve a CGPA of 2.00 or higher.

GAME DEVELOPMENT (BS) DEGREE REQUIREMENTS										
		Number of Courses	US CR	ECTS CR						
I. University General Education Requirements	US/ECTS	13	42	84						
For Details, See Section University General Education Requirements										
II. Game Development Major Courses	US/ECTS	20	71	142						
Computer Science Foundation		5	16	32						
CSC 210 Introduction to C++	3/6	_	-	-						
CSC 220 Data Structures	3/6									
CSC 240 Computer Systems	4/8									
CSC 250 Computer Science Theory	3/6									
MAT 230 Discrete Mathematics	3/6									
Game Systems Foundation		5	19	38						
CSC 320 Applied 3D Geometry	3/6									
CSC 330 Optimized C++	4/8									
CSC 350 Computer Graphics	4/8									
CSC 360 Game Design Patterns	4/8									
CSC 370 Game Networking	4/8									
Game Design		4	14	28						
CSC 340 Introduction to Game Design	3/6									
CSC 380 Level Design	3/6									
CSC 410 Game Modification	4/8									
CSC 420 3D Design and Modeling	4/8									
Advanced Game Systems		5	18	36						
CSC 430 Game Engine I Development	4/8									
CSC 440 Game Artificial Intelligence	3/6									
CSC 450 Game Engine II Development	4/8									
CSC 460 Game Physics	4/8									
CSC 470 Global Software Development	3/6									
Capstone		1	4	8						
CSC 480 Game Development Project	4/8									
III. Free Electives	US/ECTS	3	9	18						
Free Elective	3/6									
Free Elective	3/6									
Free Elective	3/6									
GAME DEVELOPMENT TOTALS	· / -	36	122	244						

US CR = U.S. Carnegie Credits

## SAMPLE FOUR-YEAR SCHEDULE

## **Bachelor of Science in Game Development**

	First Year, Semester 1				First Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR		
BIO 101	Unity of Life and Lab	4	8	CSC 210	Introduction to C++	3	6		
ENG 101	English Composition I	3	6	ENG 102	English Composition II	3	6		
HIS 101	History of the Mediterranean	3	6	MAT 230	Discrete Mathematics	3	6		
MAT 101	Introduction to Data Analysis, Probability, and Statistics	3	6	PHY 101	Introduction to the Physical Universe	4	8		
	Free Elective	3	6	REL 101	Religious Worlds in Comparative Perspective	3	6		
	TOTAL	16	32			16	32		

	Second Year, Semester 1				Second Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR		
CSC 220	Data Structures	3	6	CHE 101	Introduction to General Chemistry and Lab	4	8		
COM 101	Communication in a Multicultural Setting	3	6	CSC 240	Computer Systems	4	8		
PSY 101	Introduction to Psychology	3	6	CSC 250	Computer Science Theory	3	6		
	General Education: Arts / Humanities	3	6		Free Elective	3	6		
	Free Elective	3	6						
	TOTAL	15	30			14	28		

	Third Year, Semester 1				Third Year, Semester 2	2	
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
SOC 101	Introduction to Sociology	3	6	CSC 350	Computer Graphics	4	8
CSC 320	Applied 3D Geometry	3	6	CSC 360	Game Design Patterns	4	8
CSC 330	Optimizing C++	4	8	CSC 380	Level Design	3	6
CSC 340	Introduction to Game Design	3	6	CSC 410	Game Modification	4	8
	General Education: Arts / Humanities	3	6				
	TOTAL	16	32			15	30

	Fourth Year, Semester 1	Fourth Year, Semester 2					
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
CSC 370	Game Networking	4	8	CSC 450	Game Engine II Development	4	8
CSC 420	3D Design and Modeling	4	8	CSC 460	Game Physics	4	8
CSC 430	Game Engine I Development	4	8	CSC 470	Global Software Development	3	6
CSC 440	Game Artificial Language	3	6	CSC 480	Game Development Project	4	8
	TOTAL	15	30			15	30

#### TOTAL CREDIT HOURS: 122 US / 244 ECTS

US CR = U.S. Carnegie Credits

## **Chinese Language and Culture**

#### **Bachelor of Arts (BA)**

#### Introduction

The Bachelor of Arts in Chinese Language and Culture is designed for students interested in the various aspects of Chinese culture. This program offers an academic standard-based education in Chinese language and culture. The standards refer to three aspects of learning and teaching: content, performance and proficiency. Their application is across the entire curriculums, including each language and culture course.

#### **Program Mission**

The course prepares students for a wide range of careers in the international arena, especially in the China and East Asia-related areas, as well as for the graduate programs that concentrate on special fields in Chinese culture.

#### Program Objectives

#### Knowledge

The course provides students with comprehensive knowledge about Chinese language and culture, including Chinese linguistics, literature, history, philosophy, religion, politics, cinema, business and health.

#### Skills

The students acquire all the four skills of Chinese language: listening, speaking, reading and writing, and advanced capability of analyzing properly the issues pertaining to various aspects of Chinese culture.

#### Competences

The course prepares students for a wide range of careers in the international arena, especially in the China and East Asia-related areas, as well as for the graduate programs that concentrate on special fields in Chinese culture.

#### **Program Learning Outcomes**

Engage in conversation on various topics in Chinese

Communicate effectively in various Chinese social and cultural contexts

Analyze various aspects of the Chinese culture, history, literature, philosophy and politics

Interpret and contextualize various aspects of Chinese literature and culture

Apply acquired linguistic and cultural knowledge in decision-making and problem-solving in real life China-related contexts

#### Degree Requirements for Chinese Language and Culture

The BA in Chinese Language and Culture degree is a fouryear degree program. In their first and to some extent their second year, students focus on completion of the University's General Education Program (42 US / 84 ECTS credits), with specialized courses in Chinese gradually introduced. Into the third and fourth year students focus increasingly on Chinese topics. To earn a bachelor's degree, students must satisfactorily complete at least 120 US / 240 ECTS credits, complete the General Education Program, fulfill all the requirements for the Bain Chinese Language and Culture degree, and achieve a CGPA of 2.00 or higher.

The degree is designed to be completed in four years, assuming students make satisfactory progress toward the degree and do not interrupt their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the pro- gram, which are also detailed in the University Catalog. If a degree is not completed within a period of six years all coursework in the major will be reevaluated for its cur- rent relevance.

CHINESE LANGUAGE AND CULTURE (BA) DEGREE REQUIREMENTS										
			Number of Courses	US CR	ECTS CR					
I. University G	eneral Education Requirements	US/ECTS	13	41-42	82-84					
For Deta	ils, See Section University General Education Requirements									
II. Chinese Lan	guage Courses	US/ECTS	8	34	68					
CHI 101	Beginning Chinese I	5/10								
CHI 102	Beginning Chinese II	5/10								
CHI 201	Intermediate Chinese I	5/10								
CHI 202	Intermediate Chinese II	5/10								
CHI 301	Advanced Chinese I	4/8								
CHI 302	Advanced Chinese II	4/8								
CHI 410	Study in Chinese Language I: Literature	3/6								
CHI 420	Study in Chinese Language II: Social Science	3/6								
III. Chinese Lan	zuage and Culture Major Courses		q	27	54					
				27	34					
СПІ 305	United Englistics	3/6								
CHI 310	History of Ancient China	3/6								
CHI 320	History of Modern China	3/6								
CHI 350		3/6								
CHI 360	Buddhism in China	3/6								
CHI 450	Contemporary Chinese Literature	3/6								
CHI 460	Philosophy of Ancient China	3/6								
CHI 470	Culture, Society, and Politics in China	3/6								
0111 070	Select One (1) from the following Language Courses:	216								
CHI 370	Chinese for Professionals I: Business	3/6								
CHI 380	Chinese for Professionals II: Health and Medicine	3/6								
IV. Chinese Elec	tives (Choose two from the following)	US/ECTS	2	6	12					
CHI 330	Chinese Popular Culture	3/6								
CHI 340	Chinese Culture through Film	3/6								
CHI 461	Philosophy in Medieval China	3/6								
CHI 462	Modern Chinese Intellectual History	3/6								
CHI 463	The View of History in Ancient World	3/6								
V. Fre <u>e Elective</u>	es (or 1-3 CHI Electives above)	US/ECTS	4	12	24					
	Free Elective	3/6								
	Free Elective or CHI Elective	2/0								
		3/0								
		3/0								
			-20	120	240					
	CHINESE LANGUAGE AND CULTURE TOTALS		36	120	240					

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US CR = U.S. Carnegie Credits
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## SAMPLE FOUR-YEAR SCHEDULE

## Bachelor of Arts in Chinese Language and Culture

	First Year, Semester 1		First Year, Semester 2				
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
CHI 101	Beginning Chinese I	5	10	CHI 102	Beginning Chinese II	5	10
ENG 101	English Composition I	3	6	BIO 101	Unity of Life and Lab	4	8
HIS 101	History of the Mediterranean	3	6	ENG 102	English Composition II	3	6
MAT 101	Introduction to Data Analysis, Probability, and Statistics	3	6	REL 101	Religious Worlds in Comparative Perspective	3	6
	TOTAL	14	28			15	30

	Second Year, Semester 1				Second Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
CHI 201	Intermediate Chinese I	5	10	CHI 202	Intermediate Chinese II	5	10
CHI 310	History of Ancient China	3	6	COM 101	Introduction to Multicultural Communication	3	6
PHI 101	Introduction to Philosophy	3	6	PHI 102	Applied Ethics	3	6
PHY 101	Introduction to the Physical Universe and Lab	4	8	PSY 101	Introduction to Psychology	3	6
	TOTAL	15	30			14	28

	Third Year, Semester 1				Third Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
CHI 301	Advanced Chinese I	4	8	CHI 302	Advanced Chinese II	4	8
CHI 320	History of Modern China	3	6	CHI 350	Pre-Modern Chinese Literature	3	6
CHI 360	Buddhism in China	3	6	CHI 450	Contemporary Chinese Literature	3	6
SOC 101	Introduction to Sociology	3	6	CHI 460	Philosophy in Ancient China	3	6
	Free Elective	3	6		Free Elective	3	6
	TOTAL	16	32			16	32

Fourth Year, Semester 1					Fourth Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ATH 101	Arts of the Mediterranean	3	6	СНІ	Chinese for Professionals I: CHI 370 or CHI 380	3	6
CHI 305	Chinese Linguistics	3	6	CHI 420	Study in Chinese Language II: Social Science	3	6
CHI 410	Study in Chinese Language I: Literature	3	6		Chinese Elective or Free Elective	3	6
CHI 470	Culture, Society and Politics in China	3	6		Chinese Elective or Free Elective	3	6
	Chinese Elective or Free Elective	3	6		Free Elective	3	6
	TOTAL	15	30			15	30

TOTAL CREDIT HOURS: 120 US / 240 ECTS

US CR = U.S. Carnegie Credits

## **Graphic Design and Animation**

#### Bachelor of Arts (BA)

#### Introduction

The Graphic Design and Animation BA program is intended for students who have an interest in practical applications of the visual arts. The graphic design and animation fields provide an opportunity for them to express their creativity and originality through solving visual problems. Students with strong skills and interests in visual design, drawing, painting, the use of color, technical skills, and creative concepts are excellent candidates for this course.

#### **Program Mission**

The mission of the BA in Graphic Design and Animation is to prepare students for careers in advertising, animation, game art, book design, web design, information design, motion graphics, poster design, typography, multimedia, print, visual design, and interactive media. Graduates of the program will have the knowledge and skills required to succeed in any area of graphic design and animation.

#### **Program Objectives**

The BA in Graphic Design and Animation is a professionally oriented degree that provides students with a strong foundation in visual art and design for a broad range of media, including print, interactive media, film, and television. The program offers the student a chance to create an interdisciplinary program of study that will enrich the knowledge and skills the graduate takes into the constantly evolving industry. During the senior year Thesis Stage, students are able to explore their specific areas of interest indepth in a self-directed project.

#### Knowledge

- Knowledge of media production, communication, and dissemination techniques and methods.
- Knowledge of design techniques, tools, and principles involved in production of precision technical plans, drawings, and models.
- Knowledge of the theory and techniques required to compose, produce, and perform works of visual arts.
- Knowledge of electronic equipment and computer hardware and software, including applications.

#### Skills

• Using logic and reasoning to identify the strengths

and weaknesses of alternative solutions, conclusions or approaches to problems.

- Managing one's own time and the time of others.
- Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Understanding the implications of new information for both current and future problemsolving and decision-making.
- Demonstrate the principles of graphic design communication, showcasing the creative and technical abilities that produce successful graphic design projects in a variety of media.
- Demonstrate a solid foundation in design and traditional studio art, and will be able to use these skills in order to communicate effectively through visual means.
- Understand and utilize a broad range of digital design and animation tools.
- Acquire animation skills necessary for careers in motion graphics, game development, 3d and 2D animated films, television or effects animation.
- Utilize self-management skills to work autonomously on self-directed creative projects.
- Implement the use of pre-visualization, storyboarding, and essential pre-production techniques to develop complex concepts.
- Apply creative problem-solving skills to a variety of abstract problems.
- Produce a professional design and animation portfolio and reel.

#### Competences

- Create unusual or clever ideas about a giventopic or situation, or to develop creative ways to solve a problem.
- Create visual media using computer hardware and software.
- Create designs, concepts, and sample layouts, based on knowledge of layout principles and esthetic design concepts.
- Create graphics and layouts for product illustrations, company logos, and Web sites.
- Create complex graphics and animation, using independent judgment, creativity, and computer

#### equipment.

- Create objects or characters that appear lifelike by manipulating light, color, texture, shadow, and transparency, or manipulating static images to give the illusion of motion.
- Be responsible to apply story development, directing, cinematography, and editing to animation to create storyboards that show the flow of the animation and map out key scenes and characters.
- Be responsible to develop briefings, brochures, multimedia presentations, web pages, promotional products, technical illustrations, and computer artwork for use in products, technical manuals, literature, newsletters and slide shows.
- Collaborate in design and production of multimedia campaigns, handling budgeting and scheduling, and assisting with such responsibilities as production coordination, background design and progress tracking

#### **LEARNING OUTCOMES**

Apply the theories and techniques to create works of graphic design and visual arts for multiple purposes

Demonstrate the principles of graphic design communication, showcasing the creative and technical abilities that produce successful graphic design projects in a variety of media

Demonstrate a solid foundation in design and traditional studio art, and use these skills to communicate effectively through visual means

Understand and utilize a broad range of digital design and animation tools

Acquire animation skills for motion graphics, game development, 3d and 2D

Implement the use of previsualization, story-boarding, and essential preproduction techniques to develop complex concepts

7) Create complex graphics and animation, using independent judgment, creativity, and computer equipment.

#### Degree Requirements for Graphic Design and Animation

The BA in Graphic Design and Animation bachelor's is a fouryear degree program targeted towards students with an interest in practical applications of the visual arts. In their first and to some extent their second years, students will focus on completion of the University's General Edu- cation Program (41 US / 82 ECTS credits), with specialized courses in graphic design and animation gradually introduced. Into the third and fourth year students will focus increasingly on technical topics that develop the student's understanding and skills related to graphic design and animation. To earn a bachelor's degree, students must satisfactorily complete at least 120 US / 240 ECTS credits, fulfill all the requirements for the BA in Graphic Design and Animation, and achieve a CGPA of 2.00 or higher.

The degree is designed to be completed in four years, assuming students make satisfactory progress toward the degree and do not interrupt their study. Students who withdraw or take a leave of absence from the Degree Requirements program must meet requirements for returning that are outlined in the American University of Malta's Catalog. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the program, which are also detailed in the University Catalog. If a degree is not completed within a period of six years all coursework in the major will be re-evaluated for its current relevance.

## **GRAPHIC DESIGN AND ANIMATION (BA) DEGREE REQUIREMENTS**

	Number of Courses	US CR	ECTS CR
I. University General Education Requirements	13	41-42	82-84
For Details, See Section University General Education Requirements			
II. Graphic Design Core Courses US/ECTS	17	61	122
ATH 201 World Art History 3/6			
GRD 101 Introduction to Visual Design 3/6			
GRD 111 Drawing and Visualization 3/6			
GRD 201 Figure Drawing and Anatomy 3/6			
GRD 211 Digital Art Tools 3/6			
GRD 301 Time, Image, Sound 3/6			
GRD 311 Painting and Color 3/6			
GRD 321 3D Design and Modeling 4/8			
GRD 361 Graphic Design I: Topography 4/8			
GRD 371 Storyboarding and Narrative 4/8			
GRD 411 Graphic Design II: Visual Problem Solving 4/8			
GRD 421 Motion Graphics 4/8			
GRD 431 Visual Design for Games 4/8			
GRD 441 Graphic Design III: Web Design 4/8			
GRD 451 Interdisciplinary Game Project 4/8			
GRD 461 Thesis Project I 4/8			
GRD 462 Thesis Project II 4/8			
III. Animation Major Courses US/ECTS	3	12	24
GRD 331 Animation I: Motion and Methods 4/8			
GRD 341 3D Character Animation 4/8			
GRD 351 Animation II: Production 4/8			
IV. Free Electives US/ECTS	2	6	12
Free Elective 3/6			
Free Elective 3/6			
TOTAL	35	120	240

US CR = U.S. Carnegie Credits

## SAMPLE FOUR-YEAR SCHEDULE

## Bachelor of Arts in Graphic Design and Animation

	First Year, Semester 1				First Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ENG 101	English Composition I	3	6	BIO 101	Unity of Life and Lab	4	8
HIS 101	History of the Mediterranean	3	6	ENG 102	English Composition II	3	6
MAT 101	Introduction to Data Analysis, Probability, and Statistics	3	6	REL 101	Religious Worlds in Comparative Perspective	3	6
GRD 101	Introduction to Visual Design	3	6	GRD 111	Drawing and Visualization	3	6
	Free Elective	3	6				
	TOTAL	15	30			13	26

	Second Year, Semester 1				Second Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
ATH 101	Arts of the Mediterranean	3	6	ATH 201	World Art History	3	6
COM 101	Communication in a Multicultural Setting	3	6	GRD 211	Digital Art Tools	3	6
GRD 201	Figure Drawing and Anatomy	3	6	PHI 101	Introduction to Philosophy	3	6
PHY 101	Introduction to the Physical Universe and Lab	4	8	SOC 101	Introduction to Sociology	3	6
PSY 101	Introduction to Psychology	3	6		Free Elective	3	6
	TOTAL	16	32			15	30

	Third Year, Semester 1				Third Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
GRD 301	Time, Image, Sound	3	6	GRD 341	3D Character Animation	4	8
GRD 311	Painting and Color	3	6	GRD 351	Animation II: Production	4	8
GRD 321	Design and Modeling	4	8	GRD 361	Graphic Design I: Typography	4	8
GRD 331	Animation I: Motion and Methods	4	8	GRD 371	Story Boarding and Narrative	4	8
PHI 102	Applied Ethics	3	6				
	TOTAL	17	34			16	32

	Fourth Year, Semester 1				Fourth Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
GRD 411	Graphic Design II: Visual Problem Solving	4	8	GRD 441	Graphic Design III: Web Design	4	8
GRD 421	Motion Graphics	4	8	GRD 451	Interdisciplinary Game Project	4	8
GRD 431	Visual Design for Games	4	8	GRD 462	These Project II	4	8
GRD 461	Thesis Project I	4	8				
	TOTAL	16	32			12	24

TOTAL CREDIT HOURS: 120 US / 240 ECTS

# GRADUATE

## **GRADUATE STUDIES**

#### **Degree Offerings**

AUM offers two graduate programs: the MBA, and the Masters of Science in Engineering Management.

## **Application Process**

Graduate applications are evaluated by both the Office of Admissions and the Chair of the relevant academic department.

Applications for all AUM graduate programs are processed through the Admissions Office.

Prospective students may apply for full-time or parttime status. To maintain full-time status a graduate student must be enrolled for a minimum of 12 credit hours (24 ECTS credits).

Prospective students can apply online or in person.

# Materials required in the graduate admissions application:

- Official AUM application and applicable fee.
  - o Personal Statement.
- University Transcript.
  - Documents should be in English.
  - Official transcript and diploma must be presented before courses commence.
- Two (2) recommendation letters.
- Curriculum Vitae.
- Proof of English proficiency (for students who did not graduate from a secondary school or receive a degree using English as a medium of instruction). Acceptable proof of English proficiency includes:
  - o IELTS.
  - o TOEFL.
  - Cambridge English Test.
  - Other forms can be decided on a case-by- case situation.
  - AUM does not process incomplete applications.

#### University Requirements for Admission to MBA Program

- Bachelor's degree in any field.
  - e.g. US Bachelor or European 3-year initial degree, equivalent to an MQF level 6.
  - Degree must be awarded by a university accredited in its home country.
    - \* Minimum of (2.2) lower second class honors degree in UK system or equivalent in other countries.
  - Certified copies of applicant degree(s), including certificates and transcripts in the original language, as well as certified English translations, are required before courses commence.
- Two (2) years of relevant experience preferred.
- Proof of English proficiency (for students who did not graduate from a secondary school or receive a degree using English as a medium of instruction). Acceptable proof of English proficiency includes:
  - IELTS minimum of 6.5.
  - o TOEFL.
    - \* Paper based minimum 600.
    - \* Internet based minimum 80.
    - \* Computer based minimum 250.
  - Cambridge English Test (CAE, Advanced).
    - \* 58 Minimum.
  - Pearson Test of English (PTE) Academic.
    - \* Minimum of 58-66.
  - Other forms can be decided on a case-bycase situation.

## University Requirements for Admission to MS in Engineering Management Program

Students are expected to have undergraduate training in mathematics, physics, computing, and mathematical modeling. Specifically, all incoming students are expected to meet the following fundamental requirements:

- Four semesters of mathematics, beginning with a two-semester sequence in calculus,
- Three semesters of calculus-based physics and
#### <u>Admissions</u>

general engineering science,

• One semester of computing (e.g., an introductory course using a high-level language such as Java, C++, C#, Visual Basic, C, or Python).

Most undergraduate programs in science and engineering provide the required background. Students deficient in one or a small number of these areas may be admitted into the MS program on Provisional Status. During the first semester, students who are on Provisional Status will need to take courses to address the deficiencies. As soon as deficiencies are removed, students are advanced to the regular graduate status.

In addition to the fundamental requirements, all students who enter the MS program must also demonstrate satisfactory understanding of Introduction to Probability and Statistics. Admission is based on evaluation of the applicant's letter of intent, undergraduate transcript, IELTS or TOEFL score, letters of recommendation, and professional experience. Applicants are expected to have an undergraduate GPA of 3.00 on the last 60 units of course work, 79 TOEFL or 6.5 IELTS.

#### **Conditional Admission**

AUM offers conditional admission for applicants who meet all requirements except English proficiency. Conditional admits must enroll as fulltime students in the AUM English for Academic Purposes program. The minimum English proficiency score for conditional admits is 5.5 IELTS (or equivalent).

### **Application Deadlines**

**AUM Admissions Application Deadlines:** 

Fall 2018 Semester - 15 July 2019 Spring 2019 Semester – 1 November 2019

Late applications are accepted on a case-by-case basis. International Applicants

### **International applicants**

(i.e., graduates of universities located outside Malta) are required to submit completed application forms and all supporting documents to the Office of Admissions according to the following deadlines:

Fall Semester 2019 – 15 July Spring Semester 2020 - 1 November

International students have specific requirement to receive a visa and/or resident permit. The Office of Admissions in partnership with Identity Malta advises students on the specific requirements they will need in order to enter Malta and apply for resident permits.

Information for non-EU/ EEA citizens (also termed Third Country Nationals) who may require a visa to enter Malta is available through Government of Malta, specifically through Residence and Visas:

#### http://www.gov.mt

### https://integration.gov.mt/en/ResidenceandVisas /Pages/Residence.aspx

For further information regarding visa applications and Embassies closest to you, please visit the Ministry of Foreign Affairs website :

https://foreignaffairs.gov.mt/en/Pages/Home.asp <u>x</u>

### **Graduate Academic Policies**

Each student is responsible for knowing and following AUM's rules, regulations, requirements, and academic policies. Both the graduate information in the *University Catalog* and the institutional website are repositories of policy statements. Corrections, changes, or interpretations may be communicated by other means, including electronically. Any student in doubt about an academic matter should consult the Office of the Registrar or their assigned faculty advisor. Students are subject to the university's stated policies regarding patents and copyrights.

#### Academic Advising

AUM is committed to helping its graduate students achieve success in their course of study. Ensuring that students receive appropriate academic advising is part of that commitment.

New students are first advised during a required Orientation Program in which they learn about university policies and procedures and are familiarized with the current *University Catalog*. At the initial meeting with their faculty advisor during orientation, each student is informed of program procedures, course of study, and the importance of understanding the information in the graduate section of the *University Cata- log*. Advisors also answer specific questions concerning the academic program.

Faculty advisors are required to post office hours for advising that coincide with students' availability. The faculty advisor is to maintain advising files for all advisees that contain a log of meetings with a brief description of major issues discussed or advice given. Any information contained in these files shall remain confidential.

Students on probation are required to meet with their academic advisor on a regular basis to assess their progress and to report their use of AUM's resources for academic support.

Students violating AUM's attendance policy or doing poorly at mid-term are also required to meet with their advisors.

If students have concerns, comments, or recommendations about their educational experiences at AUM, they should contact the Chair of the Department of Business.

#### Appeal of Academic-Related Issues

If a student wishes to discuss an issue pertaining to a course, instructor or other academic-related issues, the

student may direct his or her concern to the involved faculty member If a satisfactory resolution of the situation is not reached, the student may appeal to the Department Chair, and finally to the Provost, who has the final authority to decide the merit of the appeal.

If the instructor is no longer associated with the University, the Provost will appoint a faculty surrogate, who will assume the authority of the instructor. If the matter is not resolved at this point, the Provost will hear the case and make a decision that is not subject to further appeal. Academic appeals requests must be submitted not later than the end of the first day of orientation week of the following semester.

#### **Attendance Policies**

Because students benefit from the lectures and activities prepared by their instructors and discussions with their fellow students, class attendance is required. Students are expected to attend all the classes, or other scheduled sessions for the courses in which they are registered, including make-up classes.

Faculty members expect graduate students to be present at all classes and may apply penalties in cases of unexcused absences.

It is the policy of AUM to make every reasonable effort to allow members of the university community to observe their religious holidays without academic penalty. Absence from class or examinations for religious reasons does not, however, relieve students from responsibility for any part of the course work required during the period of absence.

#### Change of Status, Address

Students are required to maintain current contact information with the Registrar's Office including permanent and local addresses, telephone numbers, student number, and legal name (as written in their passport). Each student must also maintain the university e-mail account assigned at the time of admission. Students are responsible for official communications directed to AUM e-mail accounts. Addresses should be updated over the Internet using the AUM website or through the Registrar's Office on the appropriate form. Name and other official identification changes require official documentation and must be processed according to the requirements of the student's nationality.

#### **Official Communication with Students**

All official university communications are distributed through the AUM-issued email address, such as notices from the library, notices about academic standing, financial information, class materials, assignments, questions, and instructor feedback. Students are responsible for becoming familiar with the content of AUM communications sent to their AUM email account, and AUM requires students to activate that account and check it regularly. These are considered official notifications. Students are responsible for checking their AUM email accounts and for responding to or acting upon messages accordingly.

Students should keep their own records of all transactions with the university (e.g., registration schedules and forms, grade reports, payment records, etc.). It is also advisable to keep copies of all tests, digital files, papers and so forth submitted in fulfillment of course work. Students should keep copies of all course syllabi.

#### **Course Credit**

Each course has a credit value. A credit represents the in-class instruction and out-of-class study per week during the fifteen (15) week semester. Normally one (1) US credit (two (2) ECTS credits) represents 50 minutes of class instruction per week per semester, in addition to 2 hours of work outside of class.

#### **Course Numbering**

000-099 Preparatory Courses that do not carrycredit.

100-299 Lower-level undergraduate courses.

300-499 Upper-level undergraduatecourses.

500-699 Graduate-level courses.

#### **Course Prerequisites and Corequisites**

Course pre-requisites or co-requisites state requirements for student entry into courses, and they reflect necessary preparation for attempting a course. It is the student's responsibility to be aware of these requirements as stated in the *University Catalog*, and to have taken pre-requisites recently enough to be of value. The instructor of the course may drop students who have enrolled in a course for which they have not met the pre-requisites.

#### **Courses and Course Schedules**

Each course offered by the university has a designated course prefix (or code) and number. The course prefix rep- resents the discipline or field of study, and the number indicates the level of the course content.

Courses are offered at the discretion of the Provost and the Chair of the Department of Business. Not every course is offered every semester.

#### **Degree Offerings**

The American University Malta offers a Master of Business Administration program and a Master's of

Science in engineering Management.

The graduation requirements will be determined by the *University Catalog* that is effective when the student joins a degree program.

#### **Final Semester Grades**

Once a final grade has been recorded, it can be changed only in cases of computational or recording error, or pursuant to a successful appeal of grade. Additional work of any type submitted to improve a grade after the final grade has been assigned is never accepted, except in the case of an "I" or "IP" grade. All changes of final grades must be initiated, approved, and recorded by the last day of classes of the next regular semester (spring for fall grades and fall for spring grades).

Students may print a grade report for their own records to issue to a third party. Students may also order official transcripts through the Registrar's Office.

#### Intellectual Property (Student Work)

Intellectual property (IP) is property (an idea, invention, or process) that derives from the work of the mind or intellect. IP is also an application, right, or registration of an idea, invention, or prose. Copyrightable works, including publications and patentable works developed in connection with course work by students who are not AUM employees, are deemed to be intellectual property that belongs to the student. However, AUM may claim copyright ownership of a work or ownership of a patentable invention when extraordinary use of university facilities, personnel, or resources is made in the development of the materials or invention, especially when unrelated to course work. Stu- dents are subject to the university's stated policies regarding patents and copyrights.

#### Leave of Absence

Occasionally, students are compelled to leave the university for a semester or two because of circumstances beyond their control. Others find they simply need a break from studying. In such circumstances, when taking a leave of absence might be wise. Students who have an approved leave of absence for a semester or a year may register for the semester in which they plan to return without applying for readmission. Unless there are extenuating circumstances such as illness, a leave of absence is not normally given to a student who leaves the university during a term.

A leave of absence maintains the student's status while away for up to two semesters. Students who wish to take a leave of absence must do so through the Office of the Vice President for Academic Affairs. All requests for a leave of absence require the completion of the *Leave of Absence* Form, and the Provost's approval, prior to the approval of the respective department chair of the student's program. If the *Leave of Absence* form is approved and the student has cleared all financial obligations, the effective date of the leave of absence is noted on the student's permanent academic record. The effective date is the date used for calculating billing or refunds. No grades for the current semester other than a "W" for the current semester are recorded.

#### **Repeating a Course**

Normally, graduate courses cannot be repeated. With the approval of the Provost, a graduate student may be allowed to repeat any course in which a grade of "C+" or "C" is received. The original grade and the new grade will appear on the transcript, but only the new grade will be calculated into the GPA.

No course may be taken more than twice.

Students may not repeat courses in an independent course format.

Note: Normally, graduate students who receive an "F" in a graduate course will not be allowed to continue in the program.

#### Time Limit on Duration of Study and Course Year Limit

All degree requirements must be completed within five years of admission to AUM as a graduate student, inclusive of any leave.

In addition, credits more than eight years old (courses transferred to AUM) at the time of graduation may not be counted toward the fulfillment of a graduate degree pro- gram.

#### **Transfer Credit Policy**

A maximum of nine (9) SCH or eighteen (18) ECTS graduate credits from a graduate school at an accredited university may be transferred to the graduate program at AUM, subject to program-specific rules and regulations. Credits for transfer must be approved by the Chair of the relevant department or the Provost. Such credits should have been earned not more than five years prior to the transfer and the student must have earned a grade of B or higher for any graduate-level course that is requested to be transferred. As a general practice, transfer credit will not be accepted for research or thesis/ dissertation work.

Grades earned in transferred courses do not count in the student's cumulative GPA (CGPA), though transferred cred- its count toward the cumulative earned hours and may apply towards meeting graduation requirements.

#### **University Withdrawal**

Official withdrawal removes students from any academic program and cancels student status at AUM. In order to return to the university, students need to apply for read- mission through the Admission Office. Students who wish to withdraw must complete a *Withdrawal* form available at the Registrar's Office and get clearance from all university departments. If the withdrawal process is completed satisfactorily and all financial obligations to the university are cleared, the effective date of withdrawal is noted on the student's permanent academic record. The effective date is the date used for calculating billing or refunds. No grades other than a "W" for the current semester are recorded.

### **ACADEMIC PROGRESS**

#### Academic Dismissal

A graduate student on probation who does not achieve good academic standing by the end of the regular semester following the term in which the cumulative GPA fell below

will be dismissed from the university.

Normally, graduate students who receive an "F" in a graduate course will not be allowed to continue in the university.

Students who have been dismissed as a result of failing to meet the requirements for good standing or who receive an "F" in a graduate course may petition for reinstatement.

Petitions will be reviewed by the Chair of the relevant department or the Provost, who will provide a written recommendation and forward the petition to the Provost.

Decisions regarding continuation in the program will be made by the Provost in consultation with the appropriate dean or appointed designee.

Students who have been academically dismissed, readmitted and subsequently dismissed will normally not be read- mitted.

#### **Academic Probation**

At the end of each semester, the Office of the Registrar will identify cases of non-compliance with the academic standards. If a graduate student's cumulative GPA is below 3.00, the student is placed on academic probation. During probation status, the following conditions apply:

A graduate student on probation may not register for more than six credit hours in a semester.

- A graduate student on probation may not register for thesis or final project credit hours until a cumulative GPA of 3.00 is achieved.
- Probation will be removed at the end of any semester in which the student attains a CGPA of 3.00.

#### **Satisfactory Progress**

To make satisfactory progress toward degree completion, a student must attain a cumulative GPA of 3.0 (B) or better.

### **GRADING INFORMATION**

#### Grade Appeal

Although faculty members are generally the best judges of student performance, sometimes a student believes a grade is unfair. In such cases, the student first asks the faculty member to reconsider the grade. If the student is not satisfied, an appeal may be made to the Provost. Unless there is new or additional information to substantiate an appeal, the Provost has the final authority in determining the appeal decision. If the instructor is no longer associated with AUM, the Provost will appoint a faculty surrogate, who will assume the authority of the instructor of record at this level of appeal. If the matter is not resolved at this point, the Provost will hear the case and make a final decision. Grade appeals are not accepted after the first two weeks of the start of the following semester (spring for fall grades, fall for spring and summer grades).

#### Grade Change

Once a final grade has been recorded, it can be changed only in cases of computational or recording error or pursuant to a successful appeal of grade. Additional work of any type submitted to improve a grade after the final grade has been assigned is never accepted. All changes of final grades must be initiated, approved, and recorded no later than after two weeks of classes of the next regular semester (spring for fall grades and fall for spring and summer grades).

#### Grade Point Average (GPA)

Grade or quality point values are assigned to letter grades as indicated in the grading system table. A quality or grade point score is computed by multiplying the value of a letter grade by the number of credits for the course. For example, a student receiving an "A" in a 3credit course earns 12 quality points. The GPA is computed by dividing the quality points earned by the number of credits graded "A" through "F" (GPA hours).

#### **Grading System**

University course work is measured in terms of quantity and quality. A credit (1 US/2 ECTS credits) normally represents 50 minutes per week of lecture throughout a semester. The number of credits is a measure of quantity. The grade is a measure of quality. The university system for graduate grading is as follows:

Graduate Grading System							
Grade	GPA Points	Percentage Scores					
А	4.0	90-100					
B+	3.5	85-89					
В	3.0	80-84					
C+	2.5	75-79					
С	2.0	70-74					
F	0	0-69					

#### Additional Grade Notations

#### Satisfactory/Unsatisfactory (S/U):

An "S" grade reflects passing work in a course (B, B+, A); a "U" grade reflects a failure (C+, C, F). "S" and "U" have no effect on grade point average.

#### Incomplete (I):

This grade is given to students who are passing a course but are unable to complete all the course work or the final exam for a verified reason beyond their control. The student must then complete all the requirements by the end of the next semester, not including any summer term, and the instructor must turn in the final grade by the end of the that semester's grading deadline. Unless an explicit written extension is filed, the grade of "I" is changed to an "F" if the course requirements have not been fulfilled. Students who have filed their intention to graduate have only six weeks from the date of tentative degree conferral to resolve any incomplete grades. An "I" grade is not calculated in a student's grade point average.

#### In Progress (IP):

The grade of "IP" indicates that the student is making progress in a course, writing a thesis or dissertation, or participating in an internship that extends beyond one semester or summer term. The grade of "IP" has no effect on the student's grade point average.

#### Withdrawal (W):

The grade of "W" on a course indicates that the student has dropped the course. While it has no effect on the GPA, dropped courses are part of attempted course credits that serve as the basis for the student's credit level. A "W" for all courses in a given semester and the transcript notation "withdrawn" indicates that the student withdrew from AUM.

### GRADUATION

#### Academic Standing Requirement

A student must be in good academic standing to be eligible for graduation.

#### Application for Graduation

Candidates for graduate degrees must file an Application for Graduation form with the Office of the Registrar during the registration period of the last expected term of study. Only after an *Application for Graduation* form has been filed can the Office of the Registrar begin processing the necessary information for final certification for graduation.

Students who fail to complete all degree requirements by the end of the term for which they apply to graduate need not reapply for graduation. Their previous application will be automatically moved to the following semester. Commencement

Commencement provides an opportunity for students and their families to celebrate their achievement. Details about commencement are circulated within a month of the date of the ceremony.

#### **Conferral of Degrees**

Only students who have successfully completed degree requirements and all thesis requirements, including corrections and final submission of the completed thesis to the library, by the end of the term for which they have applied to graduate are certified for conferral of a degree. Degrees are conferred at the end of the semester in which requirements have been met. Conferral of the degree is noted on the academic transcript of the graduate with the date of graduation.

Degrees will be conferred three times per year.

- January 15 for Fall graduates,
- June 15 for Spring graduates, and
- August 15 for Summergraduates.

#### **Final Research Thesis**

Master's theses document research conducted by AUM graduate students under the guidance and supervision of AUM faculty members. They are the culmination of the students' programs of study and are expected to reflect appropriate scholarly depth and rigor. Theses and final projects are defended publicly.

The Provost establishes and oversees the regulations and requirements for theses at AUM. It is AUM policy to

maintain master's theses in the AUM Archives and also to make theses available to other students and scholars. The AUM Library is responsible for the archiving and binding of the master's thesis.

#### **Graduation Requirements**

The graduation requirements for any individual student are normally determined by the *University Catalog* that was effective when the student began matriculated studies in the degree program. Every individual student is personally responsible for meeting all graduation requirements as detailed in his or her *University Catalog* year.

If a required course within the graduate program changes its number of credits, then the number of credits required by the program for graduation may, at the discretion of the school, change by the same amount provided the mini- mum total number of credits for graduation is 55 (109 ECTS credits) and the CGPA is at least 3.00. In case of substantial changes in course offerings, equivalent graduation requirements are determined by the Provost. Important: Course information, content and prerequisites may be subject to change as a result of the university's commitment to a process of continual improvement in academic programs. Students must comply with the most up-todate course requirements.

#### **Grading of Research Thesis**

A thesis grade will be awarded after completion and public defense of the thesis. If the thesis work continues into a second semester, an "IP" grade will be assigned, and the student must register again for the thesis course. The "IP" designation will be used until completion and successful defense of the thesis.

#### **Graduation Residence Requirements**

In order to obtain a master's degree from AUM, students must complete at least three semesters in residence at AUM.

#### Names on Degrees

The names of AUM students will be spelled in English exactly as they appear on their passports or identity cards when printed on degrees. If a name on a passport or an identity card does not appear in English, then the spelling of the name will be printed according to the personal preference of the student.

### REGISTRATION

**Course Selection and Registration** 

By mid-semester, the class schedule for the following semester is available through the Office of the Registrar and on the website. Students may select courses in consultation with their faculty/academic advisor and they can then register online or submit a completed *Course Request Form* to the Office of the Registrar by the published dead- lines.

#### **Registration Criteria**

The normal graduate student load is 9 credit hours. How- ever,

- A student with a cumulative GPA of 3.5 or above is entitled to register for 12 credit hours the following semester.
- A student with a cumulative GPA of less than 3.0 is entitled to register for 6 credit hours the following semester.
- Only 3 credit hours are allowed during a summer term.

#### **Registration for Thesis/Final Project Credit**

Graduate students registering for thesis credits must register through the Office of the Registrar. Only students in good academic standing may register for thesis/final project credits.

#### **Thesis/Final Project Time Extensions**

Students who do not complete the thesis/final project after registering for full credits must register for the full thesis/ final project credits the subsequent semester.

All students must be registered in the semester in which they defend their thesis.

**Note:** A student must complete all degree requirements within five years from the time of initial enrollment into the program.

#### **Schedule of Classes**

The list of courses offered is available around mid-semester at the Registrar's Office for the following semester's classes.

### Summer Courses Outside AUM

#### Requirements

An enrolled student is eligible to apply to take courses at another college/university during the summer with the intention of transferring credits to AUM provided the following conditions are met:

- The student must be in good academic standing at AUM.
- The summer courses at the host university must not be taken as attempts to repeat AUM courses in which "F" grades were previously earned.
- The host university must provide learning experiences similar to those offered by AUM.
- Contact/credit hours for the course at the host university must be equivalent to or greater than the contact/credit hours required for its equivalent course at AUM.
- The language of instruction of the course(s) taken at the host university must be English (except for language courses conducted in other languages), unless otherwise approved by AUM.
- The student must obtain approval from AUM prior to registering for the summer course(s).
- A degree program reserves the right not to allow for any particular course to be taken at another college/university

# Tuition and Fees for Graduate Students 2019-2020

Tuition by Program						
Program Amount (Euro) Hours Per Semester						
MBA (full time)	14,500	9-12				
MBA (part time)	810	Per US Credit Hour				
	Fe	es				
<b>Fee Type</b>	Amount (Euro)	Information				
Activity Fee	100	Per semester, non-refundable				
Admission Deposit	2000 *	Issuance of Admission Letter				
Application Fee	75	Upon submission of application, non-re	efundable			
Transcript Fee	10	Per Official Transcript				
	Deposit Requirem	ents and Deadlines				
Deposit Type	Amount (Euro)	Required From	Deadline			
		c	Fall: Upon Acceptance			
Tuition Deposit	2 000 *	Students needing a visa to enter Malta	Spring: Upon Acceptance			
Tution Deposit	2,000	Students not needing a visa to enter	Fall: Upon Acceptance			
permit		permit	Spring: Upon Acceptance			
Housing Deposit	750	Guarantees an accepted student a spot at AUM residence	<sup>t</sup> Upon Acceptance			

Deposits are refundable only in case the student is denied a visa.

\* Deposit amount is dependent upon student's home country's visa requirements.

	<b>Tuition</b> Re	efund Policy
Withdraw By	% Refund	
End of First (1st) Week of Semester	100%	
End of Second (2nd) Week of Semester	75%	
End of Third (3rd) Week of Semester	50%	
End of Fourth (4th) Week of Semester	25%	
Beyond the end of the 4th Semester Week	No Refund	

### MASTERS OF BUSINESS ADMINISTRATION

The Master of Business Administration (MBA) meets the highest international standards and provides graduate students with skills and information valuable for their professional success. The curriculum enables students to address significant current issues and allows them to engage with one another and their professors in stimulating discussions and challenging assignments. Their experienced faculty are from leading universities in North America, Europe, and elsewhere, and are dedicated to their students' success.

#### **Program Learning Outcomes**

- 1. Information literacy skills: Students will demonstrate a proficiency with technology and analytical techniques for decision-making.
- 2. Critical thinking skills: Students will demonstrate critical thinking skills and analyses.
- 3. Social/networking skills: Students will be able to communicate effectively with different stakeholders of an organization.
- 4. Managerial skills: Students will be able to effectively combine concepts, theories and principles across various functional areas of a business organization, to address managerial issues.
- 5. Professional communication skills: Students will demonstrate the ability to clearly and concisely communicate ideas both in oral and written forms.

MASTER OF BUSINESS ADMINISTRATION						
		Number of Courses	US CR	ECTS CR		
II. Business Administration Core Courses	US/ECTS	11	33	66		
FIN 510 Financial Accounting	3/6					
FIN 520 Economics for Managers	3/6					
FIN 530 Managerial Accounting	3/6					
FIN 540 Money and Banking	3/6					
MGT 501 Business Statistics	3/6					
MGT 510 Business Law	3/6					
MGT 520 Strategic Management	3/6					
MGT 530 Financial Management	3/6					
MGT 540 Operations Management	3/6					
MGT 550 Organizational Theory	3/6					
MGT 560 Marketing Management	3/6					
III. Research Courses	US/ECTS	2	15	30		
MGT 610 Research Methods for Business	3/6					
MGT 620 Research Project	12/24					
MBA TOTALS		13	48	96		

US CR = U.S. Carnegie Credits

ECTS CR = European Credit Transfer Credits

# SAMPLE TWO-YEAR SCHEDULE

### Master of Business Administration

First Year, Semester 1					First Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
FIN 510	Financial Accounting	3	6	FIN 530	Managerial Accounting	3	6
FIN 520	Economics for Managers	3	6	MAT 501	Business Statistics	3	6
MGT 550	Organizational Theory	3	6	MGT 610	Research Methods for Business	3	6
MGT 560	Marketing Management	3	6	MGT 520	Strategic Management	3	6
	TOTAL	12	24			12	24

	Second Year, Semester 1				Second Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
FIN 540	Money and Banking	3	6	MGT 620	Research Project	12	24
MGT 510	Business Law	3	6				
MGT 530	Financial Management	3	6				
MGT 540	Operation Management	3	6				
	TOTAL	12	24			12	24

#### TOTAL CREDIT HOURS: 48 US / 96 ECTS

US CR = U.S. Carnegie Credits

ECTS CR = European Credit Transfer Credits

### Master of Science in Engineering Management

The MS in Engineering Management is designed for graduate engineers aspiring to advance into management careers within technological organizations. In a global economy, it is vital for companies to hire and develop new talent that can bridge communication gaps in many contexts. Students are trained to lead multi-disciplinary teams and translate customer needs into new engineering technologies. In a global context, our students are adept at finding common ground and fostering international ties to create new ideas and perspectives. Our students gain an understanding of project management, finance, technical sales & marketing, law for engineers, decision-making under uncertainty. Our program focuses on creating leaders who are able to adapt to dynamic business environments.

#### **Program Learning Outcomes**

- 1. Prepare professional proposals and reports
- 2. Competently deliver oral presentations to technical and lay audiences
- 3. Develop and use effective audio/visual aids
- 4. Write effective professional communications such as email and memorandums
- 5. Communicate within the engineering disciplines through plans and drawings
- 6. Understand the impact of engineering solutions in a global, economic, environmental, and societal context
- 7. Recognize the need to engage life-long learning
- 8. Be capable of developing a career plan including options for advanced education or specialized training to enhance career
- 9. Have the ability to autonomously initiate and engage in life-long learning

M.S. Engineering Management						
			Number of Courses	US CR	ECTS CR	
II. Engineering I	Management Core Courses	US/ECTS	13	39	78	
IEE 514	Law for Engineers and Scientists	3/6				
IEE 557	Project Management	3/6				
IEE 530	Engineering Statistics	3/6				
IEE 515	Technical Sales and Marketing	3/6				
IEE 522	Decision-Making Under Uncertainty	3/6				
IEE 506	Quality Engineering	3/6				
IEE 540	Survey of Optimization Methods	3/6				
IEE 554	Systems Engineering Process	3/6				
IEE 567	Financial Modeling for Innovation	3/6				
IEE 531	Simulation Modeling and Analysis	3/6				
IEE 565	Supply Chain Management	3/6				
IEE 564	Cost Estimation	3/6				
IEE 562	Production Systems Analysis	3/6				
III. Research Cou	ırses	US/ECTS	2	6	12	
IEE 598A	Master's Capstone I	3/6				
IEE 598B	Master's Capstone II	3/6				
	MBA TOTALS		15	45	90	

US CR = U.S. Carnegie Credits

ECTS CR = European Credit Transfer Credits

#### SAMPLE TWO-YEAR SCHEDULE **M.S. Engineering Management** First Year, Semester 1 First Year, Semester 2 Course Title US CR ECTS CR Course Title US CR ECTS CR IEE 514 Law for Engineers and Scientists 3 6 IEE 522 Decision-Making Under 3 6 Uncertainty 3 6 IEE 557 Project Management 3 6 IEE 506 **Quality Engineering Engineering Statistics** 3 Survey of Optimization Methods 6 IEE 530 6 IEE 540 3 Technical Sales and Marketing 3 6 IEE 554 Systems Engineering Process 3 6 IEE 515

	Second Year, Semester 1				Second Year, Semester 2		
Course	Title	US CR	ECTS CR	Course	Title	US CR	ECTS CR
IEE 567	Financial Modeling for Innovation	3	6	IEE 564	Cost Estimation	3	6
IEE 531	Simulation Modeling and Analysis	3	6	IEE 562	Production Systems Analysis	3	6
IEE 565	Supply Chain Management	3	6	IEE 598B	Master's Capstone II	3	6
IEE 598A	Master's Capstone I	3	6				
	TOTAL	12	24			9	18

24

12

#### TOTAL CREDIT HOURS: 48 US / 96 ECTS

US CR = U.S. Carnegie Credits

TOTAL

ECTS CR = European Credit Transfer Credits

12

24

### **Course Information**

Each course offered by the university has a designated course prefix (or code) and number. The course prefix represents the discipline or field of study, and the number indicates the level of the course content.

#### **Course Level Number:**

- 000-099 numbered courses are for developmental purposes and do not count toward a degree.
- 100-level number courses are typically available to first-year students and do not have a prerequisite.
- 200-level number courses are typically secondyear courses.
- 300-level number courses are intended for more advanced third-year students.
- 400-level courses are typically intended for fourthyear students.
- Courses numbered 500 and above are for graduate students only, except for 500-level courses, which may be taken by second-semester fourth- year students with permission of the instructor and the Department Chair.

The course descriptions indicate each courses code, number, topics of study, prerequisites, number of credits assigned, lecture clock hours, and laboratory clock hours.

Numbers following the course title indicate semester credit hours, lecture clock hours per week and lab clock hours per week for both U.S. Carnegie Units/Credits (US) and European Credit Transfer System Credits (ECTS); e.g., 3 3 0 indicates three semester credit hours, three clock hours of lecture per week (sometimes referred to as seat time) and zero clock hours of lab per week.

#### Example: ACC 101 (US 3 3 0 | ECTS 6 3 0)

3 US credits, 3 lecture clock hours, 0 laboratory clockhours [6 ECTS credits, 3 lecture clock hours, 0 laboratory clock hours.

#### Example: BIO 101 (US 4 3 2 | ECTS 8 3 2)

4 US credits, 3 lecture clock hours, 2 laboratory clockhours [8 ECTS credits, 3 lecture clock hours, 2 laboratory clock hours.

### **Course Abbreviations**

Course Title	Code
Accounting	ACC
Art / Art History	ATH
Biology, Bioinformatics, Biotechnology	BIO
Business	BUS
Chemistry	CHE
Chinese Language and Culture	СНІ
Communication	СОМ
Computer Science	CSC
Electronics and Communications Engineering	ECE
Economics	ECO
English	ENG
English for Academic Purposes	EAP
Finance	FIN
Graphic Design	GRD
History	HIS
Management	MGT
Mathematics	MAT
Philosophy	PHI
Physics	РНҮ
Psychology	PSY
Religion	REL
Sociology	SOC

### **Course Descriptions**

#### ACCOUNTING

#### ACC 101 Principles of Accounting I (US 3 3 0 | ECTS 6 3 0)

Principles of Accounting I provides an introduction to financial accounting as the means of recording, storing, and summarizing economic events of the business enterprise to meet external reporting needs. Emphasis is placed on the preparation and analysis of financial statements and other financial reports to the public based on the accounting equation, accrual accounting concepts, and data gathering techniques. Topics include corporate accounting for current and long-term assets and current liabilities and the corporate income statement. *No Prerequisite* 

#### ACC 102 Principles of Accounting II (US 3 3 0 | ECTS 6 3 0)

Principles of Accounting II provides an introduction to manufacturing accounting, cost allocation techniques, and the evaluation of management control systems. Students will examine manufacturing cost systems including job order costing, process costing, and activity-based costing. Tools for management control systems will be covered to enable the student to evaluate and compare various systems. The module also covers budgeting and variance analysis, job costing for the service sector, and cost analysis for decisionmaking. *Prerequisite: ACC 101 Principles of Accounting I* 

#### ACC 201 Intermediate Accounting I (US 3 3 0 | ECTS 6 3 0)

This course provides coverage of present value and assets, including Intermediate theory and preparation of financial statements, review of accounting concepts and theories that guide development of accounting models, methods, and problems in valuation and reporting the emphasis on current assets and liabilities, property, plant, equipment, and intangibles, and review of relevant authoritative literature. *Prerequisite: ACC 102 Principles of Accounting II* 

#### ACC 202 Intermediate Accounting II (US 3 3 0 | ECTS 6 3 0)

This is a continuation of ACC 201, and covers preparing and understanding financial statements and complex accounting principles and concepts, right-hand side of the balance sheet, detailed footnotes to the financial statements, and cash flow statements. The material covered in this module comprises a significant portion of the Uniform CPA exam. *Prerequisite: ACC* 201 Intermediate Accounting I

### ACC 301 Advanced Accounting (US 3 3 0 | ECTS 6 3 0)

Advanced Accounting focuses on accounting for multicorporate entities and acquisitions, accounting for local governments, accounting for non-profit organizations, foreign operations, partnership accounting, and segment reporting. Selected spreadsheet applications will be introduced through homework assignments. *Prerequisite: ACC 202 Intermediate Accounting II* 

### ART HISTORY

### ATH 101 Introduction to the Arts of the Mediterranean (US 3 3 0 | ECTS 6 3 0)

This class is designed to give students a broad historical survey of art history in Europe with the emphasis on the Mediterranean region. The students will learn about art historical developments during this period, relations between art and politics, and dynamics of patronage and cultural exchange. Students will also extend their knowledge and experience of the arts while developing their critical and reflective abilities. In this module students will interpret and analyze particular creative works, investigate the relations of form and meaning, and through critical activity come to experience art with greater openness, insight, and enjoyment. This class will not only focus on works of art as such, but will also incorporate analysis of social and cultural issues that shaped the production of works of art. *No prerequisite* 

#### ATH 201 World Art History (US 3 3 0 | ECTS 6 3 0)

Knowledge of a broad range of art and visual culture is a core knowledge area for the Graphic Design and Animation course. This module offers an introductory survey of world art created during ancient times through the present. Research will include techniques, styles, content within historical and social contexts in various media and cultures. Emphasis is given to the roots of contemporary visual culture. *No prerequisite* 

#### **BIOLOGY**

#### BIO 101 Biology (Unity of Life) and lab (US 4 3 2 | ECTS 8 3 2)

This module will demonstrate how life on earth conforms to the laws of physics (through the emergent properties of chemistry and energy), how organisms are built from cells, how those cells function, how the information that makes cells work is stored, and how those processes must inevitably result in the natural selection that drove the evolution of all life on earth, including ourselves. *No prerequisite* 

#### **BUSINESS**

#### BUS 100 Business Technology and Society (US 3 3 0 | ECTS 6 3 0)

This course introduces students to the historical and cur- rent relationships between business, technology, and society in different parts of the world. Through studying and discussing theories, research, trends, and developments, students critically analyze the complex and contradictory ways business, technology, and social systems interact. *No prerequisite* 

#### **CHEMISTRY**

#### CHE 101 Introduction to Chemistry and Lab (US 4 3 2 | ECTS 8 3 2)

Introduction to Chemistry exposes students to fundamental concepts in the field of chemistry. The module may be used by non-science majors to satisfy a natural science requirement within the general education program; students interested in majoring in one of the natural sciences may use this course to prepare for a traditional general chemistry sequence. *No prerequisite* 

# CHE 111 Introduction to General Chemistry and Lab (US 4 3 2 | ECTS 8 3 2)

This course provides a fundamental understanding to chemical principles around us, engage prior knowledge and introduction of new chemical concepts resulting in the establishment of a sound basis for further units of study. The first part of the module includes aspects of matter, electronic structure, chemical bonding and the quantitative relationship between reactants and products. The remainder of the module includes mastery of topics in physical applications to chemical systems such as the study of heat and energy associated with a reaction, gas laws, liquids and solids. *No prerequisite* 

#### CHE 112 General Chemistry II and Lab (US 3 3 2 | ECTS 6 3 2)

This module strengthens the understanding of the basic chemical principles through a broad range of applications in the real world. Modules will be based on both theoretical and practical applications allowing in-depth knowledge that can be utilized in any chemical field. Students will be encouraged to develop problem-solving and critical thinking skills. The first part of the module includes aspects of thermodynamics, fundamental equilibrium concepts, acid- base equilibria and equilibria of other reaction classes. The second part of the module includes mastery of topics in electrochemistry, kinetics, metal / metalloid and nonmetal, transition metals and coordination chemistry, nuclear and organic chemistry. *Prerequisite: CHE 111* 

#### CHINESE LANGUAGE AND CULTURE

#### CHI 101 Beginning Chinese I (US 5 3 0 | ECTS 10 3 0)

This course is designed to develop students' ability to understand basic modern Chinese in both written and spoken form, to be able to converse effectively in Chinese with native speakers in various contexts, and to prepare students for more advanced Chinese-related studies or jobs in China. The course will work on all four basic skills in language learning: speaking, listening, reading and writing. *No prerequisite* 

#### CHI 102 Beginning Chinese II (US 5 3 0 | ECTS 10 3 0)

This course is designed to further develop students' ability to understand simple modern Chinese in both written and spoken form, and to be able to converse in Chinese with native speakers in various contexts using short sentences. The course will continue to train the four basic skills in language learning: speaking, listening, reading and writing. *Prerequisite: CHI 101 Beginning Chinese I* 

#### CHI 201 Intermediate Chinese I (US 5 3 0 | ECTS 10 3 0)

Intermediate course with more emphasis on communication skills and structure. Reading and writing practice with- out phonetic aids; oral practice in and outside the class, paying special attention to idiomatic usage; introduction to cultural perspectives through readings and cultural activities. *Prerequisite: CHI 102 Beginning Chinese II* 

#### CHI 202 Intermediate Chinese II (US 5 3 0 | ECTS 10 3 0)

Intermediate course with more emphasis on communication skills and structure. Reading and writing practice without phonetic aids; oral practice in and outside the class, paying special attention to idiomatic usage; introduction to cultural perspectives through readings and cultural activities. *Prerequisite: CHI 201 Intermediate Chinese I* 

#### CHI 301 Advanced Chinese I (US 4 3 0 | ECTS 8 3 0)

The course is designed for students who have completed two years of Chinese language training and are ready to progress from intermediate low to intermediate mid proficiency level. The course is designed to invite students to actively participate in the process of acquiring skills in intermediate/early advanced modern Chinese, from listening and speaking to reading and writing. The texts are selected to introduce current issues in China that encourage students to contribute their thoughts to the discussion. Issues in Chinese society can be easily extended to those in other Chinese speaking countries with certain variations, which also provides an opportunity for the students to explore the similarities and differences in various Chinese speaking communities. The materials cover various topics for discussion. Students are expected to actively participate in the learning process. As language learning is generally a learner-oriented process, students will be expected to be fully prepared before class. Class time is for practice and communication in Chinese. Prerequisite: CHI 202 Intermediate Chinese II

#### CHI 302 Advanced Chinese II (US 4 3 0 | ECTS 8 3 0)

This course is designed for students with at least five semesters of Chinese language training and are ready to progress from intermediate mid to intermediate high proficiency level. The focus of the course is for students to

#### Course Descriptions

actively participate in meaningful conversations and complete well-formed essays. Students will learn various styles (genres) of written Chinese and be able to discuss various topics or express opinions by using more sophisticated sentence patterns, terms and phrases. The course will cover the following styles of writing: description, narration, summary, technical writing, opinion/expository, arguments/ persuasion. *Prerequisite: CHI 301 Advanced Chinese I* 

#### CHI 305 Chinese Linguistics (US 3 3 0 | ECTS 6 3 0)

The course introduces students to various linguistic aspects of Chinese language. The course runs along two parallel lines: the introduction of the general linguistic theory and the introduction of Chinese language, mainly the modern standard variety - Mandarin, but also its regional varieties. The first line prepares the students with necessary analytical tools to approach and analyze language in general and the second line applies the theoretical approaches to Chinese. Specific topics include history and evolution of Chinese language. phonetics. phonology, morphology, svntax. semantics/pragmatics, writing system, classification of languages, dialects, language and culture, language acquisition, and the brain and language. The course is taught in English. *No prerequisite* 

#### CHI 310 History of Ancient China (US 3 3 0 | ECTS 6 3 0)

This module examines Chinese history from its origin until 17th century CE. Designed as a reading-intensive course, it emphasizes the interpretation and analysis of primary source texts in translation. All readings and discussions are in English. *No prerequisite CHI 340 Chinese Culture through Film* 

#### CHI 320 History of Modern China (US 3 3 0 | ECTS 6 3 0)

This module examines the Chinese history from 17th century until today. Designed as a reading-intensive course, it emphasizes the interpretation and analysis of primary source texts in translation. All readings and discussions are in English. *No prerequisite* 

#### CHI 330 History of Popular China (US 3 3 0 | ECTS 6 3 0)

This course, taught in English, provides a critical examination of modern Chinese popular culture and its global cultural significance in the contemporary world. From film to literature, from music to theatre, from religion to politics, this course probes modern Chinese popular culture as it has manifested itself, and traces its sociopolitical, aesthetic, and affective impact on the contemporary world. *Prerequisite: CHI 301* 

#### CHI 340 Chinese Culture through Film (US 3 3 0 | ECTS 6 3 0)

This course examines Chinese cinema in juxtaposition with popular culture and other forms of media such as television, music, and journalism in a broad sociopolitical and historical context. While focusing specifically on film productions, cultural consumption, and media representations in the contemporary era of mainland China, we will place these discourses within a general framework of national tradition and identity, and track their evolutions from the beginning of the twentieth-century. Instruction in English. *No prerequisite* 

### CHI 350 Pre-Modern Chinese Literature (US 3 3 0 | ECTS 6 3 0)

This module studies Chinese literature from the 8th century B.C.E. to the 19th century C.E., and examines major genres in Chinese literature, including poetry, prose, drama, fiction, and literary criticism. All readings and discussions are in English. *No prerequisite* 

#### CHI 360 Buddhism (US 3 3 0 | ECTS 6 3 0)

This module studies Buddhism in China since the 1st century C.E. It examines the formation of Chinese Buddhism and its overall influence on Chinese culture and society. All readings and discussions are in English. *No prerequisite* 

#### CHI 370 Chinese for Professionals I: Business (US 3 3 0 | ECTS 6 3 0)

This course offers advanced study of spoken and written Chinese, including vocabulary, concepts, and expressions, common to the Chinese-speaking business communities, with an emphasis on communicative competence in business settings and transactions. All readings and discussions are in Chinese. *Prerequisite: CHI 302 Advanced Chinese II* 

# CHI 380 Chinese for Professionals II: Health & Medicine (US 3 3 0 | ECTS 6 3 0)

This course, while continuing to build up a student's general language proficiency in Chinese, offers the study of medical concepts and terminology with an emphasis on communicative competence in health topics. It also pays attention to developing abilities in reading Chinese medical writings and translating simple paragraph-long medical texts. All readings and discussions are in Chinese. Prerequisite: CHI 302 Advanced Chinese II

# CHI 410 Studies in Chinese Language I: Social Issues (US 3 3 0 | ECTS 6 3 0)

The course provides advanced training aiming at developing linguistic fluency and communicative competence through a topic-based course design. While continuing to develop reading and writing skills, students will expand their speaking repertoire to include more linguistically and intellectually challenging topics, such as social issues and current events. All readings and discussions are in Chinese. *Prerequisite: CHI 302* Advanced Chinese II

### CHI 420 Studies in Chinese Language II: Literature (US 3 3 0 | ECTS 6 3 0)

The course provides advanced training in the spoken and written language through a close reading of selected modern classics of Chinese literature. Students are expected to learn more sophisticated vocabulary, syntax, and styles of writing in Chinese and become familiar with different genres of literary works and the key literary figures associated with the New Culture Movement in the 20th Century China. More emphasis is given to building up the capacity to write effectively and eloquently. All readings and discussions are in Chinese. *Prerequisite: CHI 302 Advanced Chinese II* 

#### CHI 450 Contemporary Chinese Literature (US 3 3 0 | ECTS 6 3 0)

This course is an analysis of the changing literary and cultural patterns through the reading of the representative works of modern and contemporary Chinese writers. A review of the literary background and close analysis of the literary expression of earlier short stories will present a strong contrast to the changing aspects of the family, society, religion, philosophy and gender roles between the old and new China. This course will also cover literary practices in Taiwan. All works are read in English translations. *No prerequisite* 

#### CHI 460 Philosophy in Ancient China (US 3 3 0 | ECTS 6 3 0)

This module studies the history of Chinese philosophy from the 5th century BCE to the 2nd century CE. It examines Chinese philosophers' opinion on the questions of life and death, history and society, education and personal cultivation, etc. All readings and discussions are in English. *No prerequisite* 

#### CHI 461 Philosophy in Medieval China (US 3 3 0 | ECTS 6 3 0)

This module examines the history of Chinese philosophy from the 2nd century BCE to the 18th century CE. The emphasis is on the Han Confucianism, Neo-Daoism, the Buddhist influence on the formation of Neo-Confucianism, and the main ideas of Neo-Confucianism. All readings and discussions are in English. *No prerequisite* 

### CHI 462 Intellectual History of Modern China (US 3 3 0 | ECTS 6 3 0)

This module studies the intellectual history of China from the 19th century to the present, and examines the conflict of traditional and modern values in China and the influence of Western ideas on the formation of modern Chinese thought. All readings and discussions are in English. *No prerequisite* 

#### CHI 463 The View of History in the Ancient World (US 3 3 0 | ECTS 6 3 0)

This module of comparative studies examines the view of history in three major traditions: the Indo-Hellenic, the Chinese, and the Judeo-Christian, and the relationship of the Judeo-Christian view and the modern notion of "progress." It explores also important topics in historical understanding: nature and freedom, fact and value, past and future, etc. All readings and discussions are in English. No prerequisite

# CHI 470 Culture, Society, and Politics in China (US 3 3 0 | ECTS 6 3 0)

This course examines fundamental cultural values, patterns of social life, as well as governance and politics in modern China. Students, while becoming familiar with key theoretical concerns of cultural anthropology, gain an understanding of important aspects of contemporary Chinese society in the context of rapid social changes and globalization. Readings and Discussions are in English. *No prerequisite* 

#### **CIVIL ENGINEERING**

#### CIE 210 Engineering Graphics (US 2 0 2 | ECTS 4 0 2)

Students develop practical skills to contribute in a civil engineering firm. The course gives students a comprehensive introduction and understanding of AutoCAD Civil 3D software. Class will focus on AutoCAD software and touch on hand drafting methods. Comprehension of course curriculum will be measured by final project requirement. *No prerequisite* 

#### CIE 214 Statics (US 3 3 0 | ECTS 6 3 0)

This course is an engineering science course in which fundamental math and science knowledge is applied in more complex, but basic, engineering applications. It builds on basic math and physics to analyze static (non-accelerating) systems. Topics include equilibrium of a particle, equivalent and resultant force systems, equilibrium, geometric properties of areas and solids, trusses, frames and machines, shear force and bending moments, friction. *Prerequisites MAT* 130 and PHY 240

#### CIE 215 Mechanics of Materials (US 3 3 0 | ECTS 6 3 0)

A continuation of CIE 214, this course covers such topics as material behavior; relationship between external forces acting on elastic and inelastic bodies and the resulting behavior; stress and deformation of bars, beams, shafts, pressure vessels; stress and strain; combined stresses; columns. *Prerequisite CIE 214* 

#### CIE 218 Mechanics of Fluids (US 4 3 1 | ECTS 8 3 1)

A continuation of CIE 215. Here, fluids, primarily water, are considered. Topics include hydrostatics, continuity, irrotational flow, pressure distributions, weirs and gates, momentum and energy, surface drag, pipe friction, form drag, pipe fitting losses. *Prerequisite CIE 215* 

#### CIE 251 Elementary Surveying (US 3 3 0 | ECTS 6 3 0)

#### Course Descriptions

To provide necessary basic civil engineering skills and an understanding of data collection, the course provides a basic introduction to surveying as it pertains to the field of civil engineering. The focus is on the theory of measurements, vertical and horizontal control methods, topographic surveys, public land surveys, and construction surveys. *Prerequisite MAT 110* 

#### CIE 301 Engineering Communications (US 3 3 0 | ECTS 6 3 0)

This course introduces students to communication skills for graduates to be successful engineers. Elements of written and oral communications for engineers including technical writing skills for proposal and report preparation, delivery techniques for oral presentations, and the effective use of audio/visual aids. *Prerequisite ENG 102 and Upper Division Standing* 

# CIE 303 Numerical Analysis for Civil Engineers (US 3 3 0 | ECTS 6 3 0)

This course provides students supporting knowledge in solving problems using numerical techniques that are necessary in multiple engineering applications. Finding Roots of Nonlinear Equations, Solution Techniques for System of Linear Equations, Curve Fitting – Polynomial and Spline Interpolation, Least Squares Fit, Numerical Differentiation and Integration, Solution of Ordinary Differential Equations - Initial and Boundary Value Problems; Use of MATLAB codes in Numerical Analysis for solving Civil Engineering Problems. *Prerequisites MAT 105 and MAT 250* 

# CIE 310 Probability and Statistics in Civil Engineering (US 3 3 0 | ECTS 6 3 0)

This course provides students supporting knowledge to recognize and assess the uncertainties associated with civil engineering designs and to judge its impact in selecting an acceptable design. Statistical decision theory and its application in civil engineering, identification and modeling of non-deterministic problems in civil engineering and the treatment thereof relative to engineering design and decision making, statistical reliability concepts. *Prerequisite MAT 120* 

#### CIE 323 Hydraulic Engineering and Design (US 4 4 0 | ECTS 8 4 0)

This course covers the hydraulics/water resources component of the breadth in civil engineering that is required of all civil engineering students. Open channel flow, natural streams and waterways, hydrologic analysis and design, pressure flow, analysis and design of pipe networks and pump systems. *Prerequisite CIE 218* 

#### CIE 333 Elementary Structural Analysis (US 3 3 0 | ECTS 6 3 0)

This course builds on the engineering sciences of statics and mechanics of materials to provide third year students with skills to analyze complex structural systems. These skills and techniques are the basis of structural design. Analysis of Structures: beams, frames and trusses. Statically determinate structures; influence lines; deflections by the virtual work method. Statically indeterminate structures using the superposition method. Prerequisite CIE 215

#### CIE 334 Structural Design in Steel (US 3 3 0 | ECTS 630)

This course provides a design-based experience in the structural subspecialty of civil engineering. Design of steel members, connections and simple structures, introduction to load and resistance factor design concept, including tension members, laterally supported and unsupported beams, columns, bolted and welded connections. *Prerequisite CIE 333* 

### CIE 335 Structural Design in Concrete (US 3 3 0 | ECTS 6 3 0)

This course provides a design-based experience in the structural concrete subspecialty of civil engineering. Analysis and design of reinforced concrete members subjected to flexure, shear and axial loads; deflection of beams; bond and development of reinforcement. *Prerequisite CIE 333* 

#### CIE 343 Soil Mechanics (US 4 3 1 | ECTS 8 3 1)

This course provides a fundamental understanding and application of soil properties, their behaviour and connection to civil engineering design and covers a component in the breadth in civil engineering that is required of all civil engineers. The fundamental physical and mechanical properties of soils and how to use them in the design of simple foundation and earth retaining systems. Certain fundamental principles of solid mechanics and fluid mechanics will be used to describe the mechanical behaviour of soils. *Prerequisite CIE* 215

### CIE 363 Transportation Engineering and Pavement Design (US 4 4 0 | ECTS 8 4 0)

Basis for planning, design, and operation of transportation facilities. Driver and vehicle description, performance characteristics, highway geometric and pavement design principles; traffic analysis and transportation planning. *Prerequisite Upper Division Standing* 

#### CIE 381 Construction Engineering Management (US 3 3 0 | ECTS 6 3 0)

This course covers a component in the breadth in civil engineering that is required of all civil engineers. It provides an opportunity to develop an enhanced understanding of construction industry and practices in preparation to contribute to construction firms, project management consultants, and owners and to improve project delivery by understanding linkages between design and construction. *Prerequisite Upper Division Standing* 

#### CIE 389 Materials Testing Lab (US 1 0 2 | ECTS 2 0 2)

This course provides a hands-on laboratory experience to

better comprehend the theoretical and practical materials concepts. Selected testing of steel, concrete, wood, and bituminous materials according to standard test procedures. Prerequisite CIE 215

#### CIE 408A Issues in Civil Engineering Practice (US 3 3 0 | ECTS 6 3 0)

This course bridges the gap between academic engineering study and practice through understanding the business and ethical issues that face engineers. Introduction to non-technical issues impacting the practice of design professionals in the private and public sectors including types of organizations; income, expenses, and profit; quality-based selection for obtaining and performing work; contracts; dispute resolution methods; professional ethics. *Prerequisite: at least 2 of CIE 323, CIE 334 or CIE 335, CIE 343, CIE381; Corequisite: CIE301* 

#### CIE 408B Civil Engineering Senior Capstone Design (US 3 3 0 | ECTS 6 3 0)

A culminating experience for majors involving a substantive project that demonstrates a synthesis of learning accumulated in the major, including broadly comprehensive knowledge of the discipline and its methodologies. *Prerequisite: CIE 301, CIE 408A, and at least 4 of CIE 323, CIE 334 or CIE 335, CIE 343, CIE 363, and CIE381* 

#### CIE 427 Computer Applications in Hydraulics (US 3 3 0 | ECTS 6 3 0)

This course is intended to introduce students to water resources engineering design. This is accomplished by learning the principles behind and applying several widely used computer programs. The models are used extensively to perform sensitivity analysis and to design several real-world systems. Computer modeling of surface water hydrology, flood plain hydraulics and water *distribution* systems. Theoretical basis. Application and design studies. *Prerequisite CIE 323* 

#### CIE 440 Foundation Engineering (US 3 3 0 | ECTS 6 3 0)

This course provides a design-based experience in the geotechnical subspecialty of civil engineering. Settlement and bearing capacity of shallow and deep foundations; beam on elastic foundation; design of footings and pile foundations; foundations on metastable soils; the use of computer codes for foundation problems. *Prerequisite CIE 343* 

#### CIE 442 Ground Improvement (US 3 3 0 | ECTS 6 3 0)

This course expands a student's knowledge in the field of geotechnical engineering with detailed knowledge in techniques for enhancing ground conditions. Different ground improvement techniques including those without addition of materials and those that add materials or use reinforcing elements. Students develop a range of generic skills including written communication skills, problem solving skills and analysis and critical evaluation skills. *Prerequisite CIE 343* 

#### CIE 463 Traffic Flow and Capacity Analysis (US 3 3 0 | ECTS 6 3 0)

This course provides a design-based experience in the transportation subspecialty of civil engineering. Methods for the efficient and safe operation of transport facilities through analysis of capacity, safety, speed, parking, and volume data. *Prerequisite CIE 363* 

#### CIE 482 Construction Project Planning, Scheduling and Control (US 3 3 0 | ECTS 6 3 0)

This course expands a student's knowledge in the field of construction engineering management with detailed knowledge in project management. Develop an enhanced understanding of construction project planning, scheduling, execution, and control in preparation to contribute to construction firms, project management consultants, and owners. Topics include network scheduling, critical path method, resource allocation, cost control, software applications to scheduling, and contract documents. *Prerequisite CIE 381* 

#### COMMUNICATIONS

### COM 101 Introduction to Multicultural Communication (US 3 3 0 | ECTS 6 3 0)

This course develops international understanding, cultural intelligence, inclusivity, and sensitivity by developing critical and analytical skills that teach different ways of being and behaving in diverse settings. It will also enhance the intercultural appreciation required to live and work successfully in an increasingly multicultural, multi-ethnic, and global world. *No Prerequisite* 

#### COMPUTER SCIENCE

### CSC 101 Introduction to Computers and Technology (US 3 3 0 | ECTS 6 3 0)

This course introduces students to computer concepts in hardware, software, networking and computer security, database management concepts (table, record, queries, primary, foreign keys, etc. in a relational database), basic programming concepts such as variable, function, objects etc. using Java, basic web programming (HTML, CSS, etc.), and office suite (Word, Excel, PowerPoint), which are very important for all students in terms of how computing processes take place. The course provides students an understanding of computing environments and how computing processes take place. Students will also obtain the ability to use some basic tools and set ups for computer programming. *No Prerequisite* 

#### CSC 201 Introduction to C (US 3 3 0 | ECTS 6 3 0)

This course introduces students to fundamental C Programming language concepts. The course also introduces a general programming approach valid for any programming language. The main concepts taught are Fundamentals of programming, Compilation of a C program, Variables, Data Types in C, Arithmetic Expressions, Loop, If Statements, Arrays, Functions, Structures, Strings, I/O operations. No prerequisite

#### CSC 210 Introduction to C++ (US 3 3 0 | ECTS 6 3 0)

This is an introductory course in computer programming covering basic data types, variables, flow of control, functions, parameter passing, pointers and pass by reference, arrays, C strings and the C string library, basic input/output and structures. Examples in this course will concentrate on basic procedural algorithms for manipulating data. *Co-requisite: MAT 230 Discrete Mathematics* analysis

### CSC 220 Data Structures (US 3 3 0 | ECTS 6 3 0)

This course covers the design, implementation, application and analysis of algorithms on a variety of data structures, including lists, stacks, queues, trees, heaps, hash tables and graphs. Implementation is done in C++. *Prerequisite: CSC 210 Introduction to C++* 

#### CSC 240 Computer Systems (US 4 4 0 | ECTS 8 4 0)

This is a course on computer systems topics, that focuses on machine-level programming and architecture and their relevance for application programming. The course covers information representations, assembly language, C programming, debuggers, and processor architecture. *Pre-requisites: MAT 230 Discrete Mathematics; CSC 220 Data Structures* 

#### CSC 250 Computer Science Theory (US 3 3 0 | ECTS 6 3 0)

In this course students design and analyze algorithms to solve problems involving data structures. The course covers design, implementation, application, and analysis of algorithms on a variety of data structures. Algorithmic analysis includes computation of running times and asymptotic analysis. *Prerequisites: MAT 230 Discrete Mathematics and CSC 220 Data Structures* 

#### CSC 320 Applied 3D Geometry (US 3 3 0 | ECTS 6 3 0)

This course reviews mathematical foundation and techniques needed for the development of 3D graphics and game systems. This class will provide the foundation in linear algebra and 3D geometry required for implementing common tasks in 3D graphics and game systems. Topics include vectors, matrices, transforms, coordinate changes, projections, and intersection. *Prerequisite: CSC 220 Data Structures* 

#### CSC 330 Optimized C++ (US 4 4 0 | ECTS 8 4 0)

This game programming class will focus on developing software to efficiently use the fixed CPU power and resources in today's console and mobile devices. This course will use realworld game examples that demonstrate performance and optimization issues that software architects face in software development. These problems include performance enhancements through extended matrix instruction set, dynamic memory usages, performance related to increasing run-time systems to very large scale, C++ language enhancements and extensions, algorithms, streaming and profiling. *Prerequisites: CSC 210 Introduction to C++ and CSC 240 Computer Systems* 

#### CSC 340 Introduction to Game Design (US 3 3 0 | ECTS 6 3 0

This course provides students a practical foundation in game design with a focus on concept development, design decomposition, and prototyping. Using game design theory, analysis, physical prototyping, playtesting, and iteration students learn how to translate game ideas, themes, and metaphors into gameplay, game pitches, and design documents. Students will analyze and recognize play that exists in important games, stories, and other media. *No Prerequisite* 

#### CSC 350 Computer Graphics (US 4 4 0 | ECTS 8 4 0)

This course covers such topics as basic real-time computer graphics architecture, coordinate systems, three-dimensional representations and transformations, visible-surface algorithms, illumination using Gouraud and Phong shading, antialiasing, and texture mapping. *Prerequisites: CSC 210 Introduction to C++ and CSC 320 Applied 3D Geometry* 

#### CSC 360 Game Design Patterns (US 4 4 0 | ECTS 8 4 0)

In this course students will develop skills in game design and development through the creation of a 2D digital game designed from a set of client based restrictions. Emphasis will be placed on teamwork and development pipelines for the design and creation of assets and systems. Students will use a combination of prototyping, storyboarding, user stories, character breakdowns, system breakdowns, and flowcharts in the design portion of the game. We will be using Gamemaker Studio as the engine to develop and implement the game. The goals of all design done in this course will focus around designing for the needs of a client; solving problems identified by the client; and, providing transparency via reports and milestone deliverables. *Prerequisite: CSC 330 Optimized C++ and CSC 340 Introduction to Game Design* 

#### CSC 370 Game Networking (US 4 4 0 | ECTS 8 4 0)

Multiplayer games are made possible by the advances in networking technology, increases in processor speed, and data storage. Today, the majority of successful game titles are equipped with a multiplayer capability. This technical course discusses the fundamental aspects of multiplayer game development, such as design techniques, architectures, clientand server-side implementation, and data- bases. *Prerequisites: CSC 210 Introduction to C++ and CSC 360 Game Design Patterns* 

#### CSC 380 Level Design (US 3 3 0 | ECTS 6 3 0)

Level design is the art of creating believable environments, stages, and missions for video games. This course explores topics including architecture, flow, pacing, and puzzles. Using a 3D level editor, students will investigate technical design issues including the construction, texturing, lighting, and scripting of modern game levels. The roles, duties and challenges of the level designer will also be discussed. *Prerequisites: CSC 220 Data Structures and CSC 340 Introduction to Game Design* 

#### CSC 410 Game Modification (US 4 4 0 | ECTS 8 4 0)

In this course, students will develop skills in game design and development through the construction of a "mod" of an existing game. Emphasis will be placed on the game development life cycle from concept through release, on productivity in a team environment, and on effective project management practices. *Prerequisites: CSC 210 Intro- duction to C++ and CSC 340 Introduction to Game Design* 

#### CSC 420 3D Design and Modeling (US 4 4 0 | ECTS 8 4 0)

This class builds on topics covered in earlier courses with a focus on creating believable worlds for videogames. This course emphasizes designing large exterior environments, advanced mission scripting, and integrated storytelling. Using a 3D level editor and formal level design process, students create fun, polished, memorable virtual worlds. *Prerequisite: CSC 380 Level Design* 

#### CSC 430 Game Engine I Development (US 4 4 0 | ECTS 8 4 0)

Students will develop a basic 3D game engine. The focus will be on the implementation challenges and interdependencies between systems such as asset management, rendering, simple collisions, input/output, alarms, etc. Emphasis will be placed on developing the skills needed for robust, efficient, and portable implementation. Prerequisites: CSC 220 Data Structures and CSC 360 Game Design Patterns

#### CSC 440 Game Artificial Intelligence (US 3 3 0 | ECTS 6 3 0)

Artificial Intelligence (AI) is one of the essential components of a computer game. The course introduces basic concepts of AI. Emphasis will be placed on applications of AI in various genres of computer games. In the implementation component of this course students will be exposed to the existing AI game engines (middleware), which contain implemented AI algorithms that are ready to be applied into game code. These algorithms include decision trees, pathfinding, neural networks, and script-driven game object behaviors. *Prerequisites: CSC 220 Data Structures and CSC 360 Game Design Patterns* 

#### CSC 450 Game Engine II Development (US 4 3 0 | ECTS 8 3 0)

This class is a continuation of CSC 430. Students develop more complex systems for their 3D game engines: improved collision systems, terrain generation, and particle systems. Other advanced engine services are discussed and students are expected to research and implement one such system: sounds management, lighting system, tiered/broad phase collision system, advanced camera manipulation, etc. *Prerequisites: CSC 350 Computer Graphics and CSC 430 Game Engine I Development* 

#### CSC 460 Game Physics (US 4 3 0 | ECTS 8 3 0)

The course concentrates on Newton's Laws of Motion, kinematics, and kinetics. This theory will be applied to problems that a game programmer must understand; e.g., collisions between objects, projectiles and their trajectories, and real-time simulation of motion. Special objects such as cars, aircraft, and ships will be discussed. Students will apply and implement laws of physics. *Prerequisites: CSC 320 Applied 3D Geometry and CSC 360 Game Design Patterns* 

#### CSC 470 Global Software Development (US 3 3 0 | ECTS 6 3 0)

Students learn to manage the main issues related to glob- ally distributed software development, including intercultural issues within globally distributed teams, management of geographic, time related, cultural, economic and management issues, and to exercise interculturally based leadership and conflict resolutions with direct and indirect reporting. *Prerequisite: CSC 220 Data Structures* 

#### CSC 480 Game Development Project (US 4 4 0 | ECTS 8 4 0)

Students work in teams to design and develop a video game that demonstrates their mastery of game design and development. Additionally, students will reflect on ethical decision making and professional ethics in the game industry. *Prerequisites: CSC 410 Game Modification or CSC 420 3D Design and Modeling* 

#### **ECONOMICS**

#### ECO 101 Microeconomics (US 3 3 0 | ECTS 6 3 0)

This course introduces microeconomic concepts such as supply and demand analysis, theories of the firm and individual behavior, competition and monopoly, and welfare economics. The purpose of microeconomics is to give students a thorough understanding of the principles of eco- nomics that apply to the functions of individual decision makers, both consumers and producers, within the eco- nomic system. *No Prerequisite* 

#### ECO 103 Macroeconomics (US 3 3 0 | ECTS 6 3 0)

This course provides an overview of macroeconomics. Topics include the determination of output, national income, economic growth, unemployment, inflation, the business cycle, fiscal policy and monetary policy, international trade interest rates, and inflation. This module will allow students to examine the impact of individual and collective economic activity on the economy. Emphasis will be placed on basic macroeconomic principles which provide the foundation for the process of making economic decisions to enhance a society. *No Prerequisite* 

#### ECO 310 European Economic History (US 3 3 0 | ECTS 6 3 0)

The course covers major factors and institutions to have influenced the economic development of European nations, and the impact of these nations on U.S. and other nations' development is also discussed. *Prerequisites: ECO 101 Microeconomics and ECO 103 Macroeconomics* 

#### ELECTRONICS AND COMMUNICATIONS ENGINEERING

### ECE 201 Logic and Computing Devices and Lab (US 3 3 2 | ECTS 6 3 2)

Introduction to designing, building, simulating, and testing digital logic circuits. *Prerequisites: MAT 120 Calculus I and PHY 111 Physics with Calculus I* 

#### ECE 202 Electric Circuits I and Lab (US 4 3 2 | ECTS 8 3 2)

Study of DC resistive circuits, Kirchhoff's Laws, nodal and mesh analysis, power sources, Thevenin's and Norton's theorems, RC, RL, RCL circuit solutions with initial conditions using homogenous or non-homogenous ordinary differential equations with constant coefficients. Introduction to sinusoidal steady state solutions. *Prerequisites: MAT 120 Calculus I and PHY 111 Physics with Calculus I* 

#### ECE 262 Electric Circuits II and Lab (US 4 3 2 | ECTS 8 3 2)

Continuation of the study of electric circuits, including sinusoidal steady-state analysis, magnetically-coupled circuits, power calculations for sinusoidal steady-state circuits, balanced three-phase circuits, Laplace transforms, transient analysis of circuits using the Laplace transform, two-port parameters, and ideal op amps. Prerequisites: ECE 202 Electric Circuits and Lab, MAT 130 Calculus II, and PHY 112 Physics with Calculus II and Lab. *Prerequisite or Corequisite: MAT 250 Differential Equations* 

#### ECE 272 Computer Organization and Lab (US 4 3 2 | ECTS 8 3 2)

This course discusses the evolution, structure, components, and operation of a modern computer. *Prerequisites: ECE 201 Logic and Computing Devices and Lab and CSC 201 Introduction to C* 

#### ECE 317 Random Signal Analysis (US 3 3 2 | ECTS 6 3 2)

Introduction to engineering problems of a probabilistic nature. Systems transformations, statistical averages, simulation, and estimation of system parameters. *Prerequisite* or Corequisite: ECE 330 Signals, Systems, and Transforms

#### ECE 320 Electronics I and Lab (US 4 3 2 | ECTS 8 3 2)

Introduction to electronic materials and devices; principles of design; design of DC and AC circuits using diodes, bipolar junction transistors, field-effect transistors and use of transistors in digital circuits. *Prerequisites: ECE 262 Electric Circuits II and Lab, MAT 250 Differential Equations, and PHY 112 Physics with Calculus II and Lab* 

#### ECE 321 Electronics II and Lab (US 4 3 2 | ECTS 8 3 2)

Analysis and design of discrete amplifier circuits at low and high frequencies; operational amplifiers, frequency response, feedback, stability, and applications of analog integrated circuits. *Prerequisite: ECE 320 Electronics I and Lab* 

#### ECE 330 Signals, Systems, and Transforms and Lab (US 4 3 2 | ECTS 8 3 2)

Study of systems models, analysis of signals, Fourier series and transforms, sampling and Z transforms, discrete Fourier transforms. *Prerequisites: ECE 262 Electric Circuits II and Lab and MAT 250 Differential Equations* 

#### ECE 371 Microprocessor Interfacing and Lab (US 4 3 2 | ECTS 8 3 2)

This course discusses the structure, programming, and interfacing of microcontrollers.

Prerequisites: ECE 262 Electric Circuits II and Lab and ECE 272 Computer Organization and Lab. *Prerequisite or Corequisite: ECE 320 Electronics I and Lab* 

#### ECE 382 Electromagnetics (US 3 3 0 | ECTS 6 3 0)

Topics from electrostatics, magnetostatics, Maxwell's equations, electromagnetic wave propagation, transmission lines, waveguides, and antennas. *Prerequisites: MAT 250 Differential Equations, ECE 262 Electric Circuits II and Lab, and PHY 112 Physics with Calculus II and Lab* 

#### ECE 404 Semiconductor Devices (US 3 3 0 | ECTS 6 3 0)

Study of the principles of operation, external characteristics, modeling, and applications of some of the more important semiconductor devices. *Prerequisite: ECE 320 Electronics I and Lab* 

# ECE 409 Introductions to Linear Control Systems (US 3 3 0 | ECTS 6 3 0)

Introduction to classical linear control systems. Topics include continuous descriptions of systems, time and frequency domain response, stability, system specifications, and design. *Prerequisite: ECE 317 Random Signal Analysis* 

#### ECE 427 Communications Systems (US 3 3 0 | ECTS 6 3 0)

Study of communications system design and analysis. Topics include signals and spectra, baseband signaling and detection in noise, digital and analog modulation and demodulation techniques, and communications link bud- get analyses. *Prerequisites: ECE 330 Signals, Systems, and Transforms and ECE 317 Random Signal Analysis* 

#### ECE 430 Digital Communications (US 3 3 0 | ECTS 6 3 0)

Introduction to modern digital communication systems, emphasizing modulation and detection, taking into account the effects of noise. *Prerequisite: ECE 427 Communications Systems* 

#### ECE 438 Computer Communications (US 3 3 0 | ECTS 6 3 0)

Digital data transmission techniques, modems and communications channels, communications software and protocols, packet switching, wide-area network architecture, internetworking, end-to-end protocols, congestion control. *Prerequisites: Senior standing in Electronics and Communications Engineering* 

# ECE 467 Introduction to Digital Signal Processing (US 3 3 0 | ECTS 6 3 0)

Introduction to analysis, design, and applications of digital signal processing systems; design of digital filters; applications of the z-transform and the Discrete Fourier Transform to analyze discrete-time signals and systems. *Prerequisite: ECE 330 Signals, Systems and Transforms* 

#### ECE 495 Integrated System Design I (US 2 3 0 | ECTS 4 3 0)

Considers engineering design of systems in a continuous process of project definition, planning, execution, and evaluation. This process includes consideration of both technical and non-technical factors in design. Strong emphasis is placed on the development of effective technical communications skills, particularly oral communications competency. *Prerequisites: ECE 320 Electronics I and Lab, ECE 330 Signals, Systems, and Transforms and Lab, ECE 382 Electromagnetics, and ECE 409 Introduction to Linear Control Systems* 

#### ECE 496 Integrated System Design II (US 2 3 0 | ECTS 4 3 0)

Integrated Systems Design II is a team-based, projectoriented course where teams of 4-5 students work on a semester-long design project. *Prerequisites: ECE 321 Electronics II and Lab, ECE 371 Microprocessor Interfacing and Lab, ECE 382 Electromagnetics, ECE 409 Introduction to Linear Control Systems, and ECE 495 Integrated System Design I* 

#### <u>ENGLISH</u>

#### ENG 101 English Composition I (US 3 3 0 | ECTS 6 3 0)

This course provides students with opportunities to develop productive writing processes, to be able to identify and use claims and evidence effectively, and to work on understanding and employing conventions of particular genres. *No prerequisite* 

#### ENG 102 English Composition II (US 3 3 0 | ECTS 6 3 0)

This course focuses on those foundational aspects of rhetorical practice specific to argumentation, such as invention and arrangement strategies; approaches to addressing audiences that range from the committed to resistant; and writing competencies specific to institutional settings, such as summary, synthesis, and analysis. *Prerequisite: English 101* 

#### ENGLISH FOR ACADEMIC PURPOSES

#### EAP 096 English for Academic Purposes I (US 0 12 0 | ECTS 0 12 0)

This course reviews English communication skills, basic presentation and composition skills, academic communication and vocabulary, and IELTS and TESOL test review and

strategies. For students with test scores of IELTS 4.5 or 5, TOEFL PBT 400-449 or iBT 32-44.

#### EAP 098 English for Academic Purposes II (US 0 12 0 | ECTS 0 12 0)

This course reviews advanced English communication skills, presentation and composition skills, academic communication and vocabulary, and IELTS and TESOL test review and strategies. For students with test scores of IELTS 5.5 or TOEFL PBT 450-499 or iBT 45-59.

#### **ENGINEERING**

### ENR 102 A&B Introduction to Engineering Lecture Series (US 1 1 0 | ECTS 2 1 0)

This course provides first year students an understanding for the engineering disciplines and design process. It motivates the need for math, science and engineering science as prerequisites to specialized engineering design. Students will attend a series of 50-minute lectures. Lecture topics will include contemporary technical challenges in engineering, engineering ethics and engineering teamwork. Students will complete a Career Plan, which involves preparation of a resume and development of an academic plan. *No prerequisite* 

#### ENR 211 Dynamics (US 1 1 0 | ECTS 2 1 0)

This course provides the breadth of engineering sciences needed by civil engineers in the area of dynamics. The course will be readings with recitation sections for problem solving in a collaborative learning environment. Dynamics of particles and rigid bodies as applied to mechanical systems; introduction to mechanical vibrations. *Prerequisites CIE 214 and MAT 250* 

#### ENR 212 Engineering Economics (US 1 1 0 | ECTS 2 1 0)

Engineering Economics covers methods and modern techniques of engineering economic analysis for decision making, cost estimation, cash flow evaluation, taxes and depreciation, percent value, annual equivalent, internal rate of return, cost/benefit analysis, sensitivity analysis. The course is web based and has a complete set of materials including pre-requisite review material, course content, quiz problems, and exercise problems. *Prerequisite MAT 130* 

#### FINANCE

### FIN 201 Introduction to Finance (US 3 3 0 | ECTS 6 3 0)

As a first module in finance this course will introduce both the basic theory of finance and basic tools and models needed to study finance. Topics include the terminology of finance, time value of money, risk and return, and the valuation of assets including bonds, stocks and corporate projects. Also, studies will be the governance and financing of the firm and the distribution of profits to shareholders. *No Prerequisite* 

#### FIN 250 Corporate Finance (US 3 3 0 | ECTS 6 3 0)

This course is intended for students who have an interest in deepening their understanding of the corporate finance decision making process. Some review of the introductory finance module is done but the topics, such as risk and return and valuation of assets are greatly expanded. In addition, topics such as bankruptcy are introduced to illustrate the meeting of theory and practice. The objective is to expand on the basic finance principles from the introduction to finance course. This course will not only expand and deepen those principles but apply these principles to topics such as financing and valuation. In addition, this course will delve deeper into the theory behind the principles of finance for a greater student understanding of financial concepts. *Prerequisite: FIN 201 Introduction to Finance* 

#### FIN 301 Money and Markets (US 3 3 0 | ECTS 6 3 0)

This course covers a broad range of topics including both the theory of how prices and rates are set in the market as well as the institutional framework for the worlds' financial systems. Topics covered include interest rates, the concept of money, exchange rates, monetary policy, banking structures and function, central banks, determinants of the money supply, fiscal policy and monetary policy, and inter- national economies. Prerequisite: *FIN 201 Introduction to Finance* 

### FIN 305 Investments and Portfolio Management (US 3 3 0 | ECTS 6 3 0)

This is in an introduction to the theory and the practice of investing with an emphasis on a range of significant concepts. Both the theory of investing as well as the operational aspects of investing and portfolio management will be studied. The concepts covered are essential to anyone involved in the financial industry and the module is a key building block in the study of finance. *Prerequisite: FIN 201 Introduction to Finance* 

#### FIN 310 Taxation (US 3 3 0 | ECTS 6 3 0)

The course on taxation focuses on the U.S. tax system, and covers such topics as US federal income tax treatment of individual taxpayers, inclusions, exclusions, deductions, credits, rates of taxation, special tax computations, and the tax aspects of property transactions, federal income tax treatment of corporations and partnerships, and introduction to tax research. *Prerequisite: ACC 201 Intermediate Accounting I* 

FIN 350 Auditing (US 3 3 0 | ECTS 6 3 0)

Auditing provides a conceptual introduction to the nature and value of assurance services, the organization of the accounting

profession, Generally Accepted Auditing Standards (GAAS), professional ethics, legal responsibilities, financial audits by external auditors, planning and acceptance, internal control, evidence, and reporting, implementation and application of generally accepted auditing standards to transaction cycles and classes of transactions, and sampling techniques used in tests of controls and tests of details. *Prerequisite: ACC 301 Advanced Accounting* 

#### FIN 360 International Finance (US 3 3 0 | ECTS 6 3 0)

This course provides a conceptual foundation for understanding global financial issues, and a practical understanding of financing sources for international commerce as well as interpreting the recent wave of international financial crises affecting the global capital markets. *Prerequisite: FIN 201 Introduction to Finance* 

#### FIN 380 Financial Statement Analysis (US 3 3 0 | ECTS 6 3 0)

Students will gain competencies to conduct financial analysis of a corporation, knowledge about how financial metrics are mapped into stock prices, infer the future performance of firms from current data, compare and contrast different valuation models, identify drivers of value, and find intrinsic values. *Prerequisite: FIN 250 Corporate Finance* 

# FIN 410 Markets, Institutions, and Derivatives (US 3 3 0 | ECTS 6 3 0)

Students will have an understanding of the workings of financial markets, insight into the working of the global financial system, and recognize pricing variables for derivatives. Knowledge ascertained from this course will be the structure of the primary and secondary markets, primary intermediaries in the financial markets, types of finance derivatives and their functions, and the pricing aspects of the financial derivatives. *Prerequisite: FIN 250 Corporate Finance* 

### FIN 420 Research and Decision Making (US 3 3 0 | ECTS 6 3 0)

Effectively performing research on accounting and financial reporting issues, reaching appropriate conclusions and documenting one's conclusions are critical to being successful in the accounting and auditing professions. This course guides advanced accounting students through the research process. *Prerequisite: Senior Accounting Majors Only* 

### FIN 430 Finance: Theory and Applications (US 3 3 0 | ECTS 6 3 0)

This is a capstone course. It is intended to review some of the key concepts in finance and see how those apply to business situations. For this reason, the course is designed around case studies which will cover a variety of finance topics. It is required that in addition to the business core this course should only be taken after a minimum of three finance courses have been successfully completed. The topics may vary in a particular section but may include hedging, finance in emerging markets, mergers and acquisitions, bankruptcy, and IPOs. Most cases will require research into the nature of the problem as well as a pro- posed solution for the problem. In addition to the finance content of the cases, students will be expected to effectively communicate their solutions with written cases and oral presentations that reflect their individual research. *Prerequisite: FIN 250 Corporate Finance* 

#### FIN 510 Financial Accounting (US 3 3 0 | ECTS 6 3 0)

Financial accounting provides information used for decisions about the firm made by external stakeholders, such as banks and financial markets. This course provides an overview of financial accounting theory and applications. Topics include balance sheets, financial statement analysis, income statements, revenue recognition, cash flows, inventory, GAAP, and IFRS. *Prerequisite: Graduate Standing* 

# FIN 520 Economics for Managers (US 3 3 0 | ECTS 6 3 0)

This course provides an introduction to economic topics relevant to managers. Both microeconomic topics (such as supply and demand, elasticities, cost analysis and market structure) and macroeconomic topics (such as the measurement of economic activity, business cycles and money supply) are covered. *Prerequisite: Graduate Standing* 

#### FIN 530 Managerial Accounting (US 3 3 0 | ECTS 6 3 0)

Managerial accounting provides information for stakeholders inside the firm (upper management, other departments). This course provides accounting tools to support managerial decision making. *Prerequisite: FIN 510 Financial Accounting* 

### FIN 540 Money and Banking (US 3 3 0 | ECTS 6 3 0)

This module provides an overview of the roles of money, interest rates, and monetary policy in the global economy. The functions of financial markets and financial institutions are explained. Managers must understand these topics to function effectively. Prerequisite: Graduate Standing

#### **GRAPHIC DESIGN**

### GRD 101 Introduction to Visual Design (US 3 3 0 | ECTS 6 3 0)

This course is an introduction to two-dimensional design. Explores the development of perceptual ability through the analysis of two dimensional concepts of line, shape, value, color, space and organization. Topics covered include elements of design, the color wheel, and color properties. Class is project based with homework assigned each class period. Class will be taught in a studio. *No Prerequisite* 

#### GRD 111 Drawing and Visualization (US 3 3 0 | ECTS 6 3 0)

This is an introduction to composition, line and rendering in black and white drawing media. Students will study the basic techniques for descriptive and expressive use of drawing media. Drawing and visualization are core knowledge areas for the Graphic Design and Animation course. Class will be taught in a studio. No Prerequisite

### GRD 201 Figure Drawing and Anatomy (US 3 3 0 | ECTS 6 3 0)

This course focuses on the study of the human figure through an exploration of anatomy, combined with various drawing processes. This is an introduction to basic human anatomy needed to draw the figure, rendering the human figure in line and tone, and rendering believable three-dimensional volumes in two-dimensional media. Classis project based, with homework assigned each class period. *Pre- requisite: GRD 111 Drawing and Visualization* 

#### GRD 211 Digital Art Tools (US 3 3 0 | ECTS 6 3 0)

Digital Art Tools teaches students how to utilize the basic tools of the graphic design and animation field, which focuses on building basic skills in the most common digital imaging tools. It will cover pixel-based imaging (Photoshop); vector-based imaging (Illustrator); use of Photo- shop and Illustrator as ideational tools for exploring visual problems, possibilities and solutions; use of Photoshop and Illustrator to create digital images for output; and integration of Photoshop and Illustrator with traditional analog medial and tools. *No Prerequisite* 

#### GRD 301 Time, Image, Sound (US 3 3 0 | ECTS 6 3 0)

Time, Image, Sound is an introduction to the creation and editing of cinema/video, including images and sound. It provides an introduction to the fundamentals of time- based media, camera and lens technology, composition for digital screens, lighting, directing, sound recording, and non-linear editing. Utilizing digital technology, students will produce several video projects with an emphasis on visual storytelling, information communication, and personal expression. *No Prerequisite* 

#### GRD 311 Painting and Color (US 3 3 0 | ECTS 6 3 0)

Paint and Color is an introduction to the application of color using paint. Students will investigate practical and theoretical dimensions of color through mixing and applying paint, explorations into the use of color, basic organizational and technical concepts of painting, preparation and proper use of materials, basic concepts related to color's associations in emotional contexts, commercial uses, and cultural roles. Class is project based. *No Prerequisite* 

#### GRD 321 3D Design and Modeling (US 4 4 0 | ECTS 8 4 0)

This is an introduction to 3D design and 3D modeling, areas of knowledge that are necessary for computer animation. Students will be exposed to the use of computer modeling to explore the principles of 3-dimensional design; projects involving object; animal, and architectural modeling; aesthetic concepts of spatial proportion; scale, angle; position; silhouette; negative space; rhythm; balance; light/shadow; and texture. This class is project based with homework assigned each class period. *No Prerequisite* 

#### GRD 331 Animation I: Motion and Methods (US 4 4 0 | ECTS 8 4 0)

This is an introduction to the art and practice of animation. It is a studio-based class, which will emphasize learning through process, experimentation and creation. Students will explore the limitless possibilities of animated motion in the context of cinema, computer games and the Inter- net. All genres and styles are within the scope of this class, including Anime, cartoons, computer game art, experimental art and special effects. In addition to how, we will also explore and discuss why, and the role and potential of animation in our society, and its place in other cultures as well. *No Prerequisite* 

#### GRD 341 3D Character Animation (US 4 4 0 | ECTS 8 4 0)

3D Character Animation is an introduction to 3D animation that will emphasize traditional animation principles as they apply to 3D animation. Topics will include principles of aniion, storyboarding, transformation and deformation of 3D objects, rigging, camera and light animation, and using the computer as a tool to create animation for cinema and game applications, as well as an instrument of experimentation. *Prerequisite: GRD 321 3D Design and Modeling* 

### GRD 351 Animation II: Production (US 4 4 0 | ECTS 8 4 0)

Animation II is a more advanced study of animation, which will concentrate on facilitating the student's production of animated projects and will cover idea generation, experimentation, problem solving, planning and time management, application of the process of critical analysis to one's work, with the choice of animation technique, content

and form left to the individual. Students will learn the importance of bringing projects to completion. Students should be prepared to spend a large amount of time outside of class finishing the assignments and final project. *Prerequisite: GRD 331 Animation I: Motion and Methods* 

#### GRD 361 Graphic Design I: Typography

#### **Course Descriptions**

#### (US 4 4 0 | ECTS 8 4 0)

Graphic Design I is an in-depth introduction to typography introducing function, history, and art of typography in visual and verbal communication for print and digital screens; technical and formal aspects of letterforms; pro- duction of effective and evocative communication. Finished projects are pragmatic and expressionist, emphasizing the relationship between form and content. *Prerequisite: GRD 101 Introduction to Visual Design* 

### GRD 371 Storyboarding and Narrative (US 4 4 0 | ECTS 8 4 0)

This class will focus primarily on storyboarding and the aesthetic and practical uses of research, treatments, drawings, and found images as tools in the production of animations, films and game cinematics. Students will complete a series of assignments that will utilize different methods of finding inspiration to make a cohesive, narrative work. Various methods used in both commercial and independent productions will be presented as examples, and pre-production work from both live action and animated films will be viewed throughout the quarter. Students will create several storyboards for short films, write treatments, and research design options. *Prerequisite: GRD 331 Animation I: Motion and Methods* 

### GRD 411 Graphic Design II: Visual Problem Solving (US 4 4 0 | ECTS 8 4 0)

Graphic Design II is an advanced exploration of graphic design exploring formal structures, research methods, the role of analysis and conceptual thinking in visual problem solving, the world of graphic design in a social, business, and historical context. Students will combine text, images, and graphic elements within research-driven design projects to create meaningful solutions for print and digital screens. *Prerequisite: GRD 361 Graphic Design I: Typography* 

#### GRD 421 Motion Graphics (US 4 4 0 | ECTS 8 4 0)

Motion Graphics is an introductory class teaching effective communication using motion graphics; motion graphics in film titles; motion graphics in broadcast; motion graphics in commercial design; motion graphics in interactive media; motion graphics in game development, combination of music, visuals and typography; basic theories of kinetic composition and aesthetics; history of the field, including the work of pioneers such as Norman McLaren, Saul Bass and Len Lye. *Prerequisites: GRD 331 Animation I: Motion and Methods and GRD 351 Animation II: Production* 

### GRD 431 Visual Design for Games (US 4 4 0 | ECTS 8 4 0)

The stages of development in the visual direction of a video game will be identified and detailed, and students will participate in the creation of the visual art direction of a product, giving special attention to the design of 3D models and animation. Visual Design for Games topics include creating visual direction, concepting, art bibles, art production, and post-production strategies. Students will create proposals, create concepts, iteratively create artwork, and analyze competitive products. *Prerequisites: GRD 101 Introduction to Visual Design and GRD 201 Figure Drawing and Anatomy* 

#### GRD 441 Graphic Design III: Web Design (US 4 4 0 | ECTS 8 4 0)

Graphic Design III is a web design-focused class covering basic concepts and techniques in the design; development and implementation of websites; the use of current industry standard design applications such as Photoshop, Flash, and Illustrator; hand-coding in HTML and CSS for introductory web design; visual design fundamentals; composition; typography for the web; web color; digital imaging; Informational navigation; structure; front-end design; implementation. *Prerequisite: GRD 411 Graphic Design II: Visual Problem Solving* 

#### GRD 451 Interdisciplinary Game Project (US 4 1 0 | ECTS 8 1 0)

This course recreates the environment of an interdisciplinary game studio, one of the main employment opportunities for graduates of this course. Students work in teams to design and develop a video game that demonstrates their mastery of game design and development. Students will be guided through a full production cycle of game development from brainstorming a game concept to playtesting and polishing a complete, short game. The primary purpose of this module is for students to gain experience working intensely as a team or "game studio." Students will learn how to work successfully with people that have diverse skill sets, backgrounds, and interests. *Prerequisite: GRD 321 3D Design and Modeling and/or CSC 410 Game Modification* 

#### GRD 461 Thesis Project I (US 4 1 0 | ECTS 8 1 0)

This class gives the student an opportunity to apply the knowledge and skills obtained as a major in this course, and prepare for their chosen field. This production-based course is the first of a two-course sequence that provides the student with a Graphic Design and Animation cap- stone experience. Students will employ the knowledge they have learned and the skills they have acquired in all their GDA courses to date to produce a significant project in the medium of their choice. These courses connect the student's work through three components: class lectures and discussions, independent analysis and reflection, and the creation of a significant project. The module sequence is designed to be taken in two consecutive semesters.

Prerequisite: Senior Standing, GRD 331 Animation I: Motion and Methods, and GRD 361 Graphic Design I: Typography

GRD 462 Thesis Project II (US 4 1 0 | ECTS 8 1 0)

#### Course Descriptions

This class gives the student an opportunity to apply the knowledge and skills obtained as a major in this course, and prepare for their chosen field. This production-based course is the second of a two-course sequence that pro- vides the student with a Graphic Design and Animation capstone experience. Students will employ the knowledge they have learned and the skills they have acquired in all their GDA courses to date to produce a significant project in the medium of their choice. These courses connect the student's coursework through three components: class lectures and discussions, independent analysis and reflection, and the creation of a significant project. The course sequence is designed to be taken in two consecutive semesters. *Prerequisite: GRD 461 Thesis Project I* 

#### <u>HISTORY</u>

### HIS 101 History of the Mediterranean (US 3 3 0 | ECTS 6 3 0)

This course provides an introductory survey to the vast scope of Mediterranean experience through roughly 5000 years of human history. Students are encouraged to examine the rationales behind those events that are selected for focus and discussion. The islands of Malta and Gozo provide an excellent case study for exploring how some of these broad historical currents played out in a specific place at a specific time. Thus, at several points in the course, students explore how big topics such as the Roman Empire developed in the local environment and examine how such big topics impacted the daily life of ordinary people. *No prerequisite* 

#### HIS 120 History of Malta (US 3 3 0 | ECTS 6 3 0)

The Maltese archipelago is a group of islands (Malta, Gozo, and Comino) sixty miles south of Sicily. Except for Malta's deep and well-sheltered harbor, the islands are poor in natural resources, yet their history is incredibly rich. Lying at the very heart of the Mediterranean, a sea which has witnessed extensive intercultural exchange and cross-fertilization throughout its millennial existence, the islands have consistently attracted attention from all latitudes of the basin. Whether as a temporary stopover for seafarers or as a longterm base for invaders and colonizers. Malta has been at the center of these interactions which, inturn, molded the islands' history. The aim of the course is to outline the main episodes of this history, always within the wider framework of Mediterranean civilization, from pre- historic to modern times, and to ultimately illustrate the road which gradually transformed Malta from a base, fief, or colony, into an independent state. No Prerequisite

#### **INDUSTRIAL ENGINEERING**

IEE 175 Computer Programming for Engineering Applications (US 3 3 0 | ECTS 6 3 0)

This course teaches the Fundamentals of C, complexity and

efficiency analysis, numerical precision and representations, intro to data structures, structured program design, application to solving engineering problems. *Prerequisite or Co-requisite MAT 120* 

IEE 250 Introduction to Systems and Industrial Engineering (US 3 3 0 | ECTS 6 3 0)

This course gives students background and a foundation in the design and operation of systems. *Prerequisite MAT 130* 

#### IEE 265 Engineering Management I (US 3 3 0 | ECTS 6 3 0)

This course introduces students to the fundamentals of economic analysis and the time value of money for engineers. Construction of financial models in Microsoft Excel including Income, Cash Flow, and Balance Sheet. Estimation of required capital and project acceptance criteria. *Prerequisite MAT 120* 

#### IEE 270 Mathematical Foundation of Systems and Industrial Engineering (US 3 3 0 | ECTS 6 3 0)

This course will provide students with knowledge of the basics of data structures, transformations, computer methods, their implementation in MATLAB, and their applications in solving engineering problems. *Prerequisites IEE 175, MAT 130, and PHY 111* 

#### IEE 277 Object-Oriented Modeling and Design (US 3 3 0 | ECTS 6 3 0)

This course covers modeling and design of complex systems using all views of the Unified Modeling Language (UML). Most effort will be in the problem domain (defining the problem). Some effort will be in the solution domain (producing hardware or software). *Prerequisite IEE 175* 

#### IEE 295S Systems and Industrial Engineering Second-Year Colloquium (US 1 1 0 | ECTS 2 1 0)

This colloquium is designed to help students understand what Systems and Industrial Engineers (SIE) do as professionals. Students will interact with speakers and explore various roles of SIE to solve real engineering problems. The course helps students select course options within the SIE programs and helps focus on possible SIE application areas. *Prerequisite IEE* 250 or IEE 265

#### IEE 305 Introduction to Engineering Probability and Statistics (US 3 3 0 | ECTS 6 3 0)

This course covers axioms of probability, discrete and continuous distributions, sampling distributions, as well as engineering applications of statistical estimation, hypothesis testing, and confidence intervals. *Prerequisite MAT 130* 

#### IEE 321 Probabilistic Models in Operations Research (US 3 3 0 | ECTS 6 3 0)

The goal of this course is to apply probability theory to model and analyze systems with time varying randomness. Such stochastic systems are commonly encountered in engineering, computer science, biology, finance and public policy. This course is an introduction to the systematic study of such probabilistic systems. *Prerequisite IEE 305* 

#### IEE 330R Engineering Experimental Design (US 3 3 0 | ECTS 6 3 0)

This class teaches the design and analysis of observational and factorial experiments employing numerical and graphical methods. Topics include control charts, probability plots, multiple regression analysis, confidence and prediction intervals and significance tests. *Prerequisite IEE 305* 

#### IEE 340 Deterministic Operations Research (US 3 3 0 | ECTS 6 3 0)

This course covers linear programming models, solution techniques, sensitivity analysis and duality. *Prerequisite IEE 270* 

#### IEE 367 Engineering Management II (US 3 3 0 | ECTS 6 3 0)

This class teaches students strategic, tactical and operational planning; innovation and technological cycles; the elements of entrepreneurship, and human relations topics for technical managers. *Prerequisite IEE 265* 

#### IEE 370 Embedded Computer Systems (US 4 3 1 | ECTS 8 3 1)

This course covers Boolean algebra, combinational and sequential logic circuits, finite state machines, simple computer architecture, assembly language programming, and real-time computer control. The computer is used as an example of systems engineering design; it is analyzed as a system, not as a collection of components. *Prerequisite PHY 240* 

### IEE 377 Software for Engineers (US 3 3 0 | ECTS 6 3 0)

This course covers rapid prototyping of decision support systems using Visual Basic for Applications (VBA) and Excel. Use of VBA, Excel, and external packages to solve optimization problems, to perform simulations, and to

perform forecasting. Rapid design and implementation of decision support systems for financial, supply chain, and facility location problems. *Prerequisite IEE 175* 

### IEE 383 Integrated Manufacturing Systems (US 3 3 0 | ECTS 6 3 0)

This course provides an introduction to the integrated

manufacturing enterprise and automation. Topics include computer-aided design, process planning, computer numerical control machining, machine vision, application of robots and automation. *Prerequisite: Upper Division Standing* 

#### IEE 406 Quality Engineering (US 3 3 0 | ECTS 6 3 0)

This class introduces quality, improvement and control methods with applications in design, development, manufacturing, delivery and service. Topics include modern quality management philosophies, engineering/statistical methods (including process control, control charts, process capability studies, loss functions, experimentation for improvement) and TQM topics (customer driven quality, teaming, Malcolm Baldridge and ISO 9000). *Prerequisite IEE 305* 

### IEE 410A Human Factors and Ergonomics in Design (US 3 3 0 | ECTS 6 3 0)

This course considers human characteristics in the requirements for design of systems, organizations, facilities and products to enable human-centered design which considers human abilities, limitations and acceptance. *Prerequisite or Co-requisite IEE 305* 

#### IEE 431 Simulation Modeling and analysis (US 3 3 0 | ECTS 6 3 0)

This course develops the student's ability to model and analyze real systems using discrete event simulation. Through this course, the student understands the power and characteristics of discrete event simulation modeling. *Prerequisite IEE 305* 

#### IEE 457 Engineering Project Management (US 3 3 0 | ECTS 6 3 0)

This course covers the foundations, principles, methods and tools for effective design and management of projects in technology-based organizations. It focuses on the scope, time, cost, performance and quality concerns of engineering projects characterized by risk and uncertainty. Initiating, planning, executing, monitoring, controlling and closing processes are addressed. Project Management software is utilized. *Prerequisite: Upper Division Standing* 

#### IEE 462 Production Systems Analysis (US 3 3 0 | ECTS 6 3 0)

This class covers production systems, quantitative methods for forecasting, aggregate planning, inventory control,

materials requirement planning, production scheduling, manpower planning and facility design. *Prerequisites IEE 305* and IEE 340

IEE 464 Cost Estimation (US 3 3 0 | ECTS 6 3 0)

#### Course Descriptions

Course focuses on principles of cost estimation and measurement systems with specific emphasis on parametric models. Approaches from the fields of hardware, software and systems engineering are applied to a variety of contexts (risk assessment, judgment and decision making, performance measurement, process improvement, adoption of new tools in organizations, etc.). Material is divided into five major sections: cost estimation fundamentals, parametric model development and calibration, advanced engineering economic principles, measurement systems, and policy issues. *Prerequisite: Upper Division Standing* 

#### IEE 498A Cross disciplinary Design I (US 3 3 0 | ECTS 6 3 0)

Students work in cross-disciplinary teams to solve industrysponsored real-world design problems using the design process. Teaming, design process, design concept, design proposal. *Prerequisite: Senior Status and IEE 305; Prerequisite* or Co-requisite IEE 410A or 431

#### IEE 498B Cross Disciplinary Design II (US 3 3 0 | ECTS 6 3 0)

Students receive instruction on formal methods in the design process, project management, and communication skills. They are also guided in the implementation of their projects by professional mentors with many years of project management and design experience in various industries. *Prerequisite IEE* 498A

#### IEE 506 Quality Engineering (US 3 3 0 | ECTS 6 3 0)

This class introduces quality, improvement and control methods with applications in design, development, service. Topics include manufacturing, delivery and modern quality management philosophies, engineering/statistical methods (including process control, control charts, process capability studies, loss functions, experimentation for improvement) and TQM topics (customer driven quality, teaming, Malcolm Baldridge and ISO 9000). Prerequisite: IEE 305 / Introduction to Engineering Probability and Statistics or equivalent

#### IEE 514 Law for Engineers and Scientists (US 3 3 0 | ECTS 6 3 0)

Topics covered in this course include patents, trade secrets, trademarks, copyrights, product liability, contracts, employment relations and other legal matters important to engineers and scientists.

#### IEE 515 Technical Sales and Marketing (US 3 3 0 | ECTS 6 3 0)

Principles of the engineering sales process in technologyoriented enterprises; selling strategy, needs analysis, proposals, technical communications, electronic media, time management and ethics; practical application of concepts through study of real-world examples.

#### IEE 522 Engineering Decision Making under Uncertainty (US 3 3 0 | ECTS 6 3 0)

Application of principles of probability and statistics to the design and control of engineering systems in a random or uncertain environment. Emphasis is placed on Bayesian decision analysis. Graduate-level requirements include a semester research project. *Prerequisite: IEE 305 / Introduction to Engineering Probability and Statistics or equivalent* 

#### IEE 530 Engineering Statistics (US 3 3 0 | ECTS 6 3 0)

This class introduces statistical methodology of estimation, testing hypotheses, goodness-of-fit, nonparametric methods and decision theory as it relates to engineering practice. Significant emphasis on the underlying statistical modeling and assumptions. *Prerequisite: IEE 305 / Introduction to Engineering Probability and Statistics or equivalent* 

#### IEE 531 Simulation Modeling and Analysis (US 3 3 0 | ECTS 6 3 0)

This course is designed to develop student's ability to model and analyze real systems using discrete event simulation. Through this course, the student will understand the power and characteristics of discrete event simulation modeling. *Prerequisite: IEE 305 / Introduction to Engineering Probability and Statistics or equivalent* 

#### IEE 540 Survey of Optimization Methods (US 3 3 0 | ECTS 6 3 0)

This class introduces survey of methods including network flows, integer programming, nonlinear programming, and dynamic programming. Model development and solution algorithms are covered. *Prerequisite: IEE 305 / Introduction to Engineering Probability and Statistics or equivalent; IEE 340 Deterministic Operations Research (Linear Programming), or equivalent* 

#### IEE 554A The Systems Engineering Process (US 3 3 0 | ECTS 6 3 0)

Process and tools for systems engineering of large-scale, complex systems: requirements, performance measures, concept exploration, multi-criteria tradeoff studies, life cycle models, system modeling, etc.

#### IEE 557 Engineering Project Management (US 3 3 0 | ECTS 6 3 0)

Foundations, principles, methods and tools for effective design and management of projects in technology-based organizations This course focuses on the scope, time, cost, performance and quality concerns of engineering projects characterized by risk and uncertainty. Initiating, planning, executing, monitoring, controlling and closing processes are addressed. Project Management software is utilized. *Prerequisite: IEE 305 / Introduction to Engineering Probability* 

#### **Course Descriptions**

#### and Statistics or equivalent

#### IEE 562 Production Systems Analysis (US 3 3 0 | ECTS 6 3 0)

This class covers production systems, quantitative methods for forecasting, aggregate planning, inventory control, materials requirement planning, production scheduling, manpower planning and facility design. *Prerequisite: IEE 305 / Introduction to Engineering Probability and Statistics or equivalent; IEE 340 Deterministic Operations Research (Linear Programming), or equivalent, or consent of instructor* 

#### IEE 564 Cost Estimation (US 3 3 0 | ECTS 6 3 0)

Course focuses on principles of cost estimation and measurement systems with specific emphasis on parametric models. Approaches from the fields of hardware, software and systems engineering are applied to a variety of contexts (risk assessment, judgment and decision making, performance measurement, process improvement, adoption of new tools in organizations, etc.). Material is divided into five major sections: cost estimation fundamentals, parametric model development and calibration, advanced engineering economic principles, measurement systems, and policy issues.

#### IEE 565 Supply Chain Management (US 3 3 0 | ECTS 6 3 0)

Fundamentals of Supply Chain Management including inventory/logistics planning and management, warehouse operations, procurement, sourcing, contracts and collaboration. Prerequisite: IEE 305 / Introduction to Engineering Probability and Statistics or equivalent; IEE 340 Deterministic Operations Research (Linear Programming), or equivalent, or consent of instructor

#### IEE 567 Financial Modeling for Innovation (US 3 3 0 | ECTS 6 3 0)

This a graduate level course in the economics of technology development for students interested in commercializing research discovery. Topics include Pro Forma financial statements, the time value of money, valuation approaches, and entrepreneurship.

#### IEE 598A Master's Capstone I (US 3 3 0 | ECTS 6 3 0)

Students work in teams to solve problems that have practical significance and require application of graduate-level course material. Usually up to three students may work together on

the project and produce a joint report. An oral presentation of the project to the faculty advisor is required.

IEE 598B Master's Capstone II (US 3 3 0 | ECTS 6 3 0) Students work in teams to solve problems that have practical significance and require application of graduate-level course material. Usually up to three students may work together on the project and produce a joint report. An oral presentation of the project to the faculty advisor is required.

#### MANAGEMENT

#### MGT 101 Principles of Management (US 3 3 0 | ECTS 6 3 0)

This course is an introduction to the range of issues in management and covers such topics as management processes, values and attitudes, ethics and diversity, the global environment of management, strategic planning, organizational structures, motivation, leadership, teams, human resources, organizational control, organizational communications, and career management. *No Prerequisite* 

#### MGT 301 Operations Management (US 3 3 0 | ECTS 6 3 0)

Operations management focuses on the effective application of managerial techniques and concepts related to the delivery of services, manufacturing, and supply chain processes. Topics may include operations strategy, fore- casting, project management, quality management, supply chain management, facility location and layout, productivity, inventory management, and scheduling. Prerequisites: ACC 102 Principles of Accounting II and ECO 101 Microeconomics

#### MGT 310 Principles of Marketing (US 3 3 0 | ECTS 6 3 0)

This course introduces basic marketing terminology and the relationships between and among these terms relevant to the creation and implementation of basic marketing strategy. The course content also focuses upon the controllable and uncontrollable variables which have bearing on the success or failure of marketing programs. The course also provides students with opportunities to demonstrate their ability to connect concepts discussed in the text and those same concepts appearing in academic and practitioner publications and popular business periodicals. *No Prerequisite* 

#### MGT 320 International Business (US 3 3 0 | ECTS 6 3 0)

This course is designed to develop students' knowledge and the skills needed to face the challenges of globalization. It provides participants with the global perspective required to expand their intercultural communication competencies and conduct business internationally. The subjects scheduled are diversified in nature and scope. They cover many fields of knowledge, such as the multi-national company's environment, culture, strategy and organization and the role of managers in today's global business. The course topics and assignments are intended to enrich participants' professional and personal lives. No Prerequisite

#### MGT 330 Principles of Sustainability

#### (US 3 3 0 | ECTS 6 3 0)

This course discusses and analyzes the concept of sustainability within a business and management setting. It will analyze the complex relationship between business and the environment, and it will explore the nature of business in today's global context where addressing environmental and social issues is becoming increasingly important. Furthermore, it aims to discuss how the talents of business might be used to solve world's environmental and social problems. Rather than focusing on a "doom and gloom" approach, the course aims to emphasize the solutions towards a sustainable economy. *No Prerequisite* 

### MGT 340 Management Information Systems (US 3 3 0 | ECTS 6 3 0)

This is an introductory course in MIS. It emphasizes the use of information technology to support business operations and management, and includes the use of spreadsheets to analyze and represent data. Topics include strategic uses of IT, databases, data warehouse, decision support and artificial intelligence, e-commerce, systems development, IT infrastructure, network security, and social, ethical, and legal considerations. *No Prerequisite* 

#### MGT 350 Consumer Behavior (US 3 3 0 | ECTS 6 3 0)

Topics include an analysis of the environmental, social, and psychological factors that influence an individual's consumer decisions. Specific areas studies will be consumer motivation, attitudes, learning and decision processes, and lifestyles, reference groups, communication, and cultural influences. *Prerequisite: MGT 310 Principles of Marketing* 

#### MGT 360 Organizational Behavior (US 3 3 0 | ECTS 6 3 0)

This course focuses on the nature and consequences of human behavior in organizations. The prediction, explanation, and management of individual and group behavior in the organization depends on an understanding of the concepts of organizational behavior. Classroom experiences focus on both understanding and practicing these concepts. Topics cover both the individual level; e.g., perception, attitudes, motivation -- and the group level; e.g., leadership, group dynamics, communication, power and politics, and decision making. *Prerequisite: MGT 101 Principles of Management* 

### MGT 370 Taxes, Law and Regulation (US 3 3 0 | ECTS 6 3 0)

This course examines the organization of the corporation, with an emphasis on taxation and the corporation's legal

responsibilities. The course focuses on the principles of corporate tax laws, the essentials of securities regulations, the legal aspects of director and insider responsibilities, and the workings of copyright and patent laws.

#### MGT 410 Entrepreneurship (US 3 3 0 | ECTS 6 3 0)

This course will provide an overview of the opportunity recognition and evaluation process by examining how people, the industry, and the social environment interact to identify, create, and shape entrepreneurial opportunities. The focus of this course is on creativity and innovation within an entrepreneurial context. Students learn creative tools and applications to assist in designing new business ideas and ventures. *Prerequisite: MGT 101 Principles of Management* 

#### MGT 420 Global HR Management (US 3 3 0 | ECTS 6 3 0)

This course concerns concepts, theories, principles and techniques for effectively managing a workforce glob- ally. The focus is on effective strategies relating to human resource strategy, staffing, development, performance management, remuneration management, legal/regulatory compliance, and employee/labor relations in geo- graphically dispersed and culturally diverse organizations. The purpose of the course is to help students understand the issues related to effectively managing a workforce in a global organization and how human resource strategies and programs can enable the workforce to contribute to organizational success. *Prerequisite: MGT 101 Principles of Management* 

### MGT 450 Principles of Marketing Research (US 3 3 0 | ECTS 6 3 0)

This course focuses on how to match research design (exploration, surveys, observation and experiments) with an organization's marketing problems. One learns how to design questionnaires, collect, and analyze survey data, prepare and conduct focus groups, and design experiments. Some knowledge of statistics required. *Prerequisite: MGT 350 Principles of Marketing* 

#### MGT 510 Business Law (US 3 3 0 | ECTS 6 3 0)

Managers must be familiar with law as it affects the formation and operation of businesses. This module provides an overview of business law for business students. The module is designed to familiarize students with basic legal issues important to starting and operating a business and to recognize when they need professional legal assistance. Prerequisite: Graduate Standing

#### MGT 520 Strategic Management (US 3 4 0 | ECTS 6 4 0)

This course provides a framework for developing, implementing, and evaluating business strategy. As a capstone course for the MBA, all functional areas of business are integrated. *Prerequisite: Must have completed 24 credits* (48 ECTS credits) in the MBA

#### MGT 530 Financial Management (US 3 4 0 | ECTS 6 4 0)

This course presents concepts and techniques to analyze and implement investment decisions by firms. The course focuses on the effect of time and uncertainty on decision-making. In the process, the course develops a framework for corporate financial decision-making, thus providing a solid foundation in the principles and practice of financial management. Topics include basic discounting techniques, stock and bond valuation, capital budgeting under certainty and uncertainty, asset pricing models, and efficient markets. *Prerequisites: FIN 520 Economics for Managers; FIN 510 Financial Accounting* 

#### MGT 540 Operations Management (US 3 4 0 | ECTS 6 4 0)

This module provides an overview of operations management and supply chain management as sources of competitive advantage. *Prerequisite: Graduate Standing* 

### MGT 550 Organizational Theory (US 3 3 0 | ECTS 6 3 0)

Unless a business is a sole proprietorship, it requires organization of individuals to accomplish its mission. This course provides an overview of issues in organizational design, effectiveness, and change. *Prerequisite: Graduate Standing* 

#### MGT 560 Marketing Management (US 3 3 0 | ECTS 6 3 0)

This module provides an overview of the role of marketing in the organization and its relationship with other functional areas of business. *Prerequisite: Graduate Standing* 

#### MGT 610 Business Research Methods (US 4 4 0 | ECTS 8 4 0)

This course provides an overview of research methods for business. Students will finish this module with a proposal for their major research project. *Prerequisite: MAT 501 Business Statistics* 

#### MGT 620 Research Project (US 12 0 0 | ECTS 24 0 0)

It is fundamental for an effective manager to be directly familiar with the methodologies, issues, and techniques of contemporary research in the field. This course allows students to implement an independent research project from start to finish. *Prerequisite: Completion of all other MBA requirements* 

#### MATHEMATICS

# MAT 101 Introduction to Data Analysis, Probability, and Statistics

#### (US 3 3 0 | ECTS 6 3 0)

from the various areas of business. *Prerequisite: MAT 101 Introduction to Data Analysis, Probability, and Statistics*  This course is a first module in probability and statistics intended for non-science/non-engineering majors. No prior knowledge of calculus, probability or statistics is assumed. The goal of this module is to build statistical thinking, which is defined as the intuitive understanding of statistical concepts together with the ability to apply them to real-life situations. *No prerequisite* 

#### MAT 105 Introduction to MATLAB I (US 1 0 1 | ECTS 2 0 1)

This course introduces students to the MATLAB programming environment, arrays, creating and running script files, 2D plotting features, functions, programming elements, polynomials, curve fitting, and interpolation necessary for experimentation with math and engineering principles. *Prerequisite (MAT 220) The MATLAB programming environment, arrays, creating and running* 

#### MAT 110 Pre-Calculus (US X 3 0 | ECTS X 3 0)

This course introduces the mathematical concepts needed for the study of calculus, especially functions. It emphasizes mathematical theory, as well as the utility of mathematics in engineering and science. The goal of the course is a thorough understanding of the mathematics, plus the ability to apply precalculus topics in a variety of situations. *No prerequisite* 

#### MAT 120 Calculus I (US 4 3 0 | ECTS 8 3 0)

This course introduces the calculus of a single variable. It emphasizes mathematical theory, as well as the utility of calculus in engineering and science. The goal of the course is a thorough understanding of the mathematics, plus the ability to apply calculus in a variety of situations. *No prerequisite* 

#### MAT 130 Calculus II (US 4 3 0 | ECTS 8 3 0)

This course continues the theory and practice of the calculus of one variable to model phenomena in engineering and science. It covers integration, applications of definite integrals, techniques of integration, infinite sequences and series, and calculus with parametric equations and polar coordinates. *Prerequisite: MAT 120 Calculus I* 

#### MAT 201 Business Statistics (US 3 3 0 | ECTS 6 3 0)

This is a second course in statistics, that focuses on the necessary tools and techniques for the diverse areas of business study such as finance, marketing, and economics. The module covers hypothesis testing, linear regression, multi- variate analysis, and non-parametric methods. Emphasis is on the application of the statistical methods with examples

#### MAT 205 Introduction to MATLAB II

#### Course Descriptions (US 1 0 1 | ECTS 2 0 1)

Provides students with an understanding of two-dimensional arrays, manipulation of arrays, plots with special graphics, 3D plots, inline functions, solving a nonlinear equation with one variable, finding the maximum or minimum of a function utilizing MATLAB. *Prerequisite MAT 105* 

#### MAT 220 Multivariable Calculus (US 4 3 0 | ECTS 8 3 0)

This course explores limits, continuity, derivatives, and integrals in contexts where several variables are used. Topics include vector operations, vector functions, functions of several variables, partial derivatives, multiple integrals, and vector calculus. The goal of the course is a thorough understanding of the mathematics, plus the ability to apply calculus in a variety of situations in engineering and science. Prerequisite: MAT 130 Calculus II

#### MAT 230 Discrete Mathematics (US 3 3 0 | ECTS 6 3 0)

Topics include propositional and predicate logic, combinatorics, mathematical induction, mathematical induction to prove the correctness of algorithms, running time of algorithms and asymptotic notation, mathematical recursion and recursive algorithms, graph theory and algorithms on graphs and trees, network models, automata theory, and basic computational geometry. *Prerequisite: MAT 101 Introduction to Data analysis, Probability and Statistics* 

### MAT 250 Differential Equations (US 3 3 0 | ECTS 6 3 0)

This course provides an introduction to the study of ordinary differential equations and their application to real- world problems. Topics include first- and second-order differential equations, systems of differential equations, matrix methods, Laplace transforms, and numerical methods. Applications include population modeling, falling body problems with air resistance, and mass-spring systems. *Pre- requisite: MAT 130 Calculus II* 

#### MAT 260 Linear Algebra (US 3 3 0 | ECTS 6 3 0)

Students will develop conceptual and computational skills essential for deeper understanding of mathematics and computer science by working with linear spaces, transformations, and matrices used to represent them. In addition, the course will focus on logical reasoning and constructing proofs. *Prerequisite: MAT 130 Calculus II* 

#### MAT 501 Business Statistics (MBA) (US 3 3 0 | ECTS 6 3 0)

Managers must be able to use statistical techniques and understand statistical results to make evidence-based decisions. The purpose of this module is to provide a solid foundation in statistics for business. *Prerequisite: Graduate Standing* 

#### **MECHANICAL ENGINEERING**

### MEE 207 Elements of Electrical Engineering (US 3 3 0 | ECTS 6 3 0)

The material in this course provides an understanding of the technology in many contemporary electrical and computer systems and provides the necessary confidence when purchasing, designing or troubleshooting these or subsequent devices. *Prerequisite PHY 240* 

### MEE 230 Introduction to Thermodynamics (US 3 3 0 | ECTS 6 3 0)

Introductory course in classical macroscopic engineering thermodynamics. The course covers the basic laws of thermodynamics, including conservation of mass and energy in reversible and irreversible processes. The thermodynamics of substances will be studied through the equations of state. Examples of engineering applications will be used throughout the course. *Prerequisite PHY 111* 

#### MEE 250 Dynamics (US 3 3 0 | ECTS 6 3 0)

Dynamics of particles and rigid bodies as applied to mechanical systems; introduction to mechanical vibrations. Prerequisite CIE 214; *Prerequisite or Co-requisite MAT 250* 

# MEE 300 Instrumentation Laboratory (US 3 1 4 | ECTS 6 1 4)

Lectures and lab on basic principles of laboratory practice and instrumentation; statistical measurement theory including probability distributions, finite statistics, uncertainty analysis regression analysis dynamics of measurement systems; transducers and signal conditioning circuits. *Prerequisites or Co-requisites MEE 331, MEE 230, MEE 207, and Upper Division Standing* 

#### MEE 301 Engineering Analysis (US 3 3 0 | ECTS 6 3 0)

Vector analysis, complex variables, Fourier series, matrices, boundary value problems and applications to current engineering problems. *Prerequisite MAT 250* 

#### MEE 302 Numerical Methods (US 3 3 0 | ECTS 6 3 0)

Introduction to linear algebra; solution of engineering problems based upon an integrated approach combining numerical analysis and the use of computers. Prerequisites MAT 205, MAT 250, and MEE 250; *Prerequisite or Co-requisite MEE 301* 

#### MEE 313 Aerospace/Mechanical Engineering Design Laboratory (US 1 0 2 | ECTS 2 0 2)

Practical aspects of designing for manufacture and assembly. Emphasis on machining techniques. *Prerequisite Upper Division Standing* 

### MEE 324A Mechanical Behavior of Engineering Materials (US 3 3 0 | ECTS 6 3 0)

Introduction to engineering mechanics of solid materials; concepts of stress and strain at a point; states of plane stress and plane strain, stress-strain constitutive relations; stress equilibrium; material/structural responses to applied loading/deflection; analysis of statically determinate and indeterminate engineering components, e.g., trusses, rods, beams, frames, thin-walled pressure vessels; failure theories; introduction to structural stability. *Prerequisite CIE 214* 

#### MEE 324B Engineering Component Design (US 3 3 0 | ECTS 6 3 0)

Application of failure analysis methods to the design of specific machine components such as slender/thin-walled pressure vessels, beams, shafts, gear sets, bearings. *Prerequisite MEE 324A* 

# MEE 324L Mechanics of Materials Laboratory (US 1 0 2 | ECTS 2 0 2)

Characterization of engineering materials for stress-strain relations, deformation, strength and fracture. The course integrates hands-on experience with instruments, specimens, recording and interpretation of data, and formal engineering report writing. *Prerequisite or Co-requisite MEE 324A or MEE 331R* 

#### MEE 331 Introduction to Fluid Mechanics (US 3 3 0 | ECTS 6 3 0)

Fundamentals of fluid mechanics covering properties of fluids, fluid statics, dynamics of incompressible viscous and inviscid flows, control volume formulations of continuity, momentum and energy equations, dimensional analysis, viscous pipe flow, boundary layers and drag. *Prerequisites MEE 230, MEE 250, MAT 250* 

# MEE 331R Fundamentals of Materials for Engineers (US 3 3 0 | ECTS 6 3 0)

Scientific principles that underlie and relate the behavior and properties of materials to their engineering applications. *Prerequisites CHE 111 and PHY 111* 

### MEE 352 Dynamics of Machines (US 3 3 0 | ECTS 6 3 0)

Analysis of motions and forces in machines, design exercises. 1.5ES, 1.5ED. P *Prerequisite MEE 250* 

#### MEE 400 Senior Mechanical Engineering Laboratory (US 2 0 4 | ECTS 4 0 4)

This laboratory course involves experimental investigations to characterize a gas-cooled reactor, a wind tunnel tester, and an internal combustion engine. This is a writing emphasis course. The investigations are documented in technical memos and reported in oral presentations. *Prerequisites MEE 300 and Senior Standing* 

#### MEE 432 Heat Transfer (US 3 3 0 | ECTS 6 3 0)

Study of conduction, convection and radiation heat transfer, with applications to engineering problems. Prerequisites MEE 230, MEE 331

#### MEE 442 HVAC System Design (US 3 3 0 | ECTS 6 3 0)

Analysis and design of air conditioning systems for commercial and industrial buildings, including equipment and component selection. Energy-efficient concepts are emphasized. *Prerequisites MEE 230, MEE 331* 

### MEE 445 Renewable Energy Systems and Analysis (US 3 3 0 | ECTS 6 3 0)

Solar radiation intensity and location; basic concepts of solar thermal and photovoltaic processes; solar collectors; economic system design for electrical power and water heating, active and passive building heating and cooling, industrial processes. Wind energy fundamentals. Aerodynamic theory and economics of wind turbines. *Prerequisites MEE 230, MEE 331* 

# MEE 452 Planar Multibody Dynamics with Applications (US 3 3 0 | ECTS 6 3 0)

Kinematic and dynamic analysis of mechanical systems in planar motion, numerical methods and use of computer programs in analysis. *Prerequisites MEE 250, MEE 302, MEE 352* 

#### MEE 455 Control System Design (US 3 3 0 | ECTS 6 3 0)

Mathematical modeling of dynamical systems, hardware and software issues; computer stimulations; classical control method including transient response, steady-state errors, bode diagrams, root locus and design of closed loop control systems; introduction to state feedback design and digital control. *Prerequisites MEE 250, MEE 301* 

#### MEE 460 Mechanical Vibrations (US 3 3 0 | ECTS 6 3 0)

Free and forced vibrations of simple mechanical systems; effects of damping; introduction to multi-degree-of-freedom
systems. Prerequisites MEE 250, MAT 250

#### MEE 462 Composite Materials (US 3 3 0 | ECTS 6 3 0)

Classification and characteristics of composite materials; mechanical behavior of composite materials, micro and macro-mechanical behavior of laminae; mechanical behavior of laminates; mechanical behavior of short fiber composites. *Prerequisites MEE 302, MEE 324A, MEE 324B* 

## MEE 495 S ME Senior Colloquium (US 1 1 0 | ECTS 2 1 0)

Course provides transition between the academic experience and the world of work. Lectures on interviewing, resume writing, becoming a registered PE, financial planning, and engineering ethics are presented. Recent graduates are invited to share their experiences. *Prerequisite Senior Standing* 

## MEE 498A Cross Disciplinary Design I (US 3 3 0 | ECTS 6 3 0)

Students work in cross-disciplinary teams to solve industrysponsored real-world design problems using the design process. Teaming, design process, design concept, design proposal. *Prerequisite MEE 324B* 

## MEE 498B Cross Disciplinary Design II (US 3 3 0 | ECTS 6 3 0)

Students work in cross-disciplinary teams to solve industrysponsored real-world design problems using the design process. Teaming, design process, design concept, design proposal. ENGR 498A and ENGR 498B must be taken in consecutive semesters. This course is to prepare engineering seniors with a variety of backgrounds for professional practice by giving them the opportunity to work on real-life openended design problems with time and budgetary constraints. Students receive instruction on formal methods in the design process, project management, and communication skills. (Prerequisite MEE 498A)

## PHILOSOPHY

## PHI 101 Introduction to Philosophy (US 3 3 0 | ECTS 6 3 0)

This course provides students with both a broad back-ground in the history of philosophy and the tools necessary to continue the study of philosophy either independently or in upper-level courses. Students will be introduced to many of the major thinkers, movements, ideas, and methods of Western Philosophy from its inception in Ancient Greece and Asia Minor to the present. *No prerequisite* 

#### PHI 102 Introduction to Applied Ethics (US 3 3 0 | ECTS 6 3 0)

This course introduces students to the principles and practice

of ethical reasoning through the critical analysis of specific ethical problems. The problems include but are not limited to environmental ethics, global justice, bioethics, violence and war, and personal morality. Students will become familiar with the complexities of such problems, and engage in critical reading and writing to develop the skills of ethical reasoning. Required for all undergraduate degrees. *No prerequisite* 

## PHI 301 Business Ethics (US 3 3 0 | ECTS 6 3 0)

This course offers an examination of various ethical and moral issues arising in contemporary business and its activities which affect our society and the world. *Prerequisite: PHI 102 Applied Ethics* 

## **PHYSICS**

## PHY 101 Introduction to the Physical Universe and Lab (US 4 3 2 | ECTS 8 3 2)

Physics focuses on the fundamental questions about the nature of the universe. This introduction to the physical universe explores its basic principles. The first theme is an exploration of the scientific process--that is, the process by which we know what we know. The second theme is the significance of 20th and 21st century physics, and the way modern physics was radically transformed from the classical physics of Newton and Maxwell. The third theme is energy, and how it ties together phenomena as large as galaxy clusters to phenomena as small as an atom. The final theme is the role that science in general and physics specifically play in society. *No prerequisite* 

## PHY 111 Physics with Calculus I and Lab (US 4 3 2 | ECTS 8 3 2)

This course emphasizes quantitative and conceptual understanding of the fundamental principles of the physics background to understand the world in motion around you. Furthermore, students can use that background to study and understand momentum, energy, oscillations, fluid mechanics, and more. Topics include basic concepts of vectors, laws of motion, Newton's laws and their applications, rotational motion, conservation principles, oscillations, and fluids mechanics. *No prerequisite* 

## PHY 112 Physics with Calculus II and Lab (US 3 3 2 | ECTS 6 3 2)

The course has two main objectives: Provides the student with a clear and logical presentation of the basic concepts and principles of electromagnetism and to strengthen an understanding of the concepts and principles through a broad range of interesting applications to the real world. To meet these objectives, we have placed emphasis on sound physical arguments and problem-solving methodology. At the same time, this course attempts to motivate the students through practical examples that demonstrate the role of physics in other disciplines including engineering. The material in this course covers fundamental topics in electromagnetism: electrostatics, electric fields, electric potential and capacitance, direct current and magnetic fields. The students will learn the basic concepts of physics and its application. This course is specified for engineering and science students. *Prerequisite: PHY 111 Physics with Calculus* I

PHY 240 Introductory Electricity and Magnetism (US 4 3 1 | ECTS 8 3 1)

This course is a fundamental math/science course that provides students the foundation needed in terms of math and understanding of physical concepts to solve quantitative engineering problems. Topics include Coulomb's and Gauss' Law, electric fields and potentials, electrical and magnetic properties of matter, Ampere's and Faraday's laws, elementary DC and AC circuits, Maxwell's equations. *Prerequisite PHY 111* 

## **PSYCHOLOGY**

## PSY 101 Introduction to Psychology (US 3 3 0 | ECTS 6 3 0)

An educated, socially aware individual needs a working knowledge of the scientific method and a solid understanding of the impact of society and culture on individuals and their behavior. This Introduction to Psychology serves precisely this dual role in students' general education. First and foremost, it demonstrates methods of modern science as applied to understanding human thought and behavior. Second, it explores the impact of society and culture on individuals. *No prerequisite* 

## **RELIGION**

# REL 101 Religious Worlds in Comparative Perspective (US 3 3 0 | ECTS 6 3 0)

This course introduces students to the foundational ideas and institutions of the world's three major monotheisms: Judaism, Christianity, and Islam. It surveys their histories from their points of origin until the present time, and it explores the range of interactions between these traditions in a variety of forums and settings. The course concludes by analyzing the contrasting impacts and influences of the three monotheisms on the Mediterranean region and within Malta itself. *No prerequisite* 

## SOCIOLOGY

## SOC 101 Introduction to Sociology (US 3 3 0 | ECTS 6 3 0)

This course introduces students to a sociological way of thinking about the institutions and groups to which they belong. Students are introduced to both classic and contemporary social theories and to key concepts about their social worlds that enable them to see links between personal experience and public issues. Students are provided a solid grounding in the basic concerns of sociology and are encouraged to develop their own sociological imaginations through a variety of assessments. *No prerequisite* 

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- Vella, Manuel Assistant Professor of Philosophy; Ph.D. Philosophy, University of Malta; M.A. Philosophy, University of Malta; B.A. Philosophy, University of Malta

# Emeritus

 Ryder, John – Provost and Professor of Philosophy Emeritus; Ph.D. in Philosophy, Stony Brook University, State University of New York; M.A. in Philosophical Perspectives, Stony Brook University, State University of New York; B.A. in Philosophy, State University of New York College at Cortland

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