HABIB UNIVERSITY
2014

COURSE CATALOG

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2015 - 16 Academic Calendar

FALL SEMESTER 2015

First Year Orientation	August 24-28
First Day of Classes	August 31
Add/Drop Period	August 31 - September 9
Eid-ul-Adha	September 21 - 27
Last day to DROP classes	October 9
Last day to WITHDRAW	October 22
Ashura	October 23
Iqbal Day	November 9
Last Day of Classes	December 15
Reading Days	December 16 - 18
Final Examinations	December 19 - 28
Rabi-ul-Awwal	December 24
Quaid-e-Azam Day	December 25
Final Grades Due	December 28
Semester Break	December 29 - January 24

SPRING SEMESTER 2016

Faculty Return	January 13
First Day of Classes	January 25
Add/Drop Period	January 25 - February 3
Kashmir Day	February 5
Last day to DROP classes	February 26
Last day to WITHDRAW	March 11
Spring Break	March 21-25
Pakistan Day	March 23
Labor Day	May 6
Last Day of Classes	May 11
Reading Days	May 12 - 15
Final Examination	May 16 - 20
Final Grades Due	May 25
Semester Break	May 26

SUMMER SESSION 2016

First Day of Classes	June 6
Ramadan	June 7
Add/Drop Period	June 8
Eid-ul-Fitr	July 4 - 8
Last Day of Classes	July 29
Reading Days	July 30-31
Final Examinations	August 1 -5
Grades Due	August 7

WELCOME

Wasif Rizvi
President, Habib University

Dear student,

Welcome to Habib University!

You are about to embark upon a remarkable, game-changing journey. You are entering Habib University as a young adult, on the cusp of discovering yourself, and you will leave as a critically conscious and intellectually astute citizen. Habib University is committed to nurturing you to be a leader in everything you undertake. Equally importantly, we hope that Habib University enables you to be a robustly engaged citizen who will help serve their wider community using creative and innovative methods of learning and action.

At Habib University you will have access to highly distinguished faculty, cutting edge research laboratories, and a great richness of academic and recreational resources, all within one of the greatest state-of-the-art university campuses in this region. You can proudly proclaim to your family and friends that you are on a campus which is as good as any in the world. Moreover, our curriculum is innovative, flexible and interdisciplinary in approach and comparable to the curricula of the great knowledge centers of the world. At Habib University you will be an important part of a diverse student body working to establish tolerance and pluralism in your community.

As a Habib Lion you are a key custodian of our motto, Yohsin. A profound concept, Yohsin measures the worth of a person not only in terms of their excellence but also their creativity, passion, respect, and service they bring to society.

So welcome to your home for the coming four years. You won't find a more supportive environment anywhere else. You will encounter challenges you have not experience prior, but you will be surrounded by talented, caring professors and students ready to treat you like a member of their family and provide you with whatever you need to cultivate yourself. I am confident that you will make Habib University a great institution for you and others to succeed and thrive. Congratulations on making such a great choice.

Go Habib Lions!
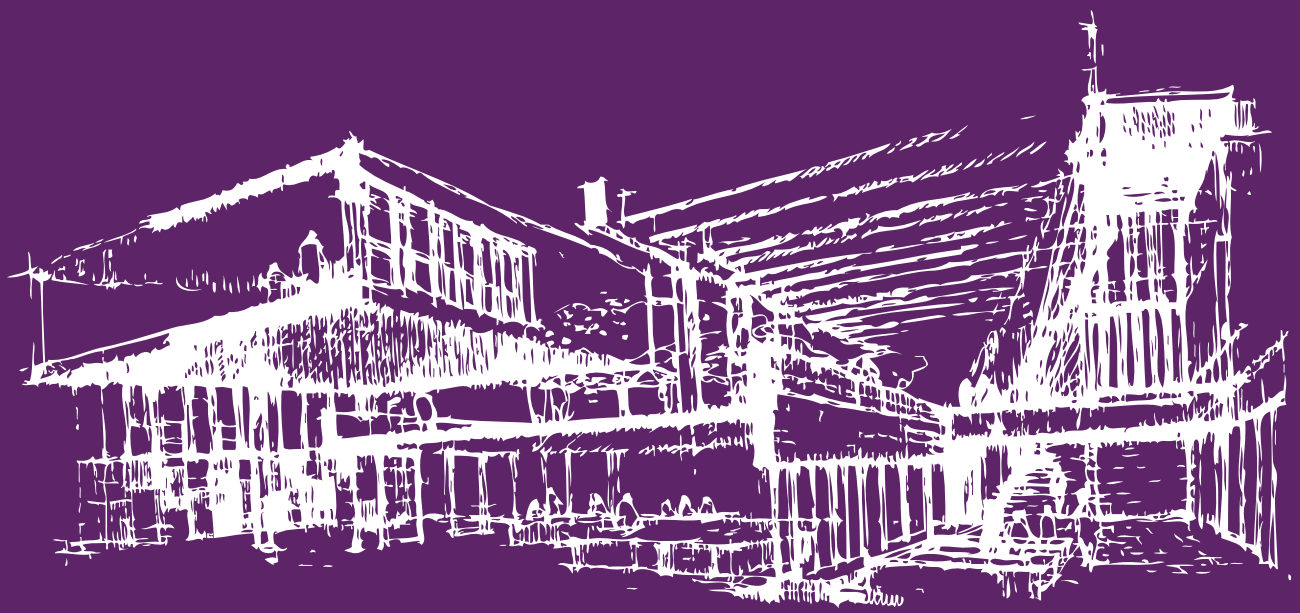
VISION, MISSION &
VALUES

Vision

Habib University is envisioned to be a preeminent institution of higher learning, dedicated to enriching individual lives and engaging society through teaching, research and service.

Mission

Our mission is to:

Educate promising students from all backgrounds and enable them to become competent, caring and critically-conscious members of society.

Engage outstanding academics with a passion for teaching, who will work with us to enrich the minds and lives of our students and contribute positively to the larger community.

Promote creativity, academic freedom and exchange of ideas in an intellectually stimulating environment of mutual respect and collaboration.

Philosphy

قِيمَةُ كُلِّ امْرِى ءَمَا يُحسِنُه

EVERY HUMAN BEING'S WORTH IS IN THEIR

YOHSIN

EXCELLENCE . PASSION . RESPECT . BEAUTY . SERVICE

Habib University will provide an indigenous liberal arts education that has, at its heart, the philosophy of yohsin: a striving for excellence, an appreciation of beauty, passion balanced by awareness of consequences, respect for others and a desire to serve the communities in which we are living in.

A multidimensional concept, yohsin encompasses a world-view where the worth of a person is measured not just in terms of their technical knowledge or skills but by their interaction with nature and society at large. This involves living in a responsible way and positively impacting the community and the world.

Patron

House of Habib

The House of Habib is a leading Pakistani business group with a rich tradition in finance, commerce, and philanthropy.

About

Habib University is a first-of-its-kind liberal arts & sciences university in Pakistan that matriculated its first class in Fall 2014.

Infrastructure & Awards

State-of-the-art Learning Facilities, Indoor and Outdoor Recreational Spaces

Open access to all through ramps and elevators located throughout the campus

Internationally acclaimed campus design from Society for College and University Planning (SCUP)

Built on 6.3 acres of land with a covered area of 476,000 square feet

Academics

Habib University's flagship three-year Liberal Core curriculum introduces all undergraduate students to the arts, humanities and social sciences.

Small class sizes enable significant faculty-student interaction and encourage students to collaborate with faculty on research projects.

Student-Faculty Ratio: 12:1

4 undergraduate degrees

- Computer Science
- Electrical Engineering
- Social Development & Policy
- Communication Studies & Design

ABOUT
HABIB UNIVERSITY

Habib University's **liberal arts & sciences** framework offers students broad-based knowledge across a variety of disciplines while delving deeply into a specific field. It provides a combination of technical expertise and vital soft skills, qualities that are highly sought in today's professional world.

Passionate and supportive, Habib University's **internationally qualified faculty** is invested in their students' academic, personal and professional success. As dedicated teachers, respected experts and innovative researchers, they will share their experience with students, involve them in their projects and prime them to embark fearlessly on their academic journey.

Habib University provides a **meta-curricular learning experience** which takes students beyond conventional academics. Student Life activities are a large part of what defines learning at Habib. Through these activities, students will encounter diverse perspectives and find solutions to real-world problems, making their learning experience a truly transformative one. With multipurpose recreational spaces, technology-enabled classrooms, state-of-the-art labs and much more, Habib University's **purpose-built campus** provides students plenty of opportunities to maximize their potential. Our wi-fi enabled campus is entirely accessible and encourages learning and interaction both within and beyond the classroom.

Habib University forms a **diverse community of learners** hailing from a variety of backgrounds, who bring with them a myriad of perspectives and opinions. Encountering such different people and ideas builds an awareness of global perspectives among students.

Habib University is a truly **global institution.** We have connected with renowned international universities and organizations from around the world to enhance our intellectual richness and bring invaluable institutional knowledge to our fold. Among others, our collaboration network includes Carnegie Mellon University, USA and Texas A&M University, Qatar.

HABIB UNIVERSITY
POLICIES

ACADEMIC RIGHTS AND RESPONSIBILITIES

Habib University is a community of learners founded on the free and respectful exchange of ideas. Neither students nor faculty should be disadvantaged on the basis of their political, religious, or other opinions. No member of the Habib University community will behave in any manner that infringes on the rights of any student or faculty to teach, learn, carry out research, or pursue creative or other activities connected to the university.

Students are expected to attend all classes, seminars, and labs and to follow any other reasonable course of study as determined by their instructors, academic advisors, or degree committee. Classroom assignments and course/degree requirements should be completed as prescribed in order to allow faculty sufficient time for adequate evaluation. Failure to fulfill these responsibilities may adversely affect course grades, cumulative grade point average (CGPA), and/or progress within the student's degree program.

Academic dishonesty shall be considered a serious violation of these responsibilities and will be subject to strict disciplinary action as prescribed by Habib University Code of Conduct and Honor Code. Academic dishonesty includes, but is not limited to, cheating, plagiarism, and collusion.

Faculty shall evaluate student performance based upon the expectations and actual content of the class, lab, or other course of study as defined by the faculty member at the outset of the course. Students who feel that they have received a capricious or arbitrary grade can appeal said grade as defined elsewhere in this document.

UNIVERSITY STATEMENT OF ANTI-DISCRIMINATION

Habib University is committed to providing a learning environment free from discrimination and to nurturing a diverse and vibrant university community while respecting the fundamental dignity and worth of all of its members. Supporting this commitment, the university does not tolerate discrimination in any form and provides mechanisms for redress for students who feel they are being discriminated against.

Habib University does not discriminate against any person in the management and administration of its academic and admission policies, scholarship and financial aid programs, and other university-administered programs nor does the university permit the harassment of any student or applicant on the basis of race, color, sex, gender, religion, national origin, creed, disability, marital status, sexual orientation, partnership status, pregnancy, age, military status, or any other legally protected status.

The Office of Student Affairs is responsible for coordinating the university's adherence to this policy and for complaint procedures in regard to discrimination or harassment.

ACADEMIC ADVISING

Academic Advising is a central element of the undergraduate experience at Habib University. It is intended to be a collaborative relationship between student and advisor through which students create educational plans consistent with their personal, academic, and career goals. Every student entering Habib will be assigned an academic advisor. Students should meet with their advisors at least once per semester to discuss their academic progress. They must speak to their academic advisor before enrolling in courses for the subsequent semester to obtain approval. Students who are struggling academically should first speak with their academic advisor for guidance. Students who have been placed on Academic Warning or Academic Probation must meet with their academic advisor as described later in this document.

A student's academic advisor is given in My Campus Application. Students wishing to change their advisor should speak with their assigned advisor and/or the Office of Academic Performance before submitting the Change of Advisor Form to the Office of the Registrar.

DECLARATION OF A MAJOR

All students entering Habib University must choose a School and major before beginning their course of study. At the end of their first year, students must confirm their major by filing a Declaration of Major form with the Registrar. Confirmation of major requires satisfactory performance in the area of study and the fulfillment of any requirements set forth by the respective programs.

DECLARATION OF A MINOR

The Minor provides students at Habib University the opportunity to pursue an area of secondary specialization. It shall consist of a smaller set of classes within a well-defined area as determined either by the awarding program or in consultation with the student's academic advisor and appropriate school Dean. Students interested in completing a Minor must declare their choice no later than the middle of their fourth semester by filing a Declaration of Minor form with the Registrar. If the declared minor does not fit any existing program minor a Minor Academic Plan approved by the appropriate school Dean(s) must be submitted with the Declaration of Minor Form.

TRANSFERS

All transfers, including transfer of credits, will be subject to review by the relevant dean(s), and will take place on a case-by-case basis. All incoming students, regardless of their transfer status, must satisfy the University Liberal Core requirements before graduation. Students may transfer out of Habib University at any time. Students are advised to begin the transfer process well in advance of the termination of the academic year.

GRADING SCALE

Letter Grade	Scale	Percentage
A+	4.00	97-100
A	4.00	93-96
A-	3.67	90-92
B+	3.33	80-89
B	3.00	75-79
B-	2.67	70-74
C+	2.33	67-69
C	2.00	63-66
C-	1.67	60-62
F	0.00	0-59
AU	Audit	
W	Withdrawal	
WP	Withdrawal Passing	
WF	Withdrawal Failing	
I	Incomplete	

INCOMPLETE POLICY

Students are expected to complete all courses during the academic semester in which the course was taken. If a student is unable to complete a course for reasons beyond his or her control, and the work completed to date is of passing quality, a grade of I (incomplete) may be given with instructor permission providing the grade of incomplete gives no undue advantage to that student. Incomplete grades should only be awarded with approval from the Dean of the School and with a completed Incomplete Agreement form, which must include all necessary details to satisfy the requirements of the course. Students must complete all work by the date specified in the Incomplete Agreement, which shall in any event be no later than the end of the following academic semester. The instructor must record the permanent grade by the last day of the examination period of that following semester or the "I" will default to "F." Incomplete grades are not calculated into a student's grade point average.

COURSE LETTERING AND NUMBERING

All courses are designated by a letter code denoting the program in which the course originates. The letter code is followed by a three number sequence denoting the level. Levels are designated as follows:

000 – Pre-university and/or noncredit courses offered by the university. This may include some transitional courses.

100 – Courses generally taken in the first year.

200 – Courses generally taken in the second year.

300 – Courses generally taken in the third year.

400 – Courses generally taken in the final year of study.

In general, the course level dictates the point at which a student should take a particular course within the sequence of requirements. However, students are encouraged to check all of the course prerequisites to ensure their eligibility to enroll.

REPEAT POLICY

Courses at the 100- and 200-level may be attempted no more than three times. The highest earned attempt is counted towards their GPA.

Courses within the student's major and those characterized as 300- and 400-level courses may be attempted a maximum of two times. The highest earned attempt is counted in their GPA.

An additional fee may be applicable for repeating a course if in repeating the course a student exceeds the maximum allowable course load.

AUDITING A COURSE

Auditing means taking a class without the benefit of grade or credit. One audits a course for the purposes of self-enrichment and academic exploration.

An audited course will appear on the transcript with an "AU" (audit) grade. An audited course does not earn credit, is not included in the calculation of GPA, and does not count toward the minimum course load required for continuous enrollment. Students registering a course for credit have priority over auditors, and auditing a course will be allowed only if space is available. Even during the add/drop period, an auditor may be asked to drop the course if another student wants to add the course for credit.

Audit courses do not fulfill degree requirements, but the credit value of audited courses is included in the semester load for determining fees and the maximum number of credits carried each semester. An audited course cannot be used to meet the pre- or co-requisite condition of another course. The extent to which an auditor may or may not be required to participate in the audited course is determined by the instructor prior to enrollment. For example, it is up to the instructor – and only the instructor – to decide whether an auditor will be permitted to take exams or if the auditor's work is to be submitted and/or evaluated. Students choosing to audit a laboratory course will be required to pay an additional lab fee.

The process for registering to audit a course is the same as registering a course for credit, with the following additional requirements:

• Students wishing to audit a course must obtain approvals from the course instructor and their academic advisor and submit them to the Registrar using the Add/Drop Form.
• For courses with a laboratory component, approval from the lab instructor must also be obtained.
• The School that offers the course may have additional requirements for auditors. Contact the relevant Dean's office for information about these requirements.

Changing a course status from audit to for-credit, or from for-credit to audit, or dropping an audit course must be done during the add/drop period. A student wishing to change a registered course from for-credit to audit status must meet the additional requirements of registering to audit a course.

An additional fee may be applicable for auditing a course if in auditing a student exceeds the maximum allowable course load. Students on financial aid should bear in mind that any fee for auditing a course will not be covered in their financial aid package. It is the student's responsibility to resolve all financial matters related to auditing a course by contacting the agency administering the scholarship or Financial Aid office.

ACADEMIC STANDING, PROBATION AND DISMISSAL POLICIES

Good Academic Standing: Students must maintain a cumulative grade point average (CGPA) of 2.00 throughout their academic tenure. Individual programs may set higher requirements. See program guides for details.

Academic Alert: If at any point a student's CGPA or the semester GPA (SGPA) falls below 2.00, then the student shall be put on Academic Alert. Additionally, if a student's grades appear as if the SGPA may drop below 2.00 at any point during a semester, such as midterms, then the student shall be placed on Academic Alert. Students on Academic Alert must meet with their academic advisor to design an Academic Success Plan. If the student achieves a CGPA and/or SGPA of 2.00 by the end of the semester, the student shall be restored to Good Academic Standing.

Academic Probation: Students unable to improve their SGPA and/or CGPA sufficiently by the end of the Academic Alert period shall be placed on Academic Probation for the following semester. Students on Academic Probation must meet with their advisor – and a representative of the Office of Academic Performance, as needed – to revise the Academic Success Plan before being permitted to register for classes. During the probation period, students should expect close academic supervision and must meet with their advisor bi-weekly, or as defined in the Academic Success Plan. Students on Academic Probation must achieve a CGPA of 2.33 or a SGPA of 3.00 to return to Good Academic Standing.

Academic Suspension: Students who fail to bring up their CGPA during the Academic Probation period, as outlined above, will have their privilege to enroll revoked for one full academic semester (not including the summer semester). Any student who chooses to return following an academic suspension must file a new Academic Success Plan and must achieve a GPA of at least 2.33 during the first semester upon return.

Academic Dismissal: Students who, after the above remedies, have not been successful in raising their CGPA above the university minimum will be academically dismissed from the university.

All Suspensions and Dismissals become a permanent part of a student's academic record and as such are noted on the student's transcript.

REINSTATEMENT FOLLOWING SUSPENSION

Students who have been suspended from Habib University for academic or disciplinary reasons can be reinstated if and when the conditions for reinstatement as defined in the terms of suspension have been met. Students must file a formal request following the procedure outlined below:

Disciplinary Suspension:
• Complete Application for Reinstatement;
• Submit an essay in which the student reflects upon the behavior that resulted in his or her suspension. This essay should demonstrate what the student has learned through his/her experience, how he/she has worked to correct the behavior, and what contributions he/she is prepared to make to the betterment of the Habib University community as a whole;
• Meet with the Chief Student Affairs Officer or his/her designee prior to reinstatement;
• Fulfill any other requirement as determined by the chief Student Affairs officer, or his/her designee.

Academic Suspension:
• Meet with his/her academic advisor and collaborate in devising an Academic Success Plan for the first returning semester at minimum;
• Meet with his/her academic or other agreed upon advisor bi-weekly, or as determined by the academic plan, during the first return semester;
• Maintain a current GPA of at least 2.33 for the duration of the academic plan;
• Fulfill any other requirement as defined in the academic plan.

GRADE POINT AVERAGE (GPA)

At the conclusion of each semester during the duration of a student's tenure at the university, grade point average will be reported in two manners:

• Current or Semester GPA – GPA for the current semester only
• Cumulative (CGPA) – A cumulative GPA for the duration of the students' enrollment.

In addition GPAs might be calculated for a school, a program, concentration, or a major. However, these specialized GPAs will not appear on a transcript.

CALCULATING YOUR GPA

The mathematical formula for calculating a student GPA is dividing the Total Quality Points by the Total Attempted Credits. Quality points are derived by multiplying credits for the individual course by the scale for the grade earned in the course, as listed in the official grading scale of the university. The formula is the same whether calculating current or cumulative GPA. Students with any questions about their GPA should speak to their academic advisor.

ATTENDANCE POLICY

It is important for overall success that students are present and engaged in each and every one of their class meetings and assignments regardless of course level. However, an attendance policy has been enacted to support the success of all first and second year students. With very few exceptions, there will be no distinction between excused and unexcused absences. Attendance will be taken and absences noted in all classes. All first and second year students must maintain at least 85% attendance for each class in which they are registered. Non-compliance with minimum attendance requirements will result in automatic failure of the course and may require the student to repeat the course when next offered. Additional fees may be required at the discretion of the Chief Financial Officer.

This policy is at a minimum. Departments, schools, and individual faculty members may alter this policy to include stronger attendance requirements and/or implement them for all levels of students.

Exceptions to this policy will only be made on appeal to the University Appeals Committee (UAC) and will only be heard on the grounds to be outlined by the committee.

WITHDRAWALS

Occasionally, it may be necessary for students to withdraw from one or more classes. This should never be seen as a way of avoiding poor grades. It should be used only when, in consultation with your advisor, there is no other alternative. Students are responsible for ensuring all forms are filled out and submitted. Withdrawing students who find that their withdrawal has not been processed must notify the Registrar.

SELF WITHDRAWAL

Students will be allowed to withdraw from an individual course up until the last class meeting of the semester. Students may withdraw from the university in its entirety up until the last business day before final exams begin.

ADMINISTRATIVE WITHDRAWAL

On rare occasions, Habib University reserves the right to administratively withdraw a student from classes, either voluntarily or non-voluntarily.

Voluntarily, this option is available to students in severe emergencies such as a personal illness or an emergency in their immediate family. A student may choose to use this service only once during the duration of their tenure at the university. The student should notify the Office of Student Affairs in writing within 30 calendar days of the event leading up to the request and be prepared to submit documentation accordingly.

The university may at any time decide to administratively withdraw a student if officials find such action is needed to maintain a campus environment that is conducive to its educational purpose, to maintain order, and/or to protect the rights and safety of all of its community members. To this end, officials may order the involuntary withdrawal of a student from the university and/or from its residence facilities in accordance with institutional policy, as described herein.

SCOPE OF THE POLICY

For the purpose of this and/or any other disciplinary policy, a student shall be defined as any person accepted in or enrolled in any educational course, either full or part-time, credit or non-credit, or any person whose educational record reflects a continued relationship with the university. This policy will cover behaviors as described herein and that occur on university premises or at university or organizationally sponsored activities, but it also may address off-campus behavior if the university determines that the behavior has otherwise damaged the university, its property, or that of another community member irreparably; likewise, if the continued presence of the student is seen to impair, obstruct, interfere with or adversely affect the mission, process, or functions of the institution; or if they engage or threaten to engage in behavior that poses a danger or physical harm to self or others at any time.

PROCEDURES UNDER THIS POLICY

This policy should not be seen as a substitute for appropriate disciplinary action as outlined in the Code of Conduct, and procedures herein may run concurrent with those processes. This procedure may be implemented at any time, in consultation with the competent authority, if the Director of Student Affairs deems it necessary to do so.

Upon receiving a referral or report of an issue involving a student that could fit under this policy, the Assistant Director of Student Affairs or their designee will conduct a review of the information

provided within and proceed accordingly. If warranted, an immediate meeting with the student may be requested. Upon review, the appointed official may take one or more of the following actions in accordance with their findings:

• Determine that the guidelines have not been met for involuntary withdrawal and terminate the process entirely;
• Determine that the guidelines have not been met and refer the case to the student conduct process;
• Require that the student schedule an evaluation by a qualified, licensed, mental health professional outside of the university at the student's cost;
• Invoke an interim suspension pending further investigation and/or the outcome of a student conduct case;
• Impose additional requirements on the student that must be met in order to continue enrollment;
• Allow a student who meets the conditions herein to voluntarily withdraw from the university and waive the right to further procedures under this policy and any privilege to enroll in the university again;
• Proceed with an immediate administrative withdrawal.

STUDENT'S FAILURE TO COMPLY

A student may be immediately, involuntarily withdrawn and/or disciplined under the policy and forfeits any right to appeal for any of the following conditions:
• Failure to attend any required meeting;
• Failure to schedule and/or appear for any directives as associated with this process;
• Failure to adhere to any conditions placed on the continued privilege to enroll in the institution.

INTERIM WITHDRAWAL

Until a particular case of alleged misconduct has reached a final decision, the student shall retain all privileges to attend classes, use campus facilities and otherwise be present on campus. As an exception to this, in cases when in the view of the competent authority a threat to the teaching/learning environment at the university, the safety of community members, or to ensure protection of university property, the university may decide to invoke an interim withdrawal of these privileges. When in the opinion of the university an interim withdrawal/suspension is to be imposed, notification to the student may come in either verbal or written form. Within three (3)

business days of an interim action, a student should be notified in writing of any formal allegations. The student will be given the opportunity to resolve the issue, either formally or informally, within ten (10) business days according to the policies and procedures contained herein or in any other university publication.

APPEALS

A student may appeal an involuntary withdrawal using the same procedures as outlined in the student conduct process and the grievance policy.

FAMILY EMERGENCY AND MEDICAL WITHDRAWAL

On rare occasion, a student may have an emergency in the family or a medical reason that prevents them from completing a term. The student or student's family should notify the Office of Student Affairs as soon as possible to request a Family Emergency or a Medical Withdrawal. It may be asked that proper documentation be submitted along with a Medical Leave of Absence Application.

Likewise, and in very special circumstances, the university may grant a retroactive Family Emergency or Medical Withdrawal in cases where the onset of the issue at hand was sudden and/or the student or family were unable to notify the university accordingly. In such cases, a written request clearly stating the reasons and documentation accordingly should be submitted as soon as possible to the Office of Student Affairs and/or the Registrar.

Appropriate documentation for a withdrawal in this category consists of a letter from your attending medical provider that specifies the following:
• Date of onset of illness or other issue;
• Dates under professional care;
• General nature of the medical condition or other issue and why/how it has prevented the student from completing coursework;
• Date the student was last able to attend school;
• Date of anticipated return to school.

GRADING AFTER WITHDRAWAL

All withdrawals completed after the add/drop period, usually the second week of classes, will be noted on the transcript. After the add/drop period, withdrawal forms will be with the Registrar and must be turned in after being signed by the student's academic advisor and individual faculty member(s). Classes dropped while passing will be noted as "WP," while classes dropped while failing will be noted as "WF." WP and WF grades are not calculated in the overall GPA.

A student withdrawing overall from the university will be allowed to do so up until the last business day prior to the last week of classes of any given semester. When withdrawing from the university for any reason, including medical and emergency withdrawals, all classes will be noted with a "W."

REFUNDS OF TUITION AND FEES PAID AFTER WITHDRAWAL

Regardless of reason, unless otherwise approved by the Chief Financial Officer, students withdrawing during the initial week of classes will be entitled to a full credit to their account minus applicable fees. Students who drop during the second week of classes but before the 10th class day will be entitled to a 75 percent credit. Students dropping after the 10th class day but before the end of the first full month of classes will be entitled to a 50 percent credit. No refund will be given after the first month of classes.

LEAVE OF ABSENCE

A leave of absence will be available under special circumstances. A leave of absence is necessary if a student will not taking classes for more than one regular semester. A leave of absence is good for one academic year and may be renewed only one time. Failure to file for a leave absence will result in loss of active student status, and readmission will be required. To file for a leave of absence, an Interim Withdrawal/Leave of Absence Request Form may be obtained from the Registrar's Office and must be signed by the academic advisor and the dean of the school in which the student is majoring. In the event that the student is undeclared, the Assistant Director of Academic Performance will sign in place of the dean.

Students who do not file a Leave of Absence form and have an absence of more than one semester will be moved from the status of a current student and must go through a reapplication process, including paying any applicable fees.

UNIVERSITY RECORDS POLICY

INTRODUCTION

Habib University maintains student educational records and ensures students' right to access and privacy of information maintained in these records. The following guidelines provide procedures for maintenance of and access to student educational records held by the university.

DEFINITIONS

For the purpose of these guidelines, the terms used herein are defined as follows.

Student – any person who has been admitted to the university.

Education record – any record, document or material maintained by the university (either directly or through a third party) that contains information directly related to the student which is recorded on any medium including, but not limited to, handwriting, print, audio, video, tapes or electronic storage.

However, the definition of education record does not include:

• Records that are maintained by school officials in their personal capacity and are not available to others;
• Records established and maintained by campus security;
• Employment records of the students employed by the university;
• Records maintained by the Health and Wellness Center when the records are maintained solely for the purpose of treatment of the student;
• Records that are maintained after the person is no longer a student, such as Alumni records;

Parent – the natural parent, the guardian, or an agent nominated by the parent/guardian to act as such, of the student.

University official – an individual employed by the university in an administrative, supervisory, academic, research or support staff position; a member of the Board of Trustees; an individual performing special tasks for the university, such as an attorney, or an auditor; a contractor, consultant, volunteer or other outside party providing institutional services; and an individual serving on official university committee, such as disciplinary committee, or assisting the university in the performance of official tasks.

Personally Identifiable Information – any information linked or linkable to a student that, alone or in combination, would allow an individual of the campus community, who does not personally know the student, to identify the student with reasonable certainty.

Legitimate Educational Interest – an individual has a legitimate educational interest in education records if the information or record is relevant and necessary to the accomplishment of some employment or other institutional task, service, or function.

Disclosure – to permit access to or to release, transfer or communicate student's education record, or personally identifiable information contained in those records.

PROCEDURE TO INSPECT AND REVIEW

Currently or formerly enrolled students may inspect their education records by making a written request to the Office of the Registrar. The request must precisely identify, as much as possible, the record or records that are sought. On receipt of application, arrangements will be made for inspection within reasonable amount of time (within a maximum of 10 business days). In case a particular record contains information about more than one student, access will be restricted to information relating to the requesting student.

REFUSAL/DENIAL OF REQUEST FOR INSPECTION AND REVIEW

A student's request for inspection and review of the following records may be refused:

• The financial statement of the student's parents;
• Confidential letters and letters of recommendations for which the student waived the right to access in writing;
• Records excluded from the definition of "education records" in this policy.

A student's request for access to records may also be denied due to one or more of the following reasons:
• The student has not cleared all financial obligations to the university;
• There is a pending disciplinary case against the student;
• The authenticity of the academic records or transcripts is in question.

DISCLOSURE TO PARENTS

The university reserves the right to release educational records to the parents of students. The university does not require a student's consent to disclose information related to the student's violation of local or federal laws, or the policies of the university, or if there is any disciplinary action against said student.

DISCLOSURE TO THIRD PARTY

In general the university does not disclose information to any third party without written consent from the student or unless covered in this policy. However, the university does not require written consent of the student to disclose personally identifiable information from a student's education record under the following conditions:

University Officials – where the university official has a legitimate educational interest in the student's record.

Official of another School – the information may be disclosed to another school where the students seeks or intends to enroll or is already enrolled.

Under Judicial Order – personally identifiable information may be release under the judicial order or lawfully issued subpoena.

In connection with the Financial Aid Program – as necessary to determine eligibility for, amount or conditions of the aid, or to enforce the terms and conditions of the aid.

Federal and Provincial authorities – if required by law.

Accrediting and Professional Associations – personally identifiable information may be disclosed to designated officials or representatives of the accrediting and other professional organizations with which the university is affiliated to the extent necessary to fulfill the obligation of that accreditation or affiliation.

Delinquency of payment to the university – personally identifiable information may be released to agencies responsible for collection of financial obligations to the university in case of delinquency of payment by the student.

Litigation against the university – personally identifiable information may be released to the attorneys of the university as deemed necessary for the defense of the university against litigation initiated by the student.

Protect Health and Safety of a student - the university may disclose personally identifiable information from education records to appropriate parties, including but not limited to parents of an eligible student, whose knowledge of the information is necessary to protect the health or safety of a student or another individual if there is a significant and articulable threat to the health or safety of a student or other individual, considering the totality of the circumstances. The university must record the articulable and significant threat that formed the basis for the disclosure and the parties to whom the information was disclosed.

In case of Disciplinary Action - the final results of a disciplinary proceeding may be disclosed if the school determines that the student is an alleged perpetrator of a crime of violence or non-forcible sex offense and the student has committed a violation of the school's rules or policies with respect to the allegation made against him/her.

University's obligation to support Study and Research - to organizations conducting certain studies for or on behalf of the university to develop, validate or administer tests, administer aid programs, or improve instruction, if such studies are conducted in a manner that does not

permit personal identification of parents and students by individuals other than representatives of the organization

ADMINISTRATIVE FEE

The university may charge a nominal fee to provide access to the educational records as outlined in this policy.

STUDENT GENERAL GRIEVANCE POLICY AND PROCEDURE

Habib University is committed to providing a method of redress for legally impermissible, arbitrary, or discriminatory practices. The Student Grievance procedure is just that. This procedure, however, is not meant to supplant other policies or procedures, such as but not limited to, the Code of Conduct or Honor Code. It is meant to provide students an avenue for addressing their concerns not mentioned in other university policies and/or procedures. This policy and procedure is not meant to be a disciplinary one, nor one in which sanctions or punishment is handed out. However, if in light of the investigation and resolution an alleged violation of policy, procedure, or law is seen to have occurred, the university reserves the right to adjudicate the alleged violations through the appropriate procedure(s) as are applicable. Where the department or unit in which the violation allegedly occurred has written procedures for student grievances, students should first attempt to resolve the matter through those procedures.

INFORMAL PROCESS

Before filing a formal complaint under this policy, a student should attempt to resolve the matter informally with the person alleged to have committed the violation and/or with the head of the department or unit in which the alleged issue occurred. The student may contact the Office of Student Affairs for assistance with informal resolution. Attempts to resolve the matter informally should be completed within thirty (30) calendar days from the time at which the student knew or could reasonably be expected to have known of the action being grieved.

FORMAL CAMPUS RESOLUTION PROCEDURES

If the incident is not resolved at the informal and/or departmental level, the student may file a formal student grievance. Any formal grievance must be filed within sixty (60) calendar days of the incident regardless of the progress of the informal and/or department level process.

Student grievances must be in writing and signed by the student. Grievances must contain the student's ID number, campus e-mail address, physical address, and phone numbers to the extent available. It is the responsibility of the complainant to update all current contact information in order for it to be used throughout the grievance process. All official communication in regard to the complaint will be sent via the university's official communication policies. The complainant should also provide a detailed statement of the specific action being grieved, the approximate date when the action took place, the resulting injury or harm, the specific law, policy, or rule alleged to have been violated, a description of the evidence supporting the claim, whether informal procedures were available and completed, and the remedy or relief requested.

All grievances of an academic nature, including but not limited to grade appeals or instructor complaints, should be filed with the Assistant Director of Academic Performance. Cases originating outside of academics and all cases of discrimination, harassment, or assault, should be filed with the Assistant Director of Student Affairs.

INITIAL REVIEW

Upon receipt of a formal student grievance, the competent authority will promptly appoint an impartial Grievance Resolution Officer (GRO). The GRO shall review the grievance and make an initial determination regarding whether the grievance is complete, timely, within the jurisdiction of the Student Grievance Procedure, and alleges facts that, if true, would constitute a violation of law or university policy and/or law. The GRO shall complete initial review of the grievance and notify the complainant of the determination in writing within thirty (30) calendar days of the receipt of the complaint.

If the GRO determines that the grievance is incomplete, is untimely, outside the jurisdiction, or factually insufficient, the grievance will be dismissed. If the grievance raises multiple issues, the GRO will make a determination described above with regard to each issue individually and may investigate some issues and dismiss others pursuant to this review process. If dismissed, the GRO will provide the student with a written explanation of the basis for the dismissal within ten (10) calendar days.

INVESTIGATION AND DECISION

The GRO will commence the investigation by sending a copy of the written grievance to the community member against which the grievance has been filed asking for a written response. The respondent shall confirm or deny each fact alleged in the grievance, indicate the extent to which the grievance has merit, and indicate acceptance or rejection of any remedy requested by the grievant or outline an alternative proposal for remedy. The GRO will provide the grievant with a copy of the department or unit's response.

The GRO may seek to mediate a resolution or negotiate an administrative settlement of the grievance at any time during the course of the investigation. If a resolution satisfactory to both the grievant and the respondent is reached, the GRO will notify both parties of the voluntary resolution in writing and the grievance will be dismissed.

The GRO shall complete the investigation, produce, and file a report within thirty (30) calendar days of the initial receipt of the grievance with the Office of

Student Affairs. The report should contain a summary of the issues presented by the grievance, a statement of the applicable law or policy, a summary of the factual findings reached in the investigation and a conclusion regarding the recommended outcome of the grievance, including proposed corrective actions, if any. A written determination of the case will be sent by the Office of Student Affairs to the student within five (5) business days of receipt of the GRO's report.

APPEALS

To ensure to all parties that the original findings are consistent with Habib University policies and procedures an appeal procedure has been established.

Parties to the decision, either grievant or respondent, may submit written requests for appeal to the Student Conduct Officer within five (5) business days from the date of the original decision, except for reasons of new evidence, outlined below, which should be filed within 30 calendar days of the original decision notice. The student should outline the specific issues and rationale for the appeal in a written request. Requests for appeal will be considered only when based on one or more of the following:

1. Occurrence of substantial procedural irregularities based upon a violation of student rights;
2. Decision influenced by bias by the hearing officer or board, resulting in a violation of standards of fairness used in disciplinary hearings;
3. Evidence not available at the hearing that, had it been available, would in all reasonable likelihood, have produced a different decision.

Once a completed appeal is received, it will be forwarded to the competent authority as is applicable for review. The appeal will be reviewed to determine if the student or organization has sufficient basis for appeal, according to the criteria above. If basis exists, the case will be referred to the University Appeals Committee (UAC). The UAC may choose to modify the finding of responsibility, modify the sanctions, or modify both; remand the case for a new hearing; or uphold the original decision. Appellants will typically be notified of the decision within ten (10) business days of their submission. The decision of the University Appeals Committee is final.

ACADEMIC GRIEVANCE POLICY

INFORMAL PROCESS

Academic grievances arise when students believe that they have been academically disadvantaged or have been subjected to a violation, misapplication or unequal application of university regulations or procedures. Since most grievances originate within departments or comparable administrative units, any student who feels that academic discrimination or other inequitable treatment has occurred should first seek redress within the relevant school. Disputants should first make a good faith effort to resolve the matter amicably between themselves. If, at this stage, the student feels that the grievance has been resolved, the matter ends and no written record will be kept. If no resolution is possible after initial consultation between the disputants, the student is permitted to request mediation by an advisor, Program Director, or applicable dean, as the situation may dictate.*

FORMAL PROCESS

1. The student must submit a written statement and all supporting documentation to the Office of Academic Performance within five (5) business days of the failure of the informal process. This statement should detail the grievance and all informal steps taken prior to the filing of a formal complaint.
2. Upon receipt of this statement, the second disputant will be requested to provide their account of the dispute to the Assistant Director of Academic Performance (ADAP).
3. After receipt of both statements and all supporting evidence, a mediation session before the University Appeals Committee (UAC) will be set, if possible, within 21 calendar days. Each disputant and the members of the UAC will receive copies of both statements and supporting documentation.
4. At the mediation session, each party will be entitled to present their side of the issue at hand, beginning with the complainant. Each disputant will be permitted to present witnesses to the grievance.
5. Immediately after, the UAC will meet to discuss recommendations for the resolution. These recommendations must include both their findings and their reasoning and be delivered in writing to the ADAP within three (3) business days.
6. The Office of Academic Performance will inform the student in writing of the decision within five (5) business days. The decision may follow the UAC's recommendation or be a modification upon it. If it is a modification, the file record must show the ADAP's reasoning behind the modification.
7. There can be no further appeal once the UAC's decision has been delivered.

*If the Program Director or the applicable dean is the primary faculty disputant, the student shall be permitted to request informal mediation from the Office of Academic Performance.

GRADE APPEALS

Grade appeals will be considered a type of academic grievance. Should any student feel that a grade has been arbitrarily or capriciously awarded the student should first attempt to resolve the issue informally with the respective faculty member. If no direct resolution is possible, the student should request arbitration by the Program Director or the applicable dean before filing a formal grievance.

POLICY ON OFFICIAL COMMUNICATION TO STUDENTS

Official communication to students will come via students' university-provided email accounts. Official correspondence may include, but is not limited to, matters related to students' participation in their academic programs (admission, registration, course selection, etc.) and important notices for individual students (warnings, advising requests, notices of dismissal for the purposes of timely communication). In addition, general information concerning university and program scheduling, fee information, and other matters concerning the administration and governance of the university may be sent to individual student emails and to group lists as determined by university administration. Students are responsible for checking their university provided email accounts frequently and consistently and for adhering to deadlines contained in emails from the university and/or its faculty or staff members.

As per its privacy policies, the university will not respond to a student via a generic or otherwise unverifiable "free" email account with sensitive information. Neither faculty nor staff should provide students with grade, transcript, or educational records or information via email. Grades are available through the Learning Management System at the student's convenience.

Use of the university's email system falls under the IT Acceptable Use Policy. Users should be familiar with this policy.

MID-TERM AND FINAL EXAM POLICIES

FINAL EXAMINATIONS

Final examinations are given at the end of each semester. The final examination schedule is announced by the Registrar.

All students registered in a course for which a final exam is given must attempt the exam at the scheduled exam time, unless an exception is allowed by the dean of the school. The circumstances in which an exception may be allowed are discussed below.

MIDTERM EXAMINATIONS

The schedule of midterm exams, be they within or outside the scheduled class hour, are announced by the instructor. As a general practice, midterm examinations should be announced in the course outline distributed to the class during the first week of classes.

MISSED EXAMINATION

All students are expected to complete their assignments, tests, and exams within the time frames and by the dates indicated in their course outlines. However, the university allows a student who misses a mid-term or a final exam due to a religious obligation, medical illness, or family emergency to request a make-up exam.

Examinations will not be rescheduled to accommodate travel, family plans or employment commitments. Generally, a student who misses an exam without a pre-approved alternate arrangement will receive a zero for that exam. Under exceptional circumstances, the appropriate school dean has the discretion to a allow make-up exam even if the student did not have a pre-approved alternate plan. However, all make-up exams must be given before the official close of the semester.

RELIGIOUS ACCOMMODATION

Habib University recognizes that some students may have bona fide religious conflicts with scheduled examinations. In such cases the university will make reasonable efforts to accommodate the affected students by providing alternative times or methods to attempt examinations.

Students should review the syllabus for each of their courses at the beginning of each semester to determine if personal religious observance will conflict with the schedule of their exams. In the case of a conflict with a midterm examination, the student must submit to the instructor a statement describing the nature of the religious conflict and specifying the days and times of conflict within a reasonable time of discovering the conflict. If a suitable arrangement cannot be worked out between the student and the instructor, they should consult the appropriate dean or Program Director.

In case of a conflict with a final examination, the student must submit a written statement to the instructor, dean of the school, and Registrar. In such a case, any approved make-up exam may be scheduled after the final exams period. If a student fails to follow this procedure or give timely notice of conflict and subsequently misses the exam, no make-up exam will be given and the student will receive a grade of zero in that exam.

POLICIES ON USING HABIB UNIVERSITY TECHNOLOGY

Habib University technology resources should be used only to accomplish university-specific tasks, goals, and learning objectives. To this end, Habib University prohibits the use of cell phones in the classroom during class. All other use of technology within the classroom is permitted at the discretion of the faculty and the individual schools.

Proper social and professional etiquette must be exercised when using the Habib University IT system. Use of the network implies consent to the monitoring of traffic as necessary. Habib University does not condone the use of inappropriate language when writing to instructors, staff or students and may be cause for disciplinary sanctions, if reported.

No Habib University technology resources are to be used to produce, view, store, replicate, or transmit harassing, obscene, or offensive materials. This includes, but is not limited to, material from the internet, screen savers, etc. In addition, the distribution of printed copies of such material, including those from magazines, is not permitted. Habib University will have zero tolerance for any student, faculty or staff members who violate this policy, and immediate disciplinary action may result.

University IT services shall not be used for purposes that could reasonably be expected to cause, directly or indirectly, excessive strain on computing resources or unwarranted and unsolicited interference with e-mail or e-mail systems. Use of IT services that could interfere with other students' or employees' work or disrupt the intended use of network resources is prohibited. Sanctions for misuse of e-mail, Internet or any part of Habib University technology resources will be determined by the Director of Information Technology following consultation with the Provost or the competent authority.

CATALOG YEAR

Catalog year refers to the setting of course and non-course requirements within academic programs as stated in the applicable section of a specific catalog. A student must graduate under the provisions of any Catalog in effect since the student began continuous enrollment at the university, but must do so in a single catalog's entirety.

Continuous enrollment is defined in this policy as being enrolled in classes without a break in semesters/terms, excluding summer terms in most instances, or unless covered in other areas of the Catalog or other student policy document.

THE HABIB UNIVERSITY
LIBERAL CORE

The classic liberal arts model demands that the total undergraduate experience include exposure to a broad and inclusive range of existing forms of knowledge. Through the Habib University Liberal Core Curriculum we ensure that all of our students, regardless of major, conform to this high educational aspiration. No well-educated person should remain ignorant of the depth and richness of history and literature, or inarticulate about the wonder of scientific and mathematical inquiry.

Habib University has chosen the liberal arts and sciences model of education out of its commitment to the development of leadership potential as an essential goal of a truly higher education. At the core of our institutional identity as a liberal arts institution is our flagship Liberal Core curriculum that seeks to fulfill our motto of yohsin: 'The worth of all humans is in the measure of their thoughtful self-cultivation.' As they take on the task of forming themselves into adults, professionals, and beyond, the Habib Liberal Core is designed to enable students to reflect and communicate knowledgably on the most critical aspects of their experience in the world they inherit today.

The Core commences with the systematic development of reading, communication, and presentation skills that will continue to be improved throughout our students' undergraduate careers. The curriculum is built around a recurring multidisciplinary engagement with the history, structures, and features of the modern period and world, drawing on powerful texts and artifacts in a range of media from across the arts, humanities and social sciences. From colonialism to nationalism and the nation-state, from war to the global political economy, from the growth of modern media to science and technology and their relationship to society, our Liberal Core is committed to a rigorous analysis and critique of modernity in all its local, regional, and global complexity. An encompassing historical understanding is essential to the classic liberal education – one that our core curriculum provides with a critical, modern edge.

The principle of yohsin tells us that the cultivation of a beautiful and thoughtful self that shines with the light of care, knowledge and universality is an ancient and universal aspiration. Humanities and the humanistic spirit – which are all about excellence, grace, generosity, knowledge and universality – proliferate across the life and legacy of all cultures. What makes Habib University's Liberal Core unique is its incisive focus on the humanistic knowledge and inheritance that are unique to Pakistan in its surround coupled with a simultaneous focus on Western humanities and knowledge. To help achieve this end, in addition to significant elements within the Liberal Core all students are required to complete at least one course in a vernacular language, "Jehan-e-Urdu" (The World of Urdu), which will exploit the potential of modern Urdu literature and criticism to illuminate crucial aspects of our modernity.

Finally, no modern education is complete without substantially engaging scientific thought. Science and its forms of knowledge and action pervade all forms of inquiry as well as our everyday lives. The Habib University Liberal Core Curriculum includes universally required courses in deductive and quantitative reasoning, as well as in natural scientific method and analysis.

the density of a solid object
is fluid

$$\frac{\sin\alpha}{\sin\gamma}$$

Courses

CORE 101: Rhetoric & Communication

The command of language and the ability to communicate effectively in speech and writing is essential to leadership. This is why eloquence in the broadest sense is one of the most highly valued benefits of a liberal arts education. The opening course in our Liberal Core is designed to develop the reading and presentation skills – written, oral, applicative and visual – that our students will need to excel at Habib University and beyond. Our curriculum nurtures our students' rhetorical abilities throughout their college career, especially through the Liberal Core. Rhetoric & Communication is designed to first identify the different aspects of expression and eloquence as distinct and essential abilities, and to develop and improve them through application and practice.

Explaining the combination of powers involved in the ancient division of rhetoric into invention, arrangement, style, memory, and delivery, the Roman orator Cicero says in his classic text on rhetoric, De Oratore: "Since all the activity and ability of an orator falls into five divisions, he must first hit upon what to say; then manage and marshal his discoveries, not merely in orderly fashion, but with a discriminating eye for the exact weight as it were of each argument; next go on to array them in the adornments of style; after that keep them guarded in his memory; and in the end deliver them with effect and charm."

The material, classroom experience, and exercises of Rhetoric & Communication are designed to cultivate all five of these critical abilities, together with sophisticated reading skills. Our students will learn to make their speech and writing a total rhetorical experience, allowing them to communicate as effectively as they can across a variety of media. Class content will focus on compelling and relevant texts broadly defined, and chosen to elicit opinion and encourage discussion and debate. As they develop their powers of reading powerful texts, students will practice and improve communication skills through regular writing assignments as well as presentations. Rhetoric & Communication will also feature the ethics of discourse and communication, so that tact and respect for the other become an essential part of students' experience and understanding of rhetorical ability.

CORE 102: What is Modernity?

No one in the medieval world thought they were 'medieval.' The belief that we live in a distinct period of human history – that of 'modernity' – sets us apart from all pre-modern peoples. It is a defining aspect of who we are, essential to our modern identities. It is thus imperative to the task of understanding both ourselves and our world to ask the question: What is it to be modern? What is modernity?

Our 'modernity' is the very air we breathe. It encompasses, at a gathering pace, all aspects of our lives. This is why the question of modernity has been a central concern across the range of disciplines and fields of the arts, humanities and social sciences throughout the modern period. This course is thus designed as a multidisciplinary study of key texts that illuminate the various features and structures of our lives and our world, of the dynamic culture of modernity. Examples of themes covered in the course are:

• Political modernity, e.g., democracy and dictatorship, nationalism and the nation-state, revolution and sovereignty, colonialism and imperialism
• Economic modernity, e.g., free-market capitalism, neoliberalism and globalization, Keynesianism and the welfare-state, socialism and communism, international aid and the global political economy
• Scientific modernity, e.g., Cartesianism, Newtonianism, quantum theory, technological utopianism
• Aesthetic modernity, e.g., realism, art-for-art's sake, modernism and the avante-garde
• Modernity and media, e.g., print, radio, film, television, journalism and the entertainment industry
• Modernity and gender, e.g., patriarchy, feminism and masculinity
• Modernity and the environment, e.g., industrialism, fossil fuels, ecological imperialism and animals
• Modernity and religion (e.g., science and religion, reform and fundamentalism, religion and politics)

Through critical and intensive engagement – in discussion, debate, and writing – with both classic and contemporary texts from the history of reflection on modernity, students will gain a sophisticated and articulate understanding of both themselves and their world that will be further refined throughout the core.

CORE 201: Pakistan & Modern South Asia

For the first time in history, nation-states – including that of Pakistan – emerged in the region of South Asia in the middle of the 20th century. How did such a world-historical event come about? What has it meant for the peoples of this region? In short, what is the history of our present?

This question takes on a particular urgency in Pakistan as the region passes through the current period of crisis and change. With a special focus on the emergence and trajectory of Indo-Muslim nationalism and the creation of Pakistan, this course will be a conspectus of the modern history of South Asia from the colonial period, including the rise of anti-colonial nationalism and decolonization, to the Cold War and the contemporary period of turmoil and transformation. While focusing on the history of Pakistan's challenging present, students will also learn about the larger, regional and global context in which that history has unfolded.

Apart from the main outlines of the history of modern South Asia, students will also learn to place the region's colonial modernity within the larger framework of modern history. Students will crucially learn to identify major features of the colonial economy and state under which – especially after the Great Rebellion of 1857 – regional religious and other social reform movements emerged, nationalisms formed, and the dramatic transformation of regional traditions took place,

processes that continue into the present.

They will learn to see contemporary conflicts and ideologies as specific to the modern period rather than as natural cultural expressions, and they will begin to see regional cultures and societies themselves as historical entities. Course materials will again be multidisciplinary – including, for example, anthropology, literature and film – but will be primarily historical. This course will combine lectures and seminars and will be writing intensive.

CORE 202 & 301: Hikma I & II – History of Islamic Thought

In the manner of the classic liberal core curriculum, Habib University's flagship two-semester course sequence in regional and global humanities, Hikma I & II, takes the students to the pre-modern and ancient worlds of philosophy, religion, literature and art that remain our heritage. Placed after our students have successfully grasped the specific nature and thought of the world of modernity, the Hikma courses have been designed to fulfil a critical goal of the classic liberal arts education: the task of inheritance – a task that includes commentary and discussion, as well as criticism and judgment. Bridging the students' crucial sophomore and junior-years, this sequence is designed to take our students to the next level of humanistic study and conceptualization, as well as of sophistication in reading, discussion, critical thinking and writing.

The content of the Hikma course sequence responds to the widespread call to revisit the humanistic inheritance of the world's many civilizations and regions, and to include this human heritage as an essential part of the liberal arts curriculum. The course thus takes an expansive world-historical and global view of the region's rich heritage of Islamic thought in its intense and distinctive engagement with both Greek antiquity and the other Abrahamic traditions, as well as ambient regional traditions, such as Buddhism and the Bhakti. The Hikma course sequence thus offers the students of Habib University a panoramic and rigorously universalist perspective that connects with Islam's distinctive inheritance, one that is also shared with its neighbors.

The syllabus begins with an exploration of the deep philosophical and spiritual content of key source texts of the Abrahamic and Semitic traditions, especially the Quran and Hadith, as well as material from some of Islam's earliest thinkers before its encounter with ancient Greek thought. The course then turns to some of the key texts from Greek antiquity – by Plato, Aristotle and Plotinus – that have been read avidly in the philosophical tradition of Islam. This interaction provided a productive engagement that has resonated through the centuries in Islam's distinctive literatures, and philosophical and spiritual discourses. The course thus reads the rich texts emanating from this encounter in Muslim thinkers such as Al-Farabi, Avicenna, Suhrawardi and Mulla Sadra, as well as philosophically and spiritually rich Islamic poets, such as Rumi and Amir Khusraw.

Another goal of the Hikma course sequence is to serve as a substantial introduction to the cross-philosophical engagement between Islam and other Asian traditions. Since such an introduction is not meaningful without some familiarity with non-Islamic traditions, the latter will be achieved through close reading and discussion of select primary sources in Indic and Chinese thought. In addition, the course will be focused on contemporary critical reflections in comparative metaphysics and theology particularly as they pertain and apply to parallels and contrasts between Buddhism, Taoism and Islamic spirituality.

The course will end with readings in the contemporary art, literature and thought of South Asia drawn from the living inheritance of the various traditions explored.

The overall objective of these sections of the course is to provide insights into Islam as a universalist religion that has contributed in bridging the gap between the Semitic and Western world on the one hand, and the religious worlds of South and East Asia on the other hand. Though the course material will be primarily philosophical and literary, we will also engage material from history, politics and the arts.

CORE 302: Science, Technology & Society

The centrality of science and technology in the contemporary world is unparalleled in the history of human societies and cultures. Because of the obvious power of scientific thought to shape ideas it has been the foundation upon which notions of progress, modernity, and even freedom and liberty have been built since the end of the 18th century. Science, Technology & Society is a critical interdisciplinary course challenges advanced students with the central assertion that, in the words of contemporary philosopher of science Sergio Sismondo, "science and technology are thoroughly social activities."

The course will draw upon Science and Technology Studies (STS) to demonstrate that the production and practice of scientific knowledge and technological development is a social and an historical process in which both scientists and citizens play a key role. Students will examine the ways in which scientific communities create and regulate methods, establish consensus, and uphold or challenge theoretical models and technological advancements. In addition, throughout the semester they will be asked to critically analyze the social impact and meaning of scientific breakthroughs and technological advances in historical and contemporary contexts, giving students ample opportunities to explore the role of science within society.

Because scientific progress necessarily represents change, the topics explored will evolve regularly, but examples include: stem-cell research and medical ethics; mobility and transportation; communication and the production and circulation of knowledge; surveillance and privacy; and the changing face of labor, from the Industrial Revolution to globalization.
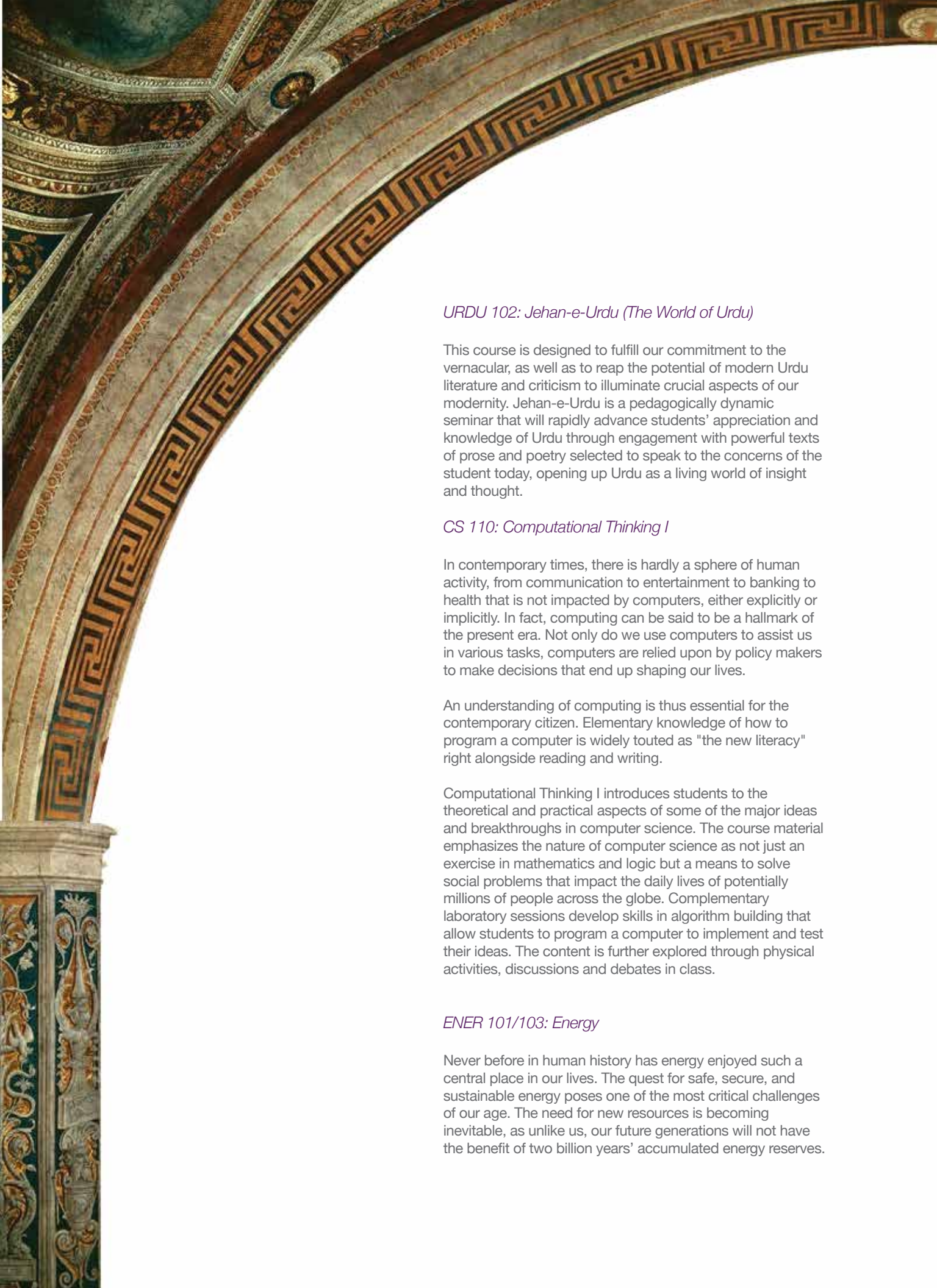
URDU 102: Jehan-e-Urdu (The World of Urdu)

This course is designed to fulfill our commitment to the vernacular, as well as to reap the potential of modern Urdu literature and criticism to illuminate crucial aspects of our modernity. Jehan-e-Urdu is a pedagogically dynamic seminar that will rapidly advance students' appreciation and knowledge of Urdu through engagement with powerful texts of prose and poetry selected to speak to the concerns of the student today, opening up Urdu as a living world of insight and thought.

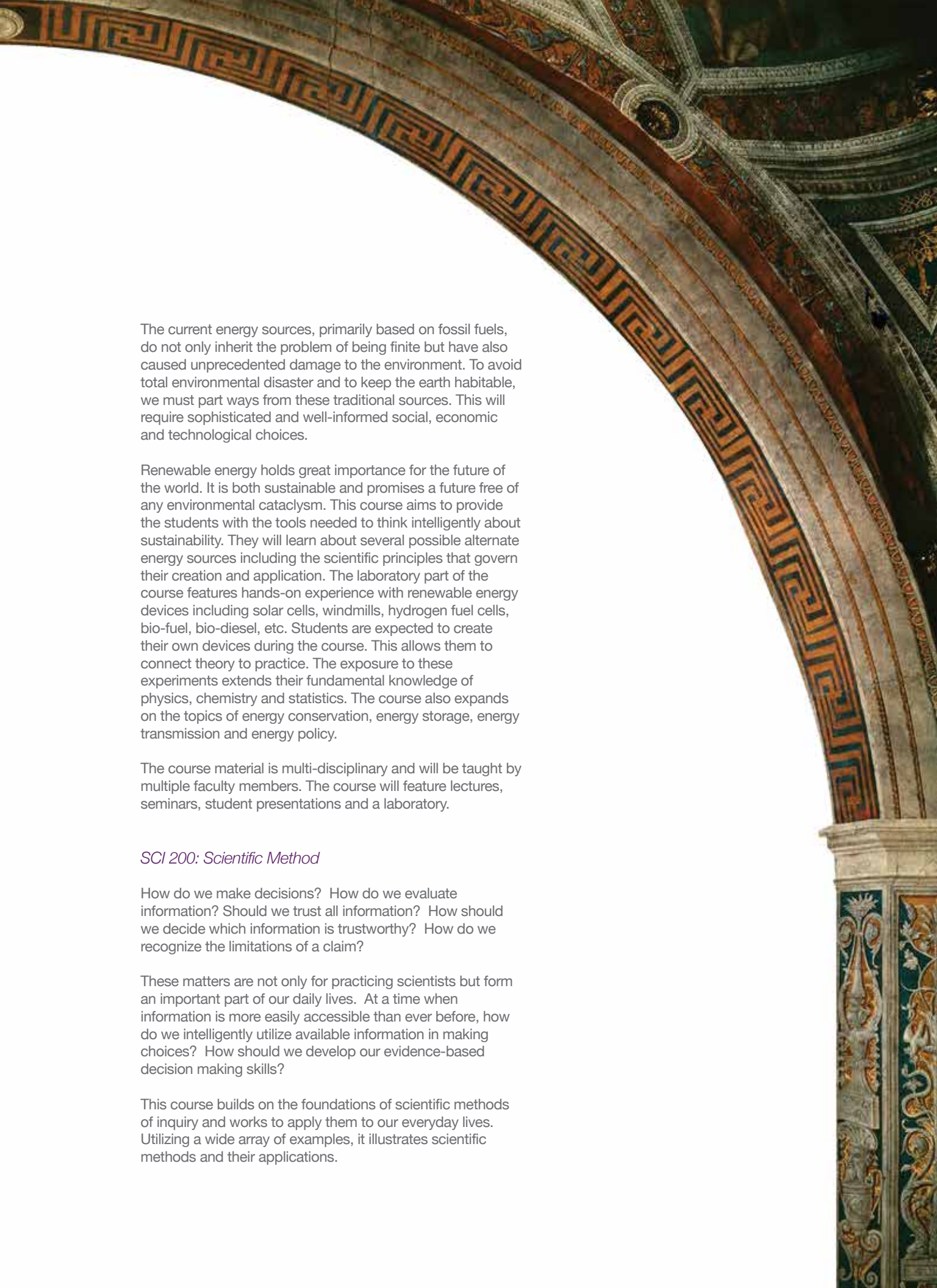## CS 110: Computational Thinking I

In contemporary times, there is hardly a sphere of human activity, from communication to entertainment to banking to health that is not impacted by computers, either explicitly or implicitly. In fact, computing can be said to be a hallmark of the present era. Not only do we use computers to assist us in various tasks, computers are relied upon by policy makers to make decisions that end up shaping our lives.

An understanding of computing is thus essential for the contemporary citizen. Elementary knowledge of how to program a computer is widely touted as "the new literacy" right alongside reading and writing.

Computational Thinking I introduces students to the theoretical and practical aspects of some of the major ideas and breakthroughs in computer science. The course material emphasizes the nature of computer science as not just an exercise in mathematics and logic but a means to solve social problems that impact the daily lives of potentially millions of people across the globe. Complementary laboratory sessions develop skills in algorithm building that allow students to program a computer to implement and test their ideas. The content is further explored through physical activities, discussions and debates in class.

ENER 101/103: Energy

Never before in human history has energy enjoyed such a central place in our lives. The quest for safe, secure, and sustainable energy poses one of the most critical challenges of our age. The need for new resources is becoming inevitable, as unlike us, our future generations will not have the benefit of two billion years' accumulated energy reserves.

The current energy sources, primarily based on fossil fuels, do not only inherit the problem of being finite but have also caused unprecedented damage to the environment. To avoid total environmental disaster and to keep the earth habitable, we must part ways from these traditional sources. This will require sophisticated and well-informed social, economic and technological choices.

Renewable energy holds great importance for the future of the world. It is both sustainable and promises a future free of any environmental cataclysm. This course aims to provide the students with the tools needed to think intelligently about sustainability. They will learn about several possible alternate energy sources including the scientific principles that govern their creation and application. The laboratory part of the course features hands-on experience with renewable energy devices including solar cells, windmills, hydrogen fuel cells, bio-fuel, bio-diesel, etc. Students are expected to create their own devices during the course. This allows them to connect theory to practice. The exposure to these experiments extends their fundamental knowledge of physics, chemistry and statistics. The course also expands on the topics of energy conservation, energy storage, energy transmission and energy policy.

The course material is multi-disciplinary and will be taught by multiple faculty members. The course will feature lectures, seminars, student presentations and a laboratory.

SCI 200: Scientific Method

How do we make decisions? How do we evaluate information? Should we trust all information? How should we decide which information is trustworthy? How do we recognize the limitations of a claim?

These matters are not only for practicing scientists but form an important part of our daily lives. At a time when information is more easily accessible than ever before, how do we intelligently utilize available information in making choices? How should we develop our evidence-based decision making skills?

This course builds on the foundations of scientific methods of inquiry and works to apply them to our everyday lives. Utilizing a wide array of examples, it illustrates scientific methods and their applications.

SCHOOL OF ARTS, HUMANITIES AND
SOCIAL SCIENCES

SOCIAL DEVELOPMENT AND POLICY
BSc (Honours) Program

Faculty Members:

Dr. Aaron Mulvany, Assistant Professor
Fahd Ali, Assistant Professor
Dr. Hafeez Jamali, Assistant Professor
Dr. Hasan Ali, Assistant Professor
Dr. Muhammad Haris, Assistant Professor
Dr. Nauman Naqvi, Assistant Professor
Dr. Noman Baig, Assistant Professor
Dr. Nosheen Ali, Assistant Professor and Program Director
Dr. Severine Minot, Assistant Professor

Visiting Scholars:

Haris Gazdar (Spring 2016)

Vision

"Development" has become a principal idea of our times, and an object of aspiration for individuals, communities, and governments alike. How can we examine and engage with development as a multi-faceted process of social, economic, and political transformation, while attending to context and ethical practice? Responding to this key concern, the central vision of the Social Development and Policy (SDP) program at Habib University is to nurture a comprehensive understanding of development and social change — one that is firmly rooted in an ethic of care and grounded in a sense of place. Such a careful, place-based understanding is deeply connected to the love of knowledge as well as the search for truth, once considered as essential aims of pedagogy. Indeed, such connections are often reflected in language itself. The Urdu term khayal, for example, simultaneously means thought, imagination, and care. Moreover, this sensibility is fundamentally tied to Habib University's philosophy of yohsin, the practice of thoughtful self-cultivation.

To fulfill this vision, the undergraduate major in Social Development and Policy combines rigorous classroom training in the social sciences and humanities with reflective, field-based practice. The first program of its kind in Pakistan, it aims to give students new ways to approach the challenges of development at home and abroad. Students will explore how major development concerns such as poverty, inequality, urbanization and human rights are shaped by historical forces and processes of political power, while also examining the role of states, development institutions, markets, and civil society in shaping human well-being. Employing a transdisciplinary approach to the study of social problems, the program integrates perspectives and skills drawn from a wide range of disciplines, including:

• Anthropology
• History
• Economics
• Sociology
• Political Science
• Religious Studies
• Philosophy
• Literature
• Environmental Studies

Offering critical insights into the core values of development and progress, the SDP major will train a new generation of social scientists who – like the best development practitioners – can incorporate lived experience and vernacular sensibilities into policy design at the national and international levels.

BSc (HONOURS) IN SOCIAL DEVELOPMENT AND POLICY: REQUIREMENTS FOR THE MAJOR

Students majoring in Social Development and Policy are required to finish a total of 35 courses, while maintaining a minimum grade of C+ (2.33 GPA), in order to graduate.

For in-depth learning in their field, fifteen courses are required in the SDP major itself. Of these fifteen courses, seven are compulsory, covering key topics in theory and method, the field practice requirement, and the senior thesis requirement. The other eight are elective courses, which a student may use to explore different dimensions of development and social transformation. Five of these may be any course offered in SDP, provided at least two are upper-division courses, while the remaining three must be upper-division courses taken in one of the following thematic concentrations:

• Poverty and Inequality
• Governance and Human Rights
• Urban and Community Studies
• Culture and Expression
• Ethics and Social Justice

Alongside their specialized training, SDP students are required to take courses outside their major to facilitate a broad exposure to knowledge. The overall graduation requirements are outlined in the following table:

Course Category	Number of Courses to complete
University Requirements	
University Core	9
Jahan-e-Urdu	1
Creative Practice	1
Social Development and Policy	
Foundational Theory and Method	3
Field Practice	1
Electives (at least 2 upper division)	5
Thematic Concentration	3
Math for Social Sciences	1
Senior Thesis	2
Other Requirements	
Regional Language	3
Visual Communication	2
Free Electives (AHSS or SSE)	4
Overall	35

REQUIREMENTS FOR THE MINOR

To minor in SDP, students must take a total of five courses, three core and two electives. The core courses are: Development and Social Change, Ethics and Methods of Research, and Field Practice. The Field Practice course may only be taken after the other two core classes have been successfully completed. Of the two electives, at least one must be upper-division (300- or 400-level).

COURSE DESCRIPTIONS FOR THE FIRST YEAR

FALL 2015

SDP 101: Development and Social Change

This course will introduce students to key themes in the history, theory, and practice of development. Students will explore the histories of power and powerlessness through which social inequalities have been produced and heightened, the dynamics of different development models and paradigms in the post-World War II era, the theoretical frameworks that have been put forward to analyze these dynamics, and the problems and prospects of putting development ideas into practice in specific areas of concern such as poverty, food insecurity, and environmental degradation.

SDP 111: History of Economic Thought

This course explores the evolution of key ideas within economic thought and analyzes how these ideas led to different ways of theorizing in economics. We will begin by examining the theories and methodologies presented by two of the greatest thinkers in classical political economy: Adam Smith and David Ricardo. This will be aided by understanding the influence of rational subjectivism and utilitarianism on economic thought. The final part of the course will examine the critique of political economy offered by Karl Marx. The course will rely on textbook readings and notes prepared by the instructor.

SDP/MATH 151: Mathematics for Social Sciences

Mathematics for Social Sciences' is a course for non-science majors at Habib University that will introduce students to the various techniques of quantitative analysis used within the Humanities and Social Sciences. The four main topics that will be covered will be symbolic logic, calculus, statistics and probability, financial math, to best equip students with analytical methods for use both in the classroom and the field. Coursework will be structured around the practical application of mathematics to real-life situations.

SDP 181: Religious Traditions of South Asia

This course aims at understanding the religious diversity of South Asia. South Asia is the original home of Hinduism, Buddhism, Jainism and Sikhism along with many other tribal and local religious traditions. Islam, Christianity and Zoroastrianism originated elsewhere, but moved to South Asia and have long been part of its history, adding to its religious and cultural diversity. Hinduism, Buddhism, Islam, Christianity and Sikhism compose the major contents of this course. Students will explore the above mentioned major religious traditions of South Asia in their historical and political contexts. This course is designed to present a basic understanding of rich and complex diversity of religious traditions of the region, hence students will also explore the diversity present within any individual religious tradition studied. Students will discover the histories, texts, doctrines, rituals and cultural expressions of the religious traditions cited above. Whereas we shall be discussing fluidity of religious identities in pre-colonial India throughout our coursework, it will conclude by discussing the hardening of communal identities towards the end of the colonial era.

SDP 191: Introduction to Philosophy

This course is a historical introduction to philosophy. Areas to be covered include: methods of philosophical inquiry (Socratic dialectic, formal and informal logic, critical thinking, argument construction and evaluation), Ontology, Epistemology, Ethics, Political Philosophy, Philosophy of Science, and Philosophy of Technology. Original text selections drawn from the works of various important philosophers, including, Plato, Aristotle, Al Ghazali, Ibn Rushd, Ibn Bajja, Descartes, Kant, Mill, Nietzsche, Marx, Heidegger, Sartre, Beauvoir, Popper, Derrida, and others.

SDP 215: Matlab...Introduction to Semiotic Analysis

Humans make sense of and communicate about the world they experience through complex systems of representation. These signs and symbols are necessarily an abstraction of the world they are meant to represent. Semiotics, the study of sign systems, has its contemporary origins in the writings of the linguist Ferdinand de Saussure and philosopher Charles Sanders Peirce, through whose work semioticians have tried to understand the systems of representation underlying human culture and communication. In this course we will focus on the application of sign theory to the study of media, myths, and political discourse in order to explore how semiotic concepts can be used to analyze human culture and expression.

Cross-listed as CSD 215

SDP 241: Perspectives in Social and Cultural Anthropology

This course is an introduction to social and cultural anthropology. Anthropology is the study of human beings in a cultural context. The course exposes students to the intricacies of culture upon which modern developmental practices are overlaid and superimposed. For instance, how do gift-exchange practices of local communities help us understand the politics of international aid? How do rituals of magic explain the commodity fetishism of capitalism? How does tribal social organization overlap with the modern nation? Addressing questions like these would provoke students to critically think of culture as a significant force in the study of social development. Students will be exposed to the theories of culture, reciprocity and gift-exchange, marriages and kinship, organization of political systems, social inequality and hierarchies, rituals and religion, nature and

SPRING 2016

SDP 102: Ethics and Methods of Research

Combining theory and hands-on experience, this course will expose students to key approaches in research design and methodologies. They will learn and practice a variety of qualitative and quantitative techniques, including observation, interviews, focus groups, surveys, and archival research. Alongside, they will study and debate the ethical complexities of conducting fieldwork and implementing research and development projects in underprivileged communities.

SDP 132: Principles of Political Economy

Political Economy is the study of the production and distribution of material wealth in a society. It is premised on an economic analysis of 'political' decisions and their impact on the economy, in turn. How does a society organize its production and distribution? What is the role of 'power' in sustaining those arrangements? How do different theories compare in terms of explaining the relationships between politics and economics?
The aim of this course is to familiarize students with the basic knowledge of political economy, including its historical context, genealogy, method of inquiry, scope, overarching relevance, and its overwhelming advantage over the conventional (axiomatic) economics. The focus of the study will be upon critical examination, analysis, dialectical interpretation, and radical explanation of contemporary capitalist economy, polity, and society. The framework of analysis combines the historical evolution and socioeconomic transformation of capitalism, including the critical examination of power relation and conflict and their ideological implication in the post-hegemonic globalized world of today. We explore the fundamental concepts of political economy through readings, lectures and discussion of original texts of various traditions within political economy: Classical, Marxian, and Neo-Classical. We compare and contrast between the various trends and explore how different assumptions about 'politics', 'economics' and their interaction shapes these competing theoretical trends.

SDP 138: Mega-Projects and the State

Large-scale infrastructure development projects such as dams, highways, airports, mass transit, and urban redevelopment have captured the public imagination, defined urban design and form, and acted as signposts of progress since the beginnings of modernity. From Napoleon III's Paris to Ayub Khan's Islamabad and contemporary city-states of Dubai, Singapore, and Hong Kong, state sponsorship of large-scale structures has shaped popular understanding, expectations, and experience of what it means to be a modern citizen. However, megaprojects also tend to damage the lives of the very citizens they claim to improve by disrupting the rhythms of urban life, displacing entire populations, dispossessing people of their land, and polarizing nations and communities. As a result, debates over the desirability and sustainability of megaprojects have taken centre stage in contemporary national and international public sphere.

The purpose of this course is to critically examine the history, politics, ethics, and aesthetics of public investment in megaprojects. Why do governments all over the world undertake such highly ambitious and disruptive projects? How do complex physical and social engineering schemes come to occupy a central place in the imagination of political leaders, policymakers, and ordinary people? In what ways do megaprojects reorganize urban space and reconstitute social relations between people from different social classes? What kinds of hopes do they excite among the local people and what fears and anxieties do they generate? We will reflect on these questions by considering megaprojects as sites of struggle in multiple dimensions: between contrasting visions of a good life; different understandings of place and identity; and competing interests of coalitions and networks of actors at local, national, and global levels. While we will be reading a diverse body of writings from anthropology, political economy, management sciences, journalism, and literature, most of our examples and case studies will be drawn from ethnographic accounts that highlight the stories, experiences, and perceptions of people who are the intended beneficiaries of megaprojects.

SDP 148: Kabhi Paani Kabhi Pyaas - Water in Human Society

Water is life. Pre-Socratic monists saw water as the originating principle, the single material substance from which all others derived. Sanskrit texts classify it as one of the Panchamahabhuta, or five great elements, and the Qur'an states that every living thing was made from water (21:30). Philosophy and religion have always understood the importance of water, and in the face of border struggles over water resources, political debates over water privatization, and environmental crises wrought by global climate change can we doubt our complete dependence upon this substance? This course will draw texts from anthropology, environmental and development studies, social history, political and ethical debates, and the natural sciences to explore water-scarce and resource-rich societies alike, and to probe the socio-cultural significance of water around the world.

SDP 156: Migration and Modernity

This courses covers major issues surrounding migration in modern times. It acknowledges the legacies of imperialism, colonization and decolonization as background context informing power relations between mobile and sedentary population groups around the world, and the conditions afforded by regional, continental and global political economies as structural forces determinant in influencing migration flows and migratory experiences. It looks at the effects of migration on receiving and sending countries, as well as the political and legal frameworks that regulate exit, entry, residence, labour conditions, wages, remittance flows, etc. This course is also concerned with culture and processes of cultural transition such as adaptation, acculturation, assimilation, integration, appropriation, etc., as well as pervasive dynamics of "Othering." By identifying various kinds of migration (forced displacement, asylum, economic and/or political migration, temporary or cyclical migration,

legal/illegal, among others), important distinctions are made surrounding forms of motivation, privilege or disadvantages, lifestyle, agency, formal and symbolic citizenship, transience vs. permanence, etc. Key questions raised in this course will revolve around two main axes: 1) Power, inequalities and exploitation; and 2) nationalism and transnationalism, and their identity correlates (including issues of belonging and community formation and transformation).

SDP 202: Development & the Global Economy

Development is inextricable from the histories and processes of economic growth. In this course, students will examine the political economy of development as well as the economic challenges faced by countries in the global north and south. It will cover topics such as agriculture and the world market, globalization and trade, and international finance, while exposing students to the role of states, non-governmental organizations, multilateral aid agencies, philanthropic foundations, corporations, and communities in charting the development trajectories of different regions.

SDP 220: Poetic Thought in South Asia and the Middle East

What does "poetic" mean? What is the connection between poetic communication and cultural identity? And how can an understanding of South Asian and Middle Eastern poetic expressions enrich our knowledge of the nature of self, thought, and society in these contexts? These are some of the key questions that we will delve into, as we navigate the profoundly rich terrain of poetic knowledge in South Asia and the Middle East. Key themes include poetic knowledge as a lens on history and society, gender and power in expressive traditions, poetry and spirituality, and political critique and poetic protest. Course readings will include texts from literature, sociology, anthropology, history and religious studies, and will be supplemented with poetic videos and documentary films.

SDP 244: Violence in the Social Sciences

Description unavailable at time of printing.

SDP 292: Tragic Philosophy

This course explores the idea of the tragic, as manifested in seminal works of literature and drama, and in the writings of various significant figures in the history of philosophy. Concurrently, we are going to talk about the tragic as a fundamental feature of human life and experience, and one that requires acknowledgement if we are going to come to terms with processes of ironic self-destructiveness underway in politics, society, community, culture, economics, and in the often fraught relationship between technological civilization and the natural environment.

COMMUNICATION STUDIES & DESIGN
BA (HONOURS) PROGRAM

Faculty Members:

Jamil Dehlavi, Associate Professor
Dr. Markus Heidingsfelder, Assistant Professor
Saima Zaidi, Assistant Professor
Dr. Sarah Humayun, Assistant Professor

Visiting Scholars:

Muhammad Hanif (Spring 2016)

What is Communication Studies & Design?

Communication is at the heart of society. It is the central operation by which societies produce and reproduce themselves. Communication Studies & Design (CSD) is dedicated to the nature and dynamics of this process. Developed on the basis of market research, as well as in consultation with academics from leading regional and global universities, the CSD curriculum provides inter- and transdisciplinary instruction not only in the function but also in the practical application of a wide range of communication and media forms.

Vision

We believe that one has to make media in order to understand media. This is why the CSD curriculum combines theory and practice, thinking and making. Drawing from both the origins of the discipline as well as its later developments, Habib University offers a program that integrates the practical and the theoretical, the social sciences and the humanities.

What will students get from studying Communication Studies & Design?

Students in Pakistan today represent a generation with an unprecedented potential to meet the challenges of the modern world. The unique combination of communication theory with communication practice helps unfold this potential. CSD students will develop an awareness of different types of media and learn to produce artifacts of communication ranging from the text-based to the graphic to the moving image. Therefore CSD graduates are prepared for careers in the media industries as well as in media management, public policy, and any other sector that requires media expertise. Critical thinking, systematic analysis, and clear and articulate communication skills consistently developed and refined from first class to final thesis will be a crucial advantage in any market.that requires media expertise. Critical thinking, systematic analysis, and clear

and articulate communication skills consistently developed and refined from first class to final thesis will be a crucial advantage in any market.

Streams

The CSD program integrates perspectives and skills drawn from a wide range of areas including Communication Theory, Media Studies, Cinema, Journalism, Design, Literature, Sociology, Aesthetics, and History. It consists of three streams: Communication Studies (Com), Communication Design (ComD), and Moving-Image Media Production (Mov).

Communication Studies (Com)

The Com stream builds upon the core academic CSD curriculum that provides the historical and theoretical grounding for the department as a whole. It offers students the opportunity to explore the complex relationship between communication, media, and society. We analyze the form and function of mass media communication as well as new media forms, from digital platforms like Google or Facebook to multimedia storytelling. The Com student will also enjoy the opportunity to produce – in the form of websites, podcasts, videos, and digital archives – public documents representing the fruits of their research and discovery.

Communication Design (ComD)

The ComD stream offers students the opportunity to explore the visual combinations of words and images in traditional and new media. The skills learned will enable students to visualize ideas, organize information effectively and aesthetically, and present that information to the intended audience. Gaining skills in typography, photography, and illustration, students will actively investigate the range of methods of visual production. Graduates will be prepared with an active understanding of graphic identity, publication and interaction design, and environmental and information design. ComD's emphasis on communication in local and regional contexts enables students to become graphic problem-solvers, sensitive to their environment and to its location within global society.

Moving-Image Media Production (Mov)

The Mov stream gives students the opportunity to explore the making of moving-image media in a variety of forms. Grounded in a knowledge of cinema and media history and theory, students will have the opportunity to explore fictional and documentary filmmaking, experimental video, and journalistic visual reporting and storytelling. With hands-on experience in the scriptwriting, filming, editing, and exhibiting of their own original work, students gain a broad, working understanding of digital film and television production.

BA (Honours) in Communication Studies & Design: Requirements for the Major

Communication Studies & Design is a four-year (eight semester) program. Students majoring in Communication Studies & Design are required to finish a total of 36 courses, while maintaining a minimum grade of C+ (2.33 GPA), in order to graduate. These courses consist of the major requirements, the university-wide Liberal Core, and general requirements for the School of Arts, Humanities and Social Sciences.

The CSD major is comprised of 19 courses for the Com and Mov streams and 17 courses for ComD. Three of these courses are considered to be "gateway" courses and are compulsory for all CSD students regardless of concentration:

• History of Communication
• Visual Communication I & II

The remaining requirements will be determined by each student's stream.

STREAM REQUIREMENTS

Com

CSD students selecting the Com stream must fulfill the following additional requirements:

• Forms of Journalism
• Communication Theory
• Media Evolution
• Media Ethics
• Methodology

Com students must also take 2 studio electives and any 4 additional electives in CSD.

ComD

Students choosing the ComD stream must complete the following additional requirements:

• 4 Com D studios covering Illustration, Typography, Interaction Design, and Photography
• 2 studios specializing in either Illustration, Interaction Design, or Moving Images
• 4 ComD studio electives
• 2 seminars in Design Theory/History

Mov

Students choosing the Mov stream must complete the following requirements:

• Storytelling and Scriptwriting
• Directing
• Cinematography
• Producing for Film
• Producing for Television
• Production Design
• Post-production
• Video Journalism
• Documentary Filmmaking
• Animation & Special Effects
• History of Film
• Film Theory

Additional Expectations

Specialization is important to attain excellence in a given field, but it is equally necessary for students to be able to deal with the multimedia, multicultural, and multi-skilled reality of today. We therefore encourage them to experiment and engage with new methods of media-making by taking elective courses in each of the streams. This gives them the skills and instills the confidence required to combine different media. It is recommended that students choose these courses in consultation with their advisor.

All CSD students are also required to undertake a two semester capstone project that they will design and complete under the supervision of their faculty advisor. The range of possible capstone projects is nearly infinite, but it should be noted that, especially in the ComD and Mov streams, the capstone project is likely to be studio-based.

Alongside their specialized training, CSD students are required to take courses outside their major to facilitate a broad exposure to knowledge.

Course Category	Number of Courses to complete		
	Com	Com D	Mov
University Requirements			
University Core	9	9	9
Jahan-e-Urdu	1	1	1
Creative Practice	1	1	1
Communication Studies & Design Major Requirements			
Introductory Theory/History	1	1	1
Introductory Studios	2	2	2
Stream Studios	0	6	1
Studio Electives	2	4	0
Theory/History Seminars	8	2	0
CSD Electives	4	0	2
Senior Thesis/Capstone Project	2	2	2
Arts, Humanities, and Social Sciences			
Social Development and Policy Electives	2	2	2
Free Electives			
Any AHSS or SSE*	4	6	4
Overall			
	36	36	36

COURSE DESCRIPTIONS

FALL 2015

CSD 103: Visual Communication I

Visual Communication is a two-semester-course introducing AHSS students to all three streams of the CSD program and will focus on visual forms of communication including body language, writing, fashion, design, and the moving image. Each semester of the course will be divided into three modules representing Communication Studies, the Moving Image and Design. The theme of Visual Communication I is the representation of reality.

CSD 105: Gender and Media

Description unavailable at time of printing.

CSD 115: The Possibilities of Poetry

In this course we will read a selection of poems from different historical periods and with different formal and stylistic qualities in order to discover the various possibilities that poetry holds. Along with close readings and in-depth discussions of the poems, the course will introduce students to critical appreciations and reflective and theoretical writings on poetry. We will think about the manifold approaches to reading and thinking about poems that exist for us today, and some that were prominent in the past, as well as about debates about the nature, value and uses of poetry.

CSD 215: Matlab...Introduction to Semiotic Analysis

Humans make sense of and communicate about the world they experience through complex systems of representation. These signs and symbols are necessarily an abstraction of the world they are meant to represent. Semiotics, the study of sign systems, has its contemporary origins in the writings of the linguist Ferdinand de Saussure and philosopher Charles Sanders Peirce, through whose work semioticians have tried to understand the systems of representation underlying human culture and communication. In this course we will focus on the application of sign theory to the study of media, myths, and political discourse in order to explore how semiotic concepts can be used to analyze human culture and expression.

Cross-listed as SDP 215

CSD 221: Communication Design I

This course, and its companion course Communication Design II, explores the organization of words and images through elements and principles of design. Students will research and execute conceptually driven visuals using illustration, photography and typography. This 6-hour studio class will be divided between lecture, visual experiments and critique. Design assignments will introduce and implement computer and print technology for creative problem solving.
Pre-requisites: CSD 121, CSD 122

CSD 223: Theory of Design

Description unavailable at time of printing.

CSD 241: Film Production I

Film Production I is a continuation of Guerilla Filmmaking (CSD 142). Students will be taken through the post-production process and will complete the film shot during CSD 142. They will learn color correction, laying music tracks, recording foleys and effects, and mixing sound.

Pre-requisites: CSD 142; non-CSD majors by instructor permission

CSD 271: Literary Journalism

Literary journalism combines the rigor and reporting of journalism with the techniques of style, structure, and character of essays and fiction. Though its historical home is in East Coast American periodicals such as The New Yorker and Harper's Magazine, literary or "long-form" journalism has been the subject of growing interest across the Anglophone world,

with notable newcomers like Delhi's The Caravan, and increasing examples in Pakistani stalwarts like The Herald. This advanced seminar will introduce students to the fundamentals of literary journalism, and guide them through the process of developing their own long-form work.

SPRING 2016

CSD 104: Visual Communication II

This is a continuation of Visual Communication I. As in the first semester, the course will be divided into three modules, one representing each stream. Where the theme of Visual Communication I was the representation of reality, the focus of Visual Communication II is the representation of fiction, or 'unreal reality'.

Pre-requisites: CSD 103

CSD 120: Reading Virginia Woolf

Reading Virginia Woolf's work gives us a unique opportunity to reflect on enduring questions in literary studies. In this course we will focus on her novel To the Lighthouse (1927), selected short stories and non-fiction prose. We will explore her work's radical, poetic, and formally innovative qualities; its attention to the body and sensation; its re-imagining of women's intellectual and emotional agency, and its engagement with its own sociopolitical context. We will read critical, historical and biographical texts that help us understand the insights and limitations of Woolf's path-breaking work. The course will also ask how we, as readers situated in a different context, might continue to read (and think with) her work in a meaningful way. Topics that will receive special emphasis include: literary movements (modernism and Bloomsbury), reading and publics, formal innovation and its meanings, gender and sexuality, nationalism and imperialism, media, etc.

CSD 182: Writing Fiction

Description unavailable at time of printing.

CSD 222: Communication Design II

Together with its companion course, Communication Design I, this course continues to examine themes related to the practice of design.
Pre-requisites: CSD 221

CSD 242: Film Production II

Students will make their own short film, from script and storyboard to budgeting, casting, set design, location scouting, filming and post-production.

Pre-requisites: CSD 142, CSD 241; non-CSD majors by instructor permission

CSD 262: Mass Media Reality

Description unavailable at time of printing.

SCHOOL OF SCIENCE &
ENGINEERING

Faculty Members:

Dr. Shoaib Zaidi,
Professor (Dean of School of Science and Engineering)
Dr. Charles Timothy Spracklen,
Professor (Dean of Research and Continuing Education)

Computer Science:

Dr. Waqar Saleem,
Assistant Professor (Program Director)

Dr. Shah Jamal Alam, Assistant Professor
Dr. Umair Azfar Khan, Assistant Professor
Dr. Jibran Rashid, Assistant Professor

Electrical Engineering:

Dr. Muhammad Shumail,
Assistant Professor (Program Director)
Dr. Oliver Faust, Associate Professor
Dr. Syed Arsalan Jawed, Associate Professor
Dr. Mohammad Shahid Shaikh, Associate Professor
Dr. Basit Memon, Assistant Professor

Science and Mathematics

Dr. Anzar Khaliq,
Assistant Professor of Physics (Program Director)

Dr. Samina Yasmin, Assistant Professor of Chemistry
Dr. Oleg Nikolaevich Artamonov , Assistant Professor of Mathematics
Yousuf Kerai, Visiting Faculty of Mathematics

Introduction

Interdisciplinary approaches are vital to create solutions to the complex challenges faced by contemporary societies. The School of Science and Engineering (SSE) at Habib University combines liberal arts, science and engineering education to create leaders, innovators and entrepreneurs who will develop novel, indigenous ways to benefit society through the use of technology.

Vision

• A combination of comprehensive theoretical and hands-on learning
• An emphasis on undergraduate research
• A focus on aesthetics and design
• An awareness of history, society, and culture
• A seamless integration into the real world

Pedagogy

SSE curricula are developed in consultation with leading international academics taking into account the needs of the industry and will be updated frequently. Emphasis is based on project-based learning that provides a framework to strengthen fundamental concepts, cultivate creativity, teamwork, and communication skills. Undergraduate research is an integral part of pedagogy at Habib. Facilitated by well-equipped laboratories and research facilities, faculty members work closely with students. Through small class sizes and low student-teacher ratio, students have ample opportunity to engage with their professors and their research activities both within and outside the classroom.
SSE graduates will be well-rounded individuals, able to generate and integrate knowledge across disciplines. They will have a unique blend of technical competence, breadth of knowledge, passion for life-long learning, awareness of the larger implications of their work, sensitivity toward local contexts, exceptional communication and team-work skills, and entrepreneurial spirit.
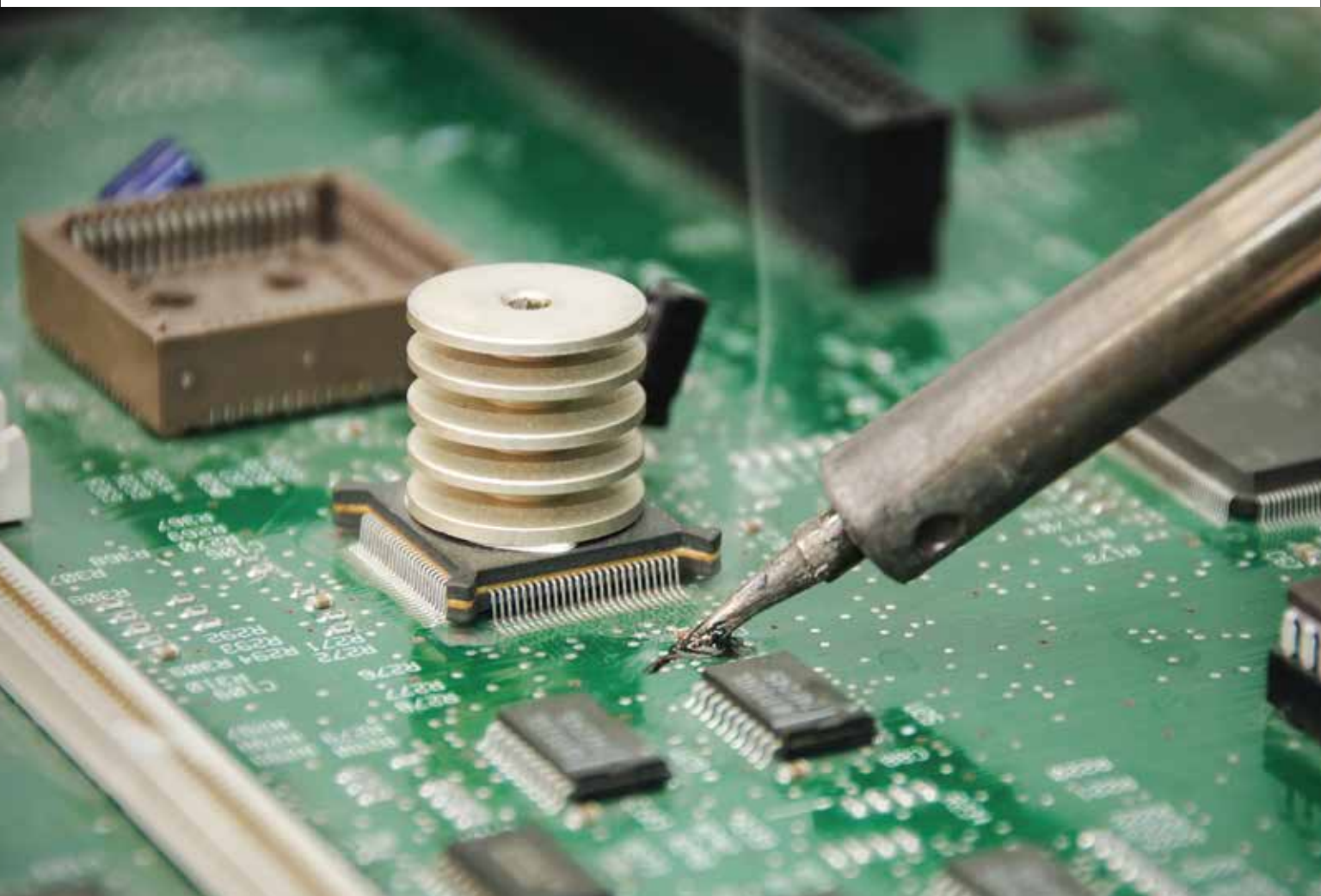
Majors and Minors

SSE offers BS degrees with majors in Computer Science and in Electrical Engineering along with opportunities to minor in Physics and Computer Science. Both BS degrees are structured as eight semesters over four years. All SSE Students take a common set of courses in their freshman year by the end of which they decide their major. The Common First Year includes courses on Mathematics, Physics, Computer Science, Electrical Engineering, and Renewable Energy as well as other courses from the Habib Core.

Electrical Engineering

Electrical engineering pervades our daily lives. Almost all home appliances and industrial machinery run on electrical power with electronics control. Communication and data transfer is implemented through electrical systems. Electrical and electronics equipment are fundamental in medical diagnostics and surgical treatments. More and more vehicles running on electrical power are showing up on the roads. Furthermore, electrical engineers are involved in instrumentation, process control, and automation activities, which are the hallmark of all modern industries and technical facilities – ranging from consumer-product manufacturing to medical diagnostics and particle accelerators.

Academic Program

The Electrical Engineering (EE) program combines a rigorous science and engineering education with the liberal arts. It provides students with technical knowledge in Mathematics and Sciences, Computation, Electronics, Electrical Power Systems, Electromagnetics, Telecommunication Systems, Automation and Control Systems, etc. The program is ideally suited to students who:

• like to study Mathematics and Physics and are curious about how electrical and electronic systems work
• are eager to become critically conscious and environmentally responsible engineers of the 21st century
• are ready to help solve Pakistan's current energy crisis
• are fascinated by the sheer power of electrical energy for sustaining the economy
• are interested in designing and building the next generation of mobile communication networks

• want to learn more about embedded systems that are at the heart of many of our home appliances
Fundamental EE courses are offered from the very first semester. Technical breadth is provided through courses from natural sciences, mathematics and computer science, which are interspersed throughout the program. In the junior year, students opt for a thrust area defined through the choice of higher-level electives. The final year includes a year-long Capstone Design Project (CDP) which may be undertaken in collaboration with the industry.

Program Educational Objectives

Students graduating from the EE program will:

• Carry out mathematical analysis of complex problems and systems
• Design complex engineering systems and define engineering protocols
• Perform cutting-edge research in any field of depth that involves electrical engineering
• Be aware of engineering implications of contemporary economic, social, and environmental
• Be ethically responsible and have professionalism
• Have essential hands-on expertise for engineering practice
• Think independently and have entrepreneurial spirit
• Have sound communication and managerial skills
• Have ability to work in multidisciplinary teams

Student Learning Outcomes

At the time of graduation, the EE students will have following abilities:

• Foundational knowledge of engineering mathematics and applied physics
• Sound grasp on various programming, analysis, and simulation software
• Solid breadth in electrical and general engineering
• Technical report writing and communication skills
• Professional experience in industry and the corporate sector through internships
• Information about local and global problems that ask for smart engineering solutions
• Awareness of requirements and expectations of various electrical engineering jobs
• Detailed theoretical and practical knowledge of at least one major area which could serve as a base for graduate studies in the globally highest-ranked schools of science and engineering

Requirements for the Major

A major in Electrical Engineering requires satisfactory completion of at least 138 credit hours of coursework as shown in the table below:

Course Category	Number of Courses to complete			Credit Hours
	Total	Compulsory	Elective	
University Requirements				
Liberal Core	10	10	0	32
Local Languages	1	1	0	3
			Total	35
Non Engineering Courses				
Economics and Management	2	2	0	4
Mathematics	4	4	0	12
Natural Sciences	2	2	0	8
			Total	24
Non Engineering Courses				
General Engineering	3	3	0	8
Computer Systems	2	2	0	7
Digital	3	3	0	12
Analog	3	3	0	12
Signal and Systems	3	3	0	10
Technical Electives	6	0	6	18
Interdisciplinary Electives	2	0	2	6
Capstone Design Project	2	2	0	6
			Total	79
Overall	43	35	8	138

Program Plan

The eight-semester BS in EE program is delineated in the following figure.
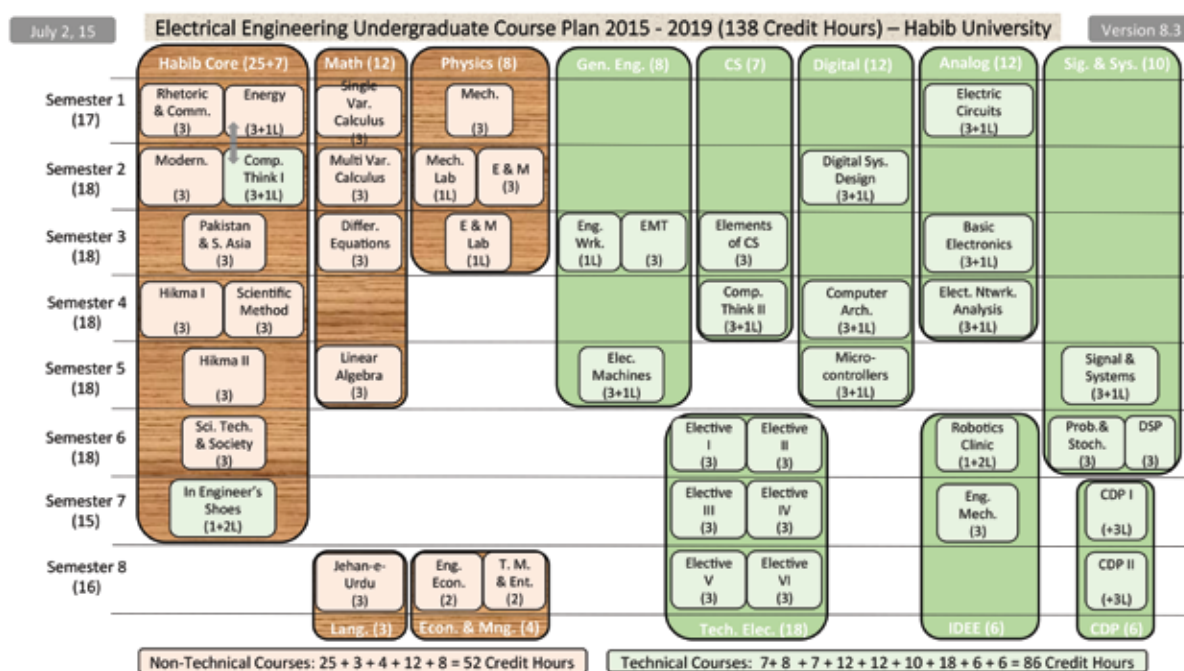
Program Thrusts

Students majoring in EE must choose a thrust which may be chosen from the following areas or custom defined in consultation with their academic advisor. Usually three elective courses from a thrust area must be taken to fulfill its requirement.

• *Telecommunications*

Cellular mobile phone networks, satellite and fiber-optics communication systems, and global positioning systems are playing a fundamental role in increasing the quality of life and improving the efficiency of the service sector. A well-knit telecommunications infrastructure is essential for the economic development of a country. In Pakistan we are witnessing the introduction of 4G LTE cellular phone systems, proliferation of data networks, and a shift towards electronically facilitated services by both the public and private sector. Our telecommunications major program is intended to sustain the positive growth in this industry by providing adequately trained technical managers, leaders, and entrepreneurs.

• *Modern Power Systems*

Electric power is the main driving factor for the industrial progress of a country. Many consumer products and home appliances are dependent on the ready availability of electrical power at an affordable price. Due to economic pressures and market competitions there is a global drive to modernize the existing power generation and distribution systems. Smart methodologies are sought to integrate electronics with the high power electricity network for more efficient control and monitoring. Moreover, given the current energy crisis of Pakistan, there is an even more pronounced local need of power system specialists. The thrust area of modern power systems is designed to train electrical engineers who would come up with innovative ways to face this challenge.

• *Electronics and Embedded Systems*

Electronic circuits and embedded systems are ubiquitous in consumer, industrial, automotive, medical, commercial, and military applications. Even the systems that were conventionally purely mechanical are now having more and more electronics incorporated into them for the sake of efficiency, monitoring, and control. This trend of 'electronification' of society, coupled with the inexpensive availability of powerful embedded systems, opens up a huge valley of opportunities for electronic engineers and entrepreneurs. The thrust area of electronics and embedded systems is designed for such students who would like to flourish and lead in this valley.

Computer Science

The Computer Science program delivers a theoretical and practical understanding of the principles behind the numerous computer systems integral to our everyday lives. The core Computer Science curriculum is designed to engage students with diverse interests. It ensures that students gain a computational thinking perspective which enables them to innovate and contribute in fields ranging from natural sciences and engineering to social sciences and philosophy. The emphasis on the foundations of Computer Science allows students to not only gain familiarity with current systems but to apply their knowledge of Computer Science to solve new and unseen problems. Graduating students will find themselves well placed for positions across economic sectors including information technology, health, commerce and banking, and government.

Graduates will be equally well-equipped to start their own technology oriented businesses or pursue graduate studies.

Academic Program

The curriculum approaches Computer Science as the study of algorithms and data structures - their formal properties, their linguistic and mechanical implementations, and their applications. Necessary training in abstract, logical thinking and scientific method is provided through courses from Mathematics and Natural Sciences. A set of Foundation courses serve as preparation for Computer Science Core courses on algorithms, data structures, and computation. Further Computer Science electives offer the opportunity to explore specific aspects of Computer Science theory and implementation. Three of the Computer Science electives have to be taken so as to fulfill a Thrust requirement in a particular application area of Computer Science (more on Thrusts on p. 43).

A practical understanding of theoretical concepts is delivered through the lab and project components of courses. A year-long Capstone Project in the senior year encourages the application of acquired knowledge and skills to solve a real world problem. Through a large number of electives, there is room for exploration both within SSE and across schools at the University.

Program Objectives

Knowledge and Career: Graduates will have strong foundational knowledge of mathematics and computer science, and the accompanying skills, both in breadth and in depth, to position themselves equally well in the Information Technology industry, as technology entrepreneurs, and/or in graduate programs in Computer Science or other technical and scientific fields.
Continuous Learning: Graduates will have a hands-on approach to self-learning and research, and will continually update their knowledge, skills and technical know-how.
Ethics and Awareness: Graduates will be able to assess the societal, cultural, social, religious, legal, environmental, local, and global impact of their actions and will choose an ethical course of action in their professional, personal and daily lives.
Communication and Teamwork: Graduates will be able to effectively communicate and collaborate with people from diverse backgrounds and in a variety of settings.

Student Outcomes

Upon graduation, students will have the following abilities:

Analysis: analyze a given situation and reduce it to one or more problems that can be solved via computer intervention.
Design: design one or more computer-based solutions of a given problem and select the solution that is best under the circumstances.
Programming: program a given solution in a variety of programming languages belonging to different programming paradigms.
Implementation: design and implement software systems of varying complexity.
Tools: work with the latest tools that support development, e.g. IDE's, version control systems, debuggers, profilers, and continuous build systems.
Self-learning: research, learn and apply the requirements needed to implement a solution for a given high level problem description.
Ethics and Awareness: foresee both impact and possible ramifications of computing practices.
Communication and Teamwork: work effectively in inter-disciplinary teams.

Course Major and Minor

Students enrolled in the Computer Science department will graduate with a major in Computer Science. Students who do not have Computer Science as a major have the option to minor in Computer Science.

Requirements for the Major

A major in Computer Science must fulfill the following requirements with an earned grade of at least C+ in each of the courses in the Computer Science and Support categories.

Course Category	Number of Courses to complete			Credit Hours
	Total	Compulsory	Elective	
University Requirements				
Habib Core	10	10	0	32
Local Languages	1	1	0	3
			Total	35
Computer Science				
Foundation	3	3	0	11
Core	3	3	0	9
Logic, Languages & Programming	1	0	1	3
Theory	1	0	1	3
Software Systems	1	0	1	3
Thrust	3	0	3	9
Electives	2	0	2	6
Capstone Project	2	2	0	6
			Total	50
Support				
Mathematics	5	5	0	15
Science & Engineering	4	4	0	13
			Total	28
Electives				
Arts, Humanities and Social Sciences	1	0	1	3
Digital Humanities and Social Sciences	2	0	2	6
Electrical Engineering	1	0	1	3
Free Electives	4	0	4	12
			Total	24
Overall	45	29	16	137*

* actual credits may vary based on elective choices.

Requirements for the Minor

A minor in Computer Science will be awarded to students from other departments who earn a grade of at least C+ in each of the following courses.

• CS 110, CS 111, and CS 132
• Any 2 courses from the "Core" category (see p. 43)
• Any 2 other CS courses, 200-level or higher (see pp. 50-51)

Program Thrusts

Four Program Thrusts are defined in the following areas:

• Information Security

Computers are increasingly used to store, process and communicate sensitive information. They are also heavily used in the infrastructure and strategic assets of many countries. Increasingly users do not have control over where their data is stored and on the communication channels transmitting the data. Even if they do, third parties can gain access to computing resources and steal, monitor or corrupt data or interrupt communication for malicious purposes. Data may even be lost to natural disasters. Information Security is an emerging area that deals with keeping data and communication safe from loss and intrusion.

• Cloud Computing

Cloud Computing is an emerging paradigm in computing that enables the migration of services and infrastructure to remote servers accessible over the Internet. In other words, users can store data, run software and even develop new software on the Internet. The Cloud Computing thrust will explore the systems and processes that make these services possible. Some of the questions include: how can services be made available over a network connection, how can multiple systems in multiple locations work together to deliver the same service, how should data be stored so that it is available instantly from anywhere?

• Big Data

Computing resources are getting cheaper. As a result, huge stores of information are becoming common, e.g. medical records, data on collision of sub-atomic particles, social networking habits. Big Data is the term used to describe the study of dealing with such huge amounts of data – filtering it, storing it, searching through it, categorizing it, detecting trends and patterns, making recommendations based on it, summarizing it, and presenting it in human friendly ways.

• Computer Graphics & Visualization

In most cases, information is best understood when presented visually. Visualization is the study of presenting potentially large amounts of data in a format that is visually appealing and faithful to the underlying data. The aim is to present a summary, highlight salient features and enable detailed exploration. Computer Graphics is the study of computer created visual objects: creating them (3D modeling and scanning), manipulating them (animation and editing), interactively controlling them (computer games), specifying their behavior (simulation), and displaying them (rendering, GPUs).

Every student majoring in Computer Science must choose a Thrust which may be chosen from the above or self-defined in consultation with her academic advisor.

Course Category	Course Selection
Computer Science	
Foundation	CS 111 Computational Thinking II CS 130 Digital Logic and Design CS 132 Elements of Computing Systems
Core	CS 200 Data Structures and Algorithms CS 212 Theory of Computation CS 310 Design and Analysis of Algorithms
Logic, Languages & Programming (at least one course must be attempted)	CS 222 Programming Languages CS 226 Parallel Programming CS 323 Advanced Programming Techniques others as designated

Course Category	Course Selection
Computer Science	
Theory (at least one course must be attempted)	as designated
Software Systems (at least one course must be attempted)	CS 330 Operating Systems CS 353 Software Engineering others as designated
Thrust: Information Security	as designated
Thrust: Cloud Computing	as designated
Thrust: Big Data	CS 355 Databases others as designated
Thrust: Computer Graphics & Visualization	CS 340 Computer Graphics others as designated
Hardware Systems	CS 332 Computer Architecture and Design others as designated
Applications	CS 351 Artificial Intelligence CS 357 Numerical Methods others as designated
Electives	Any CS course.*
Capstone Project	CS 491 Capstone Project I CS 492 Capstone Project II
Support	
Mathematics	MATH 101 Applied Calculus MATH 102 Differential Equations MATH 205 Linear Algebra MATH 210 Probability and Statistics
Science & Engineering	ENGR 191 Engineering Workshop I EE 111(L) Electrical Circuit Analysis (Lab) PHY 101(L) Mechanics and Thermodynamics (Lab) PHY102(L) Electricity, Magnetism and Optics (Lab)
Electives	
Arts, Humanities and Social Sciences (at least one course must be attempted)	Any course offered by School of Arts, Humanities and Social Sciences and chosen in consultation with advisor.*
Digital Humanities and Social Sciences (at least two courses must be attempted)	Any course from School of Arts, Humanities and Social Sciences cross-listed with Computer Science.*
Electrical Engineering (at least one course must be attempted)	Any EE course.*
Free Electives	Any course offered at the University except 100 level CS courses.*
*provided any prerequisites are met	

Details of University required courses are given in the section on the Habib Core (see pp. 21-26).

INTEGRATED SCIENCES AND
IMATHEMATICS (iSciM)

Habib University's School of Science and Engineering deeply integrates mathematics and natural sciences in its four-year program. A strong emphasis is placed on the fundamentals of physics and mathematics in order to create a thorough understanding of their nature and application.

Currently four courses in mathematics and three in integrated sciences are offered. All integrated science courses are supplemented with labs. These courses are offered in the following sequence.

	Fall	Spring
Year 1	Renewable Energy, Mechanics, Calculus I	Electricity and Magnetism, Mechanics and Thermodynamics lab
Year 2	Differential Equations, Electricity, Magnetism and Optics Lab	Calculus II
Year 3	Optional 1 (for minor requirements)	Linear Algebra
Year 4	Optional 3 (for minor requirements)	Optional 2 (for minor requirements)

The renewable energy course is the flagship course of integrated sciences taught by multiple faculty members from different disciplines and is offered as a part of the Habib University Core (see pp. 21-26).

EDUCATIONAL OBJECTIVES

iSciM strives to develop:

• the appreciation of the unique role of natural sciences and mathematics in the evolution of human thought
• an understanding of systems and their mutual interactions in contrast to mere content based information
• an appreciation of the ability of mathematics to explain the beauty of nature
• the confidence to apply acquired knowledge of natural sciences and mathematics in various disciplines that may involve cross-disciplinary research and open-ended projects
• a hands on approach to scientific problem solving

STUDENT OUTCOMES

Through iSciM, the graduating Habib students will have:

• designed and conducted experiments from various science disciplines
• strong understanding of the fundamentals of Physics, Energy and Mathematics
• skills in data analysis via the usage of multiple software tools
• a strong grasp on scientific writing
• the ability to understand current research in various fields of science
• read some selected classical scientific literature

PHYSICS MINOR :

This minor is designed to open the opportunity for students to deepen their understanding of Physics. This will provide a foundation for a broader range of technical fields enhancing their ability to keep abreast of an ever-changing technological world. Depending on the choice of optional courses, a minimum of 20-23-credit hours are required to qualify for the minor.

The minor has two parts:
1.   *Four Physics Core Courses + 2 Labs (14 credit hours)*

Core Courses	Credit Hours
Mechanics	3
E&M	3
Modern Physics	3
Quantum Mechanics I	3
Mechanics Lab	1
E&M Lab	1

2.   *Three Optional 300 / 400 level courses (6-9 credit hours).*

Students can choose the optional courses from a pool of available courses listed below. The list of optional courses will be revised on yearly basis.

Core Courses	Credit Hours
Classical Mechanics	3
Solid State Physics	3
Optics	3
Mathematical Methods for Physics	3
Quantum Mechanics II	3
Statistical Physics	3
General Relativity	2
Astro Physics	2
Computational Physics	3
Solid State Devices	3
Introduction to Nano science	2
Functional Surfaces	2
Quantum Optics	3

A minimum of 5 students is required to offer a course. In a case where fewer students enroll, individual study courses will be offered.

COURSE DESCRIPTIONS

SCIENCE

PHY 101. Physics I: Mechanics. (2-3). Credit 3.

Explores principles of classical mechanics; topics include: momentum, motion in a plane, relative inertial frames and relative velocity, straight-line kinematics, particle dynamics with force, conservative forces, potential energy and conservation of energy, conservation of momentum, center of mass and the center of mass reference frame, rigid bodies and rotational dynamics, conservation of angular momentum, central force motions, impulse and collisions, dynamics of rotational motion, gravitation and fluid mechanics.

PHY 102. Physics II: Electricity & Magnetism. (2-3). Credit 3.

Topics include: electromagnetism and electrostatics, electric charge, Coulomb's law, electric field, Gauss's law, electrostatic potential, magnetic fields, Biot-Savart law and Ampere's law, magnetic materials, time-varying fields and Faraday's law of induction, Hall effect, displacement current and Maxwell's equations.
Prerequisite: PHY 101

SCI 200 Scientific Method. (1-3). Credit 2.

Introduces students to the scientific method; illustrates how the scientific method is applied in various disciplines – chemistry, physics, energy and computer science.

MATHEMATICS

MATH 012. Pre-Calculus. (3-0). Credit 3.

This course will start with an introduction to number systems and will quickly follow with the idea of Relations and their subset, Functions. Polynomial Functions will then be studied symbolically, graphically and numerically and topics such as Domain and Range, Function Composition, Function Transformations and Inverse Functions shall be introduced using the Polynomials. These ideas will then extend to Square-Root Functions, Rational Functions, Exponential Functions and their inverses, Logarithmic Functions, after which Trigonometry and Trigonometric Functions will get an extensive treatment in the course. Towards the end of the course, students will deal with analyzing functions, both symbolically, numerically and graphically, discussing ideas such as end-behavior, asymptotes, discontinuities and modeling functions to fit real data.

MATH 101. Applied Calculus. (3-0). Credit 3.

Topics include: functions, limits and continuity, total and partial derivatives and their geometrical interpretation, application to tangent and normal, linearization, maxima/minima, limits of indeterminate forms, methods of integration, improper integrals, multiple integrals, application to arc length, area, volume, introduction to vectors, vector differentiation, vector integration and their applications, gradient, divergence and curl with their applications.

MATH 102. Differential Equations. (3-0). Credit 3.

Topics include: first order ordinary differential equations (ODEs), homogeneous and non-homogeneous linear ODEs, differential operator, Cauchy-Euler equation, ODE models of electric circuits, systems of ODEs, series solutions, partial differential equations (PDEs), method of separation of variables, wave, heat and Laplace equations, solutions using Fourier and Laplace transforms.
Prerequisite: MATH 101.

MATH 203. Complex Variables and Transforms. (2-0). Credit 2.

Topics include: complex numbers, DeMoivre's theorem, complex variables and complex functions, analytic functions, harmonic functions, Cauchy-Riemann equations, Laurent series, singularities, poles, residues and contour integration, line and surface integrals, Green's and Stoke's Theorem and applications, Fourier Series, Fourier Transform, Laplace Transform, Z-Transform.
Prerequisite: MATH 102.

MATH 210. Probability and Statistics. (3-0), Credit 3.

Provides an introduction to data analysis, probability and decision making; introduces students to some of the commonly used statistics software packages; topics include: descriptive and inductive statistics, analysis of variance, limit theorems, regression and correlation, hypothesis testing and confidence intervals, sampling, probability, independence and conditional probability, binomial, geometric, gamma, Poisson and Gaussian distributions, Bayes' theorem and Bayesian inference, law of large numbers, random processes and variables, joint random variables, cumulative and probability distributions, moments, joint and conditional distributions, discrete- and continuous- time queuing systems, Markov chains, transition probabilities, and steady-state distribution.

MATH 205. Linear Algebra. (3-0). Credit 3.

Topics include: vectors, field and vector spaces, matrices and determinants, elementary row and column operations, rank and inverse, linear transformation, systems of linear equations and their solutions, orthogonality, least squares, eigenvalue and eigenvectors, singular value decomposition, lines and surfaces in 3D.

MATH 291 Numerical Methods and Simulation. (0-3). Credit 1.

Explores numerical techniques for mathematical computations; topics include: floating point number system, error analysis, roots of equations, interpolation, numerical differentiation and integration, solution of systems of linear equations, least squares, eigenvalues, eigenvectors, solution of ordinary and partial differential equations, simulation models, Monte Carlo simulation, applications.
Prerequisite: MATH 102; MATH 205.

SSE

MGMT 201. Technology Management and Entrepreneurship. (2-0). Credit 2.

Topics include: managing technological transitions, intellectual property, creating and managing an innovative organization, managing research and development, organizational learning, economist and sociologist views of entrepreneurship, the process and management of entrepreneurship, the importance of innovation, teamwork, financial and marketing aspects, product quality; study will be supplemented with case studies.

ECON 201. Engineering Economics. (2-0). Credit 2.

Topics include: time Value of Money, cash flow analysis and inflation, methods of evaluating investments, comparison of alternative investments, economic analysis of projects, management of engineering projects, team building, quality leadership.

ELECTRICAL ENGINEERING

EE 111. Electric Circuit Analysis. (3-3). Credit 4.

Basic circuit elements, circuit laws, network reduction, node and mesh analysis, energy storage elements, transient and sinusoidal steady state analysis, AC energy systems, magnetically coupled circuits, the ideal transformer, polyphase circuits, computer applications in circuit analysis.
Prerequisite: college level physics.
Term: Fall | Credit Hours: 4 (3 + 1L)

EE 171. Digital Logic and Design (cross-listed with CS 130)

Introduction to the design of digital hardware, realization of computation with logic gates, Boolean algebra, design of combinational logic circuits, analysis and design of clocked sequential logic circuits, circuits for arithmetic operations, introduction to hardware description language and its application to logic design.
Term: Spring | Credit Hours: 4 (3 + 1L)

ENGR 191. Engineering Workshop

Use of general hand tools, use of lathe, milling, drilling, and cutting machines, pneumatic controls, soldering and de-soldering, PCB development, use of software SolidWorks and Proteus, specific projects like building power supply, oscilloscope, function generator etc.
Term: Fall | Credit Hours: 1 (1L)

EE 241 Electromagnetic Theory (EMT)

Divergence and Stokes theorems, Maxwell's equations, electrostatics, magnetostatics, time varying fields, propagation of electromagnetic waves, boundary conditions at the interfaces, waveguides, resonant cavities, introduction to transmission line theory.
Prerequisite: PHY 102, MATH 102.
Term: Fall | Credit Hours: 3 (3)

EE 211 Basic Electronics

Introduction to semiconductors and energy bands, PN junction diodes, bipolar junction transistors (BJTs), field effect transistors (FETs), metal-oxide-semiconductor field effect transistors (MOSFETs), biasing circuits, single transistor amplifiers and their frequency response, electronic circuits using operational amplifiers, simulations using OrCAD.
Prerequisite: EE 111.
Term: Fall | Credit Hours: 4 (3 + 1L)

EE 271 Computer Architecture (Cross-listed with CS 330)

Central processing unit (CPU), data representations, instruction sets, fundamentals of assembly language, microprogramming, memory systems, input-output (I/O) structures and interfaces, direct memory access (DMA), interrupt.
Prerequisite: CS 132, EE 171.
Term: Spring | Credit Hours: 4 (3 + 1L)

EE 272 Electric Network Analysis

Transformers, power networks, power factors, representing a circuit with a matrix of parameters, Bode plots, basic Fourier and Laplace transforms.
Prerequisite: EE 111, MATH 101
Term: Spring | Credit Hours: 4 (3 + 1L)

EE 3xx Electric Machines

Magnetics, introduction to induction motor and generator action, three phase and single phase induction motors, brushless DC motors, stepper motors, synchronous motors, synchronous generators, dissection of a motor and generator, building one's own motor and generator.
Prerequisite: Physics 102
Term: Fall | Credit Hours: 4 (3 + 1L)

EE 375 Microcontrollers and Interfacing

Introduction to microcontrollers; overview of applications and major families; architecture and assembly language programming, addressing modes and instruction set; timer programming, interrupt programming, Interfacing I/O devices; sensing, ADC and DAC; isolation techniques; applications such as stepper and DC motors; serial communication with microcontrollers using industry standard buses.
Prerequisite: EE 272
Term: Fall | Credit Hours: 4 (3 + 1L)

EE 351 Signals and Systems

Types of signals; unit impulse and unit step functions; linear time invariant (LTI) systems and their properties; convolution sum and convolution integral; Fourier series, Fourier, Laplace and Z transforms; analysis and characterization of LTI systems using various transforms. Matlab would be used to practice various concepts.
Prerequisite: MATH 203
Term: Fall | Credit Hours: 4 (3 + 1L)

ME 3xx Robotics Clinic

Application of programming, feedback, and control to microcontrollers, electronics, and sensors to build automotive systems and robots.
Prerequisite: EE 375
Term: Spring | Credit Hours: 3 (1 + 2L) | Interdisciplinary engineering elective (IDEE)

EE 352 Probability and Stochastic Processes

Set theory and counting principles, axiomatic definition of probability, independence and conditional probability, Bayes' theorem, random variables (RVs), probability distribution functions (PDFs), cumulative distribution function (CDFs), joint RVs, limits theorems, introduction to stochastic processes.
Prerequisite: EE 375
Term: Spring | Credit Hours: 3 (3)

EE 353 Digital Signal Processing

Sampling theory, introduction to digital signal representations in time and frequency domains, signal manipulations via filters and resampling, theory of digital filters, signal creation and capture, processing with real-time computing machinery.
Prerequisite: EE 351, EE 352
Term: Spring | Credit Hours: 4 (3 + 1L)

EE 4XX In an Engineer's Shoes

This is creative practice course which would be offered to non-engineering and engineering students alike. The governing principles of this course are: understanding how stuff works, reverse engineering, remodeling an existing device to serve a specific purpose, build something cool from scratch, and design aesthetics. The students will get to know how it feels to be in an engineer's shoes. The faculty may come up with a specific theme for this course every year. The course instructors would closely mentor the students and encourage them to work in teams to design

and develop a substantial project based on some off-the-shelf microprocessor systems and simple devices.
Term: Fall | Credit Hours: 3 (1 + 2L) | A creative practice course. Habib core elective.

ME 4XX Engineering Mechanics

Engineering drawing, thermodynamics.
Prerequisite: Physics 101
Term: Spring | Credit Hours: 3 (3) | Interdisciplinary engineering elective (IDEE)

EE 491 Capstone Design Project I (CDP I)

First of a year-long sequence of two courses, represents the culmination of study towards the BS degree. Students work individually or in small teams on a project in which they utilize the knowledge acquired during the first three years of education. Each project is closely supervised by a faculty member and each team produces a comprehensive report at the end of the project.
Prerequisite: Approval of an EE faculty member and SSE Dean.
Term: Fall | Credit Hours: 3 (3L)

EE 492 Capstone Design Project II (CDP II)

Continuation of EE 491.
Prerequisite: EE 491, approval of an EE faculty member and SSE Dean.
Term: Spring | Credit Hours: 3 (3L)

Proposed elective courses are given below. The actual courses offered will depend upon the technology trend, available faculty, and the number of students opting for these courses.

Telecommunication Electives:

EE XXX Computer Networks
EE XXX Communication Systems
EE XXX Digital Communication
EE XXX Satellite and Mobile Communication

Modern Power Systems Electives:

EE XXX Power Systems Analysis
EE XXX Power Electronics
EE XXX Renewable Energy Systems
EE XXX Power System Economics
EE XXX Smart Grid

Electronics and Embedded Systems Electives:

EE XXX Industrial Electronics
EE XXX Robotics & Mechatronics
EE XXX Measurement & Instrumentation
EE XXX Embedded Systems

Other Electrical Engineering Electives:

EE XXX Antenna Theory & Design
EE XXX RF and Microwave Engineering
EE 461 Control Systems
EE XXX Solid State Physics
EE XXX Quantum Mechanics for Engineers
EE XXX Optics

COMPUTER SCIENCE

CS 110. Computational Thinking I. (3-3). Credit 4.

Learning to identify problems and approach their solution in a manner that lends itself to a computer implementation; topics include: top-down and bottom-up problem solving, variables, control structures, functions, modularity, divide-and-conquer, iteration, recursion, algorithms and their expression as pseudo-code, flowcharts and program code.

CS 111. Computational Thinking II. (3-3). Credit 4.

Provides a comprehensive introduction to modern computer science; covers the mathematical foundations of Computer Science ranging from propositional logic to automata and computability; topics include: proofs, probability and randomness, recursion relations, O-notation, graph theory, quantum computing and formal methods.
Prerequisite: CS 110

CS 130. Digital Logic and Design. (3-3). Credit 4.

Introduction to the design of digital hardware, realization of computation with logic gates; Boolean algebra, design of combinational logic circuits and analysis and design of clocked sequential logic circuits, circuits for arithmetic operations; introduction to hardware description language and its application to logic design.
(Cross-listed with EE 171.)

CS 132. Elements of Computing Systems. (3-0). Credit 3.

Explores the construction of a modern, full-scale computer system from the ground up; exposure to major Computer Science abstractions studied in detail in later courses. It will home 12 implementation projects focusing on building the hardware platform and software hierarchy of a computer system.
Prerequisite: CS 111

CS 200. Data Structures and Algorithms. (3-0). Credit 3.

Study of common data structures: singly and doubly linked lists, skip lists, binary search, B-trees and tries, self-balancing trees (AVL, red-black, splay), heaps and treaps, binomial and Fibonacci heaps, graphs and minimum spanning trees, LIFO/FIFO structures (queues and stacks), priority queues, maps, multi-maps and hash tables, conflict resolution in hashing.
Prerequisite: CS 111

CS 212. Theory of Computation. (3-0). Credit 3.

Investigates the nature and limits of computation. The topics include: finite automata, regular expressions, context-free grammars, Turing machines, Church-Turing thesis, decidability, halting problem, reducibility, time and space measures, complexity classes, P vs. NP.
Prerequisite: CS 111

CS 222. Programming Languages. (3-3). Credit 4.

Evaluates the strengths and weaknesses of various programming languages, and considers at least two different programming languages. The topics include: functional, procedural, imperative, generic, and structured programming, parallel programming and concurrency control, web programming, meta and generic programming, compiled and interpreted languages, lambda calculus and anonymous functions.
Prerequisite: CS 111

CS 226. Parallel Programming. (3-3). Credit 4.

Discusses the theory and practice of interacting software and hardware entities, and arising problems such as stable failures; uses the theory of formal methods to provide deep insights into the nature of stable failures; uses programming examples that range from basic two node networks to highly complex software constructs for big data processing.
Prerequisite: CS 111

CS 310. Design and Analysis of Algorithms (3-0). Credit 3.

Introduces basic algorithms, analysis and complexity of algorithms, and the concept of NP-completeness; topics include: algorithm analysis, asymptotic complexity, recurrence, and O-notation, equivalence of iteration and recursion, head and tail recursion, stack unwinding, pre- and post- conditions, bubble, insertion, quick, heap, shell, and q- sort, post-, pre-, and in- order traversal, depth- and breadth- first traversal, Dijkstra's, Prim's and Kruskal's algorithms, Bellman-Ford and Floyd-Warshall algorithms, Huffman coding and Burrows-Wheeler transform, Rabin-Karp and KMP algorithms, Fourier transform and FFT, parallel algorithms, Amdahl's and Gustafson's laws, Karp-Flatt metric, Knapsack problem and TSP, dynamic programming, NP-completeness.
Prerequisite: CS 200, MATH 210,

CS 323. Advanced Programming Techniques. (3-3). Credit 4.

Introduces object orientation, generic programming, and the use of standard libraries; topics include: data abstraction and encapsulation, objects, classes, and instances, inheritance, virtual functions, abstract classes and polymorphism, templates and compile-time code generation, exception handling, concurrency and thread safety, containers and iterators, function objects (functors) and function pointers, functions on ranges; laboratories further cover code style conventions and automatic documentation generation.
Prerequisite: CS 200

CS 330. Computer Architecture and Design. (3-3). Credit 4.

Central processing unit: organization, instruction and data representations; fundamentals of assembly language; microprogramming; memory systems and I/O interfaces; I/O structures; direct memory access; interrupts. (Cross-listed with EE 371.)
Prerequisite: CS 132, CS 130/EE 171.

CS 332. Operating Systems. (3-3). Credit 4.

Provides an understanding of the basic components of a general purpose operating system; topics include: multi-user systems, process and CPU management, multi-threading, kernel and user modes, cooperative processes, synchronization, concurrency, threads, and deadlocks, memory management, virtual memory, relocation, external fragmentation, paging and demand paging, secondary storage, security, and protection, file systems, I/O systems, distributed operating systems, scheduling and dispatch; laboratories provide hands on experience with different operating systems; project on the design and implementation of a piece of system software.
Prerequisite: CS 132, CS 200

CS 340. Computer Graphics. (3-0). Credit 3.

Study of techniques and concepts fundamental to graphical rendering; topics include: color models, clipping, rasterization, z-buffer, the human visual system, pipeline based rendering, ray tracing, space partitioning structures, quad- oct- and kd- trees, bounding boxes and bounding volume hierarchies, collision detection.
Prerequisite: CS 200, MATH 205

CS 351. Artificial Intelligence. (3-3). Credit 4.

Study of some of the major areas of artificial intelligence: modeling, planning ,decision making, and learning; topics include: intelligent agents and expert systems, search and state space, min-max principle and alpha-beta pruning, constraint satisfaction problems, games and adversarial search, logical agents and inference, planning, uncertainty and probabilistic reasoning, clustering and classification, supervised and unsupervised learning, Self Organizing Maps, k-means, regression, and nearest neighbors, support vector machines, neural networks and genetic algorithms, reinforcement learning, boosting, and weak learning, ubiquitous computing.
Prerequisite: CS 200

CS 353 Software Engineering. (3-3). Credit 4.

Examines the fundamental principles of software engineering: planning, design, analysis, development, documenting, testing, delivery and maintenance of a software system; topics include: the software life cycle, software development models, extreme programming, and agile methodology, unit and system testing, software specification and requirements gathering, prototyping and iterative design, correctness, outsourcing and open source, user interface design and quality assurance, software quality and change management; project on the design and implementation of a large software system.
Prerequisite: CS 200

CS 355 Databases. (3-3). Credit 4.

Understanding the design and use of different databases with an emphasis on relational databases; topics include: relational, object-relational, object-oriented, hierarchical, and network database models, distributed database management systems, transaction management, concurrency control, and recovery, data storage and indexing, SQL, query processing and optimization, database evaluation and tuning, redundancy, normalization and fragmentation, data independence and integrity, security and privacy, XML, database administration, data warehousing.
Prerequisite: CS 200

CS 357 Numerical Methods. (3-0). Credit 3.

Explores numerical techniques for mathematical computations; topics include: IEEE floating point standard, error analysis, roots of equations, interpolation, numerical differentiation and integration, solution of systems of linear equations, least squares, eigenvalue decomposition and QR/SVD factorizations, solution of ordinary and partial differential equations, optimization, simulation models, and Monte Carlo simulation.
Prerequisite: CS 111, MATH 102; MATH 205.

CS 490 Capstone Project I. (0-9). Credit 3.

CS 491 Capstone Project II. (0-9). Credit 3.

Application of learned material to real world problem solving; involves the selection/identification of a real world problem, related research and analysis, implementation, deployment and evaluation of a solution.
Prerequisite: Approval of a CS faculty member and the SSE Dean.

LOCATION OF HABIB UNIVERSITY
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