

COURSE CATALOG

2016-2017



Habib University

shaping futures

DISCLAIMER:

HU COURSE CATALOGUE 2016-17

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- (a) Withdrawal or cancellation of classes, courses and programs;
- (b) Changes in fee schedules;
- (c) Changes in the academic calendar;
- (d) Changes in admission and registration requirements;
- (e) Changes in the regulations and requirements governing instruction in and graduation from the University;
- (f) Changes of instructors;
- (g) Changes of rules and regulations governing the students and student body organizations;
- (h) Changes of on-campus facilities, programs and costs for room and/or board of students;
- (I) Changes of extra-curricular student activities, programs and offerings; and
- (j) Changes of any other regulation affecting students, their parents/guardians or other interested parties.

The official version of the Habib University Course

Catalogue is updated at the start of every semester and resides on the Habib University website.

See www.habib.edu.pk/admissions/resources/academic-prospectus/

Consult the University website (www.habib.edu.pk) for further information about the University.

Catalogue produced by the Office of Marketing & Communications

HABIB UNIVERSITY COURSE CATALOG 2016-2017



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PRESIDENT'S NOTE:



WASIF RIZVI
PRESIDENT,
HABIB UNIVERSITY

A handwritten signature in black ink, appearing to read 'Wasif Rizvi'. The signature is fluid and cursive, written over a light-colored background.

First of all, Congratulations on choosing Habib University. By doing so, you have already made your mark on a momentous occasion in history: The revamping of the Pakistani Higher Education System as we know it.

Your time at Habib University will be nothing short of life-changing. You will unlearn to relearn: exposed to a multiplicity of perspectives, a plethora or resources and a robust dynamic of discussions and mentorship. You are entering this university as a blank slate, full of questions and contradictions. Your journey at Habib University will not only equip you with some answers and clear other contradictions but also teach you to ask better questions. At Habib University you will have access to distinguished faculty from around the world, cutting edge research laboratories and state-of-the-art classrooms, as well as a great richness of academic and recreational resources: all within one of the greatest university campuses in this region. Moreover, our curriculum is innovative, flexible and interdisciplinary in approach: comparable to the curricula of the great knowledge centers of the world. All learning within and beyond the classroom is collective: rooted in a diverse student body. As a Habib Lion, you will learn to establish tolerance, appreciate difference and work in teams: the perfect amalgamation of creative minds.

At Habib University, we not only aim to create leaders in every field but also engaged citizens, not only of this country but of the world. Leaders from within the people, empathetic to the local but also equipped with the global. Your learning will extend beyond the four walls of campus, with numerous opportunities to not only learn in classrooms around the world but also to bring those classrooms to Habib, technology easing distances in the world of today. Our partnerships with leading universities in the US including recent partnerships signed with Stanford University, University of Michigan and Pitzer College proved a multitude of opportunities for constant global engagement.

At the center of the Habib Experience lies 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. Yohsin is a process, a goal, a way life: embody it.

So welcome to your home for the coming four years. The journey will not be linear nor will it be easy, but the HU community of students, faculty and staff forms an unparalleled supportive environment. So go on, come join us, and let's promise to achieve greatness together.

Welcome to a new beginning. Welcome to a turning point.
Welcome to Habib University.

ACADEMIC CALENDAR 2016 -2017

FALL SEMESTER 2016

| | |
|--------------------------|--------------------------------|
| First Year Orientation | August 15 - 20 |
| First Day of Classes | August 22 |
| Add/Drop Period | August 22 - September 1 |
| Eid-ul-Adha* | September 13 - 15 |
| Last day to DROP classes | September 26 |
| Ashura* (8th, 9th, 10th) | October 10 - 12 |
| Last day to WITHDRAW | October 21 |
| Arbaeen/Chehlum* | November 21 |
| Last Day of Classes | December 9 |
| Reading Days | December 10 - 12 |
| 12th Rabi-ul-Awwal* | December 12 |
| Final Examinations | December 13 - 21 |
| Final Grades Due | December 24 |
| Quaid-e-Azam Day | December 25 |
| Grade Announcement | January 9, 2017 |
| Semester Break | December 22 - January 22, 2017 |

SPRING SEMESTER 2017

| | |
|--------------------------|-------------------------|
| First Day of Classes | January 23 |
| Add/Drop Period | January 23 - February 2 |
| Kashmir Day | February 5 |
| Last day to DROP classes | February 3 - 27 |
| Spring Break | March 20 - 24 |
| Pakistan Day | March 23 |
| Last day to WITHDRAW | March 31 |
| Labor Day | May 1 |
| Last Day of Classes | May 18 |
| Reading Days | May 19 - 21 |
| Final Examination | May 22 - 26 |
| 1st Ramzan* | May 27 |
| Final Grades Due | May 31 |
| Semester Break | May 26 - June 4 |
| Grade Announcement | June 5 |

SUMMER SEMESTER 2017

| | |
|----------------------|-------------|
| First Day of Classes | June 5 |
| 21st Ramzan | June 16 |
| Eid-ul-Fitr* | June 26 -28 |
| Last day to WITHDRAW | July 10 |
| Last Day of Classes | July 24 |
| Final Examinations | July 27-28 |
| Grade Announcement | July 31 |

*Subject to the sighting of moon (1437 - 38 Hijri)

ABOUT HABIB UNIVERSITY

Habib University's liberal arts and sciences framework offers students broad-based knowledge across a variety of disciplines while delving deeply into a specific field. It proves 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.

Global partnerships have been instrumental in the development of Habib University, enabling us to adopt the best practices in higher education. Partnerships with two of the top universities in the US – Texas A&M and Carnegie Mellon - have resulted in mutually enriching and supportive relationships from the early stages of institutional planning through curriculum development to ongoing academic operations and administration. Habib University is also collaborating with leading undergraduate liberal arts colleges – including Harvey Mudd College and Pitzer College, in Claremont, California – on faculty and student exchange, faculty development, co-teaching of courses, and program development.

To expand student opportunities, Habib University has partnered with Stanford University's Summer International Honors Program, a highly competitive program that allows our top students to learn at one of the world's leading universities, and University of Michigan-Ann Arbor, a highly-ranked public research institution, for study abroad.

HABIB UNIVERSITY'S ACADEMIC POLICIES

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 the Habib University Student 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 Academic Performance is responsible for coordinating the university's adherence to this policy and for complaint procedures in regard to discrimination or harassment.

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 academic catalog in effect since the student began continuous enrollment at Habib 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 academic catalog or other student policy document.

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 University 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 Alert 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 make a formal request to the Office of Academic Performance.

DECLARATION OF A MAJOR

All students entering Habib University must indicate a major program before beginning their course of study. Students must confirm their major by the end of their first year by submitting a 'Declaration of Major' form to the Office of 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.

CHANGE OF A MAJOR

Students wishing to change their major must submit a 'Change of Major' application form to the Office of the Registrar. A change of major application must be approved by the student's academic advisor, the concerned program director/dean and the Office of Academic Performance. Once approved, a coursework/graduation plan must be submitted by the student to the Office of the Registrar based on the graduation requirements for the most recent catalog year of the new major. This plan must be developed in consultation with the student's academic advisor and the Office of Academic Performance. Students must obtain their parents'/guardian's signature on the application form. Once obtained, the Office of the Registrar processes a change of major and notifies the student and all concerned university offices including the Office of Student Finance for any financial adjustments needed that result from this change.

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 the concerned program director. 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' and submitting it to the Office of the Registrar. If the declared minor does not fit any existing program minor, a 'Minor Academic Plan; approved by the concerned program director must be submitted with the 'Declaration of Minor' form available from the Office of the Registrar. This plan must also be approved by the student's academic advisor and the Office of Academic Performance.

TRANSFERS

All transfers, including transfer of credits, will be subject to review and will take place on a case-by-case basis. All incoming students, regardless of their transfer status, must satisfy the university's Habib Core requirements, spend at least four semesters at the University as fulltime students before graduation and fulfil transfer criteria as per the university policy. Students may transfer out from Habib University at any time. Students are advised to begin the transfer process well in advance of the termination of the academic year by submitting a transfer request to the Office of the Registrar.

Further details and procedures are available in the Habib University's Transfer of Credits Policy.

ATTENDANCE POLICY

An attendance policy has been enacted to support the success of all students at Habib University. Unless an absence is due to a university sanctioned event, there is no distinction between excused and unexcused absences. Attendance will be taken and absences noted in all classes by the course instructors in the university's Campus Management System. All first and second year students must maintain at least 85% attendance for each class in which they are registered. All third and fourth year students must maintain at least 75% attendance for each class in which they are registered. Non-compliance with minimum attendance requirements will result in an automatic failure of the course with an award of an 'F' grade, and may require the student to repeat the course when next offered, subject to the university's repeat policy.

Exceptions to this policy will only be made on an appeal submitted to the Office of the Registrar. An appeals committee will be constituted by the Office of the Academic Performance who shall inform the Office of the Registrar of the decision of the appeals' committee. The Office of the Registrar shall then take necessary action and issue an official notification to the student.



ATTENDANCE POLICY INFOGRAPHIC

GRADING SCALE

| Letter Grade | Scale |
|---------------------|--------------------|
| A+ | 4.00 |
| A | 4.00 |
| A- | 3.67 |
| B+ | 3.33 |
| B | 3.00 |
| B- | 2.67 |
| C+ | 2.33 |
| C | 2.00 |
| C- | 1.67 |
| F | 0.00 |
| AU | Audit |
| W | Withdrawal |
| WP | Withdrawal Passing |
| WF | Withdrawal Failing |
| I | Incomplete |
| TR | Transfer |
| R | Repeat |
| S | Suspended |
| CR | Credit (Pass) |
| NC | Non-Credit (Fail) |

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:

- Semester GPA (SGPA): GPA for a single semester only.
- Cumulative (CGPA): A cumulative GPA for the duration of the student's 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.

FIRST SEMESTER GRADES POLICY

Final Transcript: A Habib University student's final transcript is the consolidated marks sheet that is issued by the Office of Academic Systems and Registrar on completion of their program of studies or if a student leaves the university any time before graduation.

- I. First semester courses: Grades for courses taken by a student in their first semester will appear as Credit (Pass) / Non-Credit (Fail) in the final transcript issued by the Office of Academic Systems and Registrar .
- II. Grades earned in First semester courses, defined above, will not be included in the calculation of the final CGPA (Cumulative Grade Point Average) that appears on a student's final transcript.
- III. The above policy will apply for all first semester courses that may be repeated by a student during their course of studies at Habib University.

Provisional Transcripts / Proforma:

- I. Freshmen are only provided provisional transcripts/proforma on a need and case-by-case basis. The Registrar's Office has a form that requires freshmen to state the reason and provide a letter (e.g., sponsor's letter) to apply for provisional transcripts.
- II. Provisional transcripts are issued to sophomores and onward on a simple request made to the Registrar's Office. However, first semester grades are not shown on provisional transcripts. If students need their official first semester grades, they will have to follow the procedure stated above.

Academic Alerts: First semester grades will be counted towards raising 'Academic Alerts'.

University's financial commitments to freshman year students: Habib University's financial commitment to freshmen year students, if any, will not be affected by their first semester grades.

HU Student Employment: First semester grades and earned GPA will not be a factor for recruitment of students in the university's student employment program. For 'Student Employment', the only academic performance factor for considering freshmen is Credit (Pass)/Non-Credit (Fail) earned in the first semester.

¹For the batch of 2019, this includes 'Computational Thinking – I' / Energy (offered to freshmen in their first/second semesters, i.e., Fall 2016 and Spring 2017). For the batch of 2020, this includes 'Creative Problem Solving' that is offered to freshmen in Spring 2017.

INCOMPLETE POLICY

Students are expected to complete all academic coursework and assignments during the academic semester in which they were assigned. If a student is unable to complete a course due to serious illness or exceptional circumstances beyond their control, and the work completed to date is of passing quality, they may request a grade of 'I' (incomplete) from the concerned instructor, providing that the grade of incomplete gives no undue advantage to that student. Incomplete grades are not a privilege and are only awarded to students under exceptional circumstances on an individual basis. That is, they cannot be awarded as part of a course's assessment and grading policy. Incomplete grades should only be awarded with the signed approval of the concerned instructor and the concerned program director/dean. All Incomplete grade requests must be submitted with a completed 'Incomplete Agreement Form', which must include the circumstances that have prevented the student to complete the course (to be filled and signed by the instructor) and must include all details to satisfy the requirements of the course and a strict timeline for completion. 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 the following semester or the 'I' will default to an 'F' grade. Incomplete grades are not calculated into a student's grade point average.

CHANGE OF GRADE POLICY

Grades awarded at the end of term for each course, including that of a previously approved 'Incomplete' grade, is considered final. Instructors may submit to the Office of

the Registrar a 'Change of Grade' form after seeking approval of the concerned program director/dean, clearly mentioning the reason for which a change of grade is needed, which can only be due to a calculation or a clerical error. Any change of grade form must be submitted by a course instructor by the end of the subsequent semester.

COURSE LETTERING AND NUMBERING

All courses are designated by a prefix letter denoting the program/subject area in which the course originates. The prefix code is followed by a three number sequence denoting the course 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.

COURSE LOAD

Fulltime students at Habib University must register a minimum of 12 credit hours in a semester to maintain their fulltime student status for that semester. The maximum allowable course load per semester is 20 credit hours. Students with good academic standing, may submit a request to the Office of the Register to enroll in an additional course beyond the maximum allowable limit, provided that none of the courses already enrolled is a repeat course. This will be subject to the approval of the student's academic advisor, concerned program director/dean and the Office of Academic Performance.

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 by the course instructor only if space is available. Even during the course 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 program that offers the course may have additional requirements for auditors. Contact the concerned program director 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 course 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 the Office of Student Finance.

INDEPENDENT STUDY ACADEMIC STANDING, PROBATION AND DISMISSAL POLICIES

Good Academic Standing: Students must maintain a cumulative grade point average (CGPA) of 2.33 throughout their academic tenure in order to graduate from the university. 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 2.33, then the student shall be put on Academic Alert. Additionally, if a student's grades appear as if the SGPA may drop below 2.33 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 2.33 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 academic 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 Academic Alert for an additional semester.

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 their behavior that resulted in the suspension. This essay should demonstrate what the student has learned through the experience, how the student has worked to correct the behavior, and what contributions the student is prepared to make to the betterment of the Habib University community as a whole;
- Meet the Director of Student Life or their designee prior to reinstatement;
- Fulfill any other requirement as determined by the Director of Student Life or their designee.

Academic Suspension:

- Meet with their academic advisor and collaborate in devising an Academic Success Plan for the first returning semester at minimum;
- Meet with their 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.

WITHDRAWALS

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

SELF WITHDRAWAL

Students will be allowed to withdraw from an individual course up until the last class meeting of the semester, in consultation with the academic advisor and the Office of Academic Performance. Students may withdraw from the university in its entirety up until the last business day before final exams begin.

ADMINISTRATIVE/NON-VOLUNTARY WITHDRAWAL

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 Academic Performance 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 Academic Performance 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 Director of Student Life 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 occasions, 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 the Registrar 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 the Registrar.

Appropriate documentation for a withdrawal in this category consists of a letter from the student's 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 course drop period, will be noted on the transcript. After the course drop period, course withdrawal forms 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", which is not calculated in the overall GPA.

REFUNDS OF TUITION AND FEES PAID AFTER WITHDRAWAL

Regardless of reason, unless otherwise approved by the Office of Student Finance, 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 of 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 Office of the Registrar and must be signed by the academic advisor and the program director/dean concerned. In the event that the student is undeclared, 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.

SUMMER SEMESTERS

Summer semesters are offered at Habib University in addition to the regular semesters. The semester dates, course offerings and enrollment are announced and handled by the Office of the Registrar. Fulltime students at Habib University may enroll in courses offered in Summer semesters to:

- I. Repeat a course if an 'F', 'R', 'WP', 'WF' or 'W' grade was awarded for that course previously.
- II. Improve grade for a previously attended course.
- III. Attend any additional courses other than those required to fulfil requirements of a major program offered at Habib University, e.g., to fulfil requirements of a minor program.
- IV. Other university-wide courses permitted as per the institutional policy.

Students may enroll to a maximum of 2 courses (or 8 Credit Hours) in a Summer semester at the university. All university academic policies and regulations including the Attendance, and Academic Standing policies will apply as in the regular semesters. All financial policies for a Summer semester, including tuition, fees (if applicable) and discounts are announced by the Office of Student Finance.

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 as per the university's 'Parental Access and Notification' Policy. 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 Life or Academic Performance 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

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 Director of Academic Performance. Cases originating outside of academics and all cases of discrimination, harassment, or assault, should be filed with the Director of Student Life.

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, 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 by the competent authority. 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 competent authority 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 through their academic advisor and/or the concerned program director/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 Director of Academic Performance.
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 Director of Academic Performance 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 Office of Academic Performance'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 concerned 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 course instructor. If no direct resolution is possible, the student should request arbitration by the concerned program director/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 (alerts, 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 during the exams weeks designated in the university's academic calendar and are regulated by the university's 'Examination' Policy. The final examination schedule is announced by the Office of 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 permitted given extraordinary circumstances by the concerned program director/dean. The circumstances in which an exception may be allowed are outlined below.

MIDTERM EXAMINATIONS

The schedule of midterm exams, be they within or outside the scheduled class hour, are announced by the instructor and must be conducted during the midterm week slot as allocated by the Office of the Registrar before the start of each semester. In courses in which more than midterm exam is administered, one midterm exam must be scheduled during the allocated weeks in the semester's week-wise calendar circulated by the Office of the Registrar. 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, course projects, and exams within the time frames and by the dates indicated in their course outlines, which should not be later than the last day of classes of a semester as stated in the university's academic calendar. However, the university allows a student who misses a midterm or a final exam due to a religious obligation, medical illness, or family emergency to request a make-up exam to the Office of the Registrar.

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 concerned program director/dean has the discretion to allow a 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 may 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 by the end of the Add/Drop course period. If a suitable arrangement cannot be worked out between the student and the instructor, they should consult the concerned program director/dean.

In case of a religious conflict with a final examination, the student must submit a written statement to the instructor, concerned program director/dean, and the Office of the 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 fails to give a 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.

DISABILITY POLICY

Habib University is committed to ensuring that all qualified students with disabilities have the opportunity to take part in educational programs and services and that no otherwise qualified individual with a disability shall, solely by reason of the disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity. The Office of Academic Performance aims to provide this opportunity in a manner that meets national and international best practices. For more details and application procedure, refer to the Habib University's 'Reasonable Accommodations for Students with Disabilities' Policy.

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.

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 insight and perspective offered by the humanities and social sciences, or remain 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 Habib 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 knowledgeably on the most critical aspects of their experience in the world they inherit today.

The Core commences with the systematic development of reading, interpretation, analysis, communication, and presentation skills that will continue to be improved throughout our students’ undergraduate careers. The humanities and social sciences component of 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 critical evaluation 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 surrounding coupled with a simultaneous focus on Western 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 regional 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, natural scientific method and analysis, as well as the nature and place of science in modern societies. The expanse and logic of the Habib Liberal Core are given by the seven Forms of Thought/Action that organize the curriculum. The knowledge rubrics governing the curriculum reflect the specific pedagogical character of a university. The seven Forms of Thought/Action that govern the Habib Liberal Core Curriculum are a substantially adapted articulation of Stanford University's Breadth Governance model to reflect the particular pedagogical vision and the character of the faculty of Habib University, as well as the regional context. Below are brief descriptions and justifications of the Forms of Thought/Action that reflect and govern the curricular logic of the Habib Liberal Core Curriculum. All students at HU are required to take a determined minimum of courses under each form of thought/action.

Historical & Social Thought (2 courses): The extraordinary significance of historical and social knowledge in modern times arises from the unprecedented pace of change in modernity, as well as the growing complexity of modern societies. Across the disciplines, Habib University's faculty also demonstrate a remarkably coherent historical approach to both social scientific and humanistic knowledge. All students at Habib University will be required to take a minimum of two courses in Historical & Social Thought.

Philosophical Thought (2 courses): The study of philosophy has traditionally been at the heart of liberal core curricula. Philosophical thought serves to enhance both the rigor, as well as the reflective powers of the student that are essential to concept-generation and innovation in all fields. Furthermore, traditions atrophy when their philosophical dimension is relinquished, and a sense of the philosophical depth of a tradition is crucial to a rich sense of inheritance. Habib faculty also widely share an interest in philosophy/theory. All students at HU will thus be required to take a minimum of two courses in Philosophical Thought.

Language & Expression (2 courses): The development of linguistic and expressive abilities is widely recognized to be a key benefit of a liberal arts education, and language and literature have traditionally been as central to liberal core curricula as philosophy. Communicative power is key to leadership and success across fields and disciplines. All students at HU will be required to take a minimum of two courses under this rubric.

Formal Reasoning (1 course): Deductive thinking is crucial across fields and disciplines in both science and engineering, as well as the social sciences and humanities, and a deductive reasoning requirement is standard in higher and liberal education. Such a requirement also reflects the strength of our science and engineering faculty at HU. All students at HU will be required to take a minimum of one course in Formal Reasoning.

Quantitative reasoning (1 course): Numbers and quantities are an essential part of modern civilization and its forms of knowledge. The ability to handle and operationalize large amounts of data, quantitative reasoning and analytical skills are crucial across the professions. All HU students will be required to take a minimum of one course in Quantitative Reasoning.

Natural Scientific Method & Analysis (2 courses): The development of scientific method and analysis is a crucial feature of modernity and its forms of knowledge, impacting not just the natural, but also the social sciences and humanities. A substantial natural science requirement is thus standard in higher educational and liberal institutions. To ensure the scientific literacy of all our graduates, all HU students will be required to take a minimum of two courses in Natural Scientific Method & Analysis.

Creative Practice (1 course): Creativity is widely recognized as a crucial indicator of success across the professions, and is increasingly a required feature of the best higher educational curricula. Given the nature of our programs and faculty in both AHSS and SSE, we have an excellent opportunity to make creative practice a distinctive feature of the Habib experience. All HU students will be required to take at least one course under this rubric.

The above Core requirements are fulfilled through a combination of compulsory and elective courses. Given Habib's unique pedagogical mission we are committed to a common curricular experience for the Habib student body, even as we keep open an elective space for students. The Habib Liberal Core Curriculum requirements are fulfilled through the following courses.

| Forms of Thought | Courses |
|--------------------------------------|---|
| Historical & Social Thought | CORE 102: What is Modernity? CORE 201: Pakistan & Modern South Asia |
| Philosophical Thought | CORE 202: Hikma I CORE 301: Hikma II, or Philosophy Elective |
| Language & Expression | CORE 101: Rhetoric & Communication CORE 121: Jehan-e-Urdu |
| Quantitative Reasoning | ENER 101: Energy ENER 103: Energy Lab |
| Formal Reasoning | CORE 111: Logical Problem Solving |
| Natural Scientific Method & Analysis | CORE 200: Scientific Methods CORE 302: Science, Technology & Society |
| Creative Practice | |

CORE COURSE DESCRIPTIONS

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 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. Class content will focus on compelling and relevant texts that anticipate the themes of the larger Liberal Core, 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 world-history – that of 'modernity' – sets us apart from all premodern 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 – imperative to the task of thoughtful self-cultivation assigned to us by Habib University's pedagogical charter of *yohsin* – to ask the question: What is it to be modern? What is modernity?

The interrogation and investigation of modernity is an essential dimension of Habib University's Liberal Core in its pursuance of a strenuously Universalist and critical humanities and social sciences curriculum.

Our 'modernity' is the very air we breathe. It encompasses, at an ever-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 will address the most critical and essential elements of our global and regional modernity today, modernity in our time and context. Beginning with an investigation of the conditions of emergence of this unique world-historical identity, we then turn to the historical emergence and formation of key structures and features of the modern in the following domains: political modernity; economic modernity; modernity and ecology; and modernity and religion. By the end of the semester the historical character and specificity of these foundational spheres of our present will be visible.

CORE 201: Pakistan & Modern South Asia

For the first time in its 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 – what is the history of our regional modernity?

This question takes on a particular urgency in Pakistan as the region passes through the current period of crisis and change. With a significant 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 immediate pre-colonial historical scene, through the colonial period, including the rise of anti-colonial nationalism and decolonization, to the Cold War and the contemporary period of transformation and turmoil.

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, politics and society 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 languages and traditions took place, processes that continue into the present.

They will learn to see contemporary conflicts, ideologies, identities and structures 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.

CORE 202: Hikma I – History of Islamic Thought

After the investigation and interrogation of modernity in Core 102 and 201 in particular, Core 202 turns to a second meta-theme of the Habib Liberal Core Curriculum: the question of inheritance. Ranging across philosophy, literature, history, law and the arts, Hikma I is an encompassing survey of Islamicate thought that seeks to give a sense of the historical and philosophical complexity and depth of the tradition, with significant reference to the region of South Asia.

In the module on ‘Religion & Modernity’ in Core 102, and subsequently in our historical survey of socio-religious as well as nationalist reform and revivalist movements in the colonial period in Core 201, we studied the dramatic transformation and discursive constitution of ‘religion’ and ‘culture’ in the colonial-modern period. Both regionally, as well as in the global modern generally, ‘Islam’ and its cultures and societies, have also become particularly sensitive and difficult regions of the discursive landscape. In recognition of this urgent conceptual difficulty in approaching Islamic phenomena and thought, Hikma I is structured around Shahab Ahmed’s civilizational panoramic and conceptually rigorous *What is Islam? The Importance of Being Islamic*. Published in 2016, the work has been received as a synthetic magisterium that puts the discourse and discussion on Islamic thought on a new footing, restoring to the tradition its complex plurality and universality. In its historical and philosophical depth, our ambitious text gives us what one philosopher has called ‘a postcolonial ontology of Islam,’ that is an important orientation of the Habib Liberal Core Curriculum and our pedagogical mission.

The course begins, however, with the medieval spiritual bildungsroman by Ibn Tufayl – Hayy Ibn Yaqzan – that conveys the philosophical depth and passion for knowledge, in all its plurality that is chartered in the tradition as the means for the thoughtful self-cultivation of the human.

CORE 301: Hikma II – History of Islamic Thought

Whereas Hikma I focused on clearing the epistemological and philosophical ground to approach the history of Islamic thought, Hikma II directly engages primary texts and artifacts from the tradition, especially of a philosophical character. Readings will include Ibn Sina, Al-Ghazali, Suhrawardi, al-Farabi, Ibn Arabi and Mulla Sadra, as well as Rumi, Hafiz, Ghalib, Khwaja Ghulam Farid, the qawwali tradition, etc.

CORE 111: Logical Problem Solving

Logic is a powerful tool to understand the phenomena around us. Logical thought leads

not only to deeper insight, but to a particular approach toward solving problems. This approach has proven immensely useful through the introduction of machines that support it by implementing "algorithms". These machines are today commonly known as computers and they have revolutionized virtually every sphere of human activity. This course provides an introduction to some basic logical techniques and their use in the analysis of arguments. The problem-solving approach is introduced with an aim to develop algorithms. These algorithms are then run on a computer with the help of a high-level programming language.

Specifically, this course aims to: (1) provide an introduction to propositional logic; (2) use propositional logic techniques to analyze arguments; (3) develop problem-solving skills; (4) develop the ability to express the solution to a problem in algorithmic form; and (5) provide exposure to programming a computer in a high-level language.

CORE 121: 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.

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.

CORE 200: Scientific Methods

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.

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.

SCHOOL OF SCIENCE & ENGINEERING (SSE)

BS IN

ELECTRICAL ENGINEERING

FACULTY MEMBERS:

Makda, Ishtiyahq Ahmed, Assistant Professor

Mughal, Ozair, Lecturer

Memon, Abdul Basit, Assistant Professor

Mumtaz, Tariq, Lecturer

Shaikh, Mohammad Shahid, Associate Professor & Program Director

Shumail, Muhammad, Assistant Professor

Spracklen, Charles Timothy, Professor of Electrical Engineering & Physics

Zaidi, Shoaib, Professor of Electrical Engineering & Physics, (Dean, SSE)

Modern life is unimaginable without electricity. The generation, transmission, distribution and utilization of electricity is made possible mainly through the work of Electrical Engineers. They design and build communication systems such as mobile phone and computer networks, design microelectronic silicon chips that are at the heart of modern computing devices, develop biomedical devices and instrumentation to save lives, and advance new 'green' technologies that will power our homes and industries while protecting the environment.

Habib University Electrical Engineering Program combines a rigorous science and engineering education with the liberal arts. It provides students with technical knowledge in Mathematics and Sciences, Computation, Electronics, Power and Energy Systems, Electromagnetics, Telecommunication Systems, Automation and Control Systems.

PROGRAM VISION

To be an agent of positive change in society through excellence in locally contextualized and globally competitive liberal-arts and discipline-specific education and research, and imparting an understanding of contemporary issues and challenges facing the society.

PROGRAM EDUCATIONAL OBJECTIVES

Electrical Engineering program at Habib University aims to produce competent electrical engineers who

- have excellent technical expertise in the discipline, including the latest and emerging technologies;
- practice their profession responsibly, with an awareness of civic duties and contemporary issues, and an understanding of economic, social, environmental, professional and ethical issues and of the impact of their work on society and

environment;

- have an appreciation of non-technical disciplines, possess excellent communication skills, and are comfortable working in teams composed of individuals with diverse cultural and educational backgrounds;
- engage in the lifelong process of independent, reflective learning.

PROGRAM LEARNING OUTCOMES

Following Program Learning Outcomes (PLO) are designed to prepare graduates to attain the program educational objectives and subsume the PLOs of Pakistan Engineering Council (PEC) and Accreditation Board for Engineering and Technology (ABET).

Electrical Engineering program at Habib University aims to produce electrical engineers who, at the time of graduation, have

- (i) an ability to apply knowledge of mathematics, science, engineering fundamentals and electrical engineering to the solution of complex engineering problems;
- (ii) an ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations;
- (iii) an ability to investigate engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis using first principles of mathematics, natural sciences and engineering sciences, and interpretation of experimental data, and synthesis of information to derive valid conclusions;
- (iv) an ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools to engineering activities, with an understanding of the limitations;
- (v) an ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to engineering problems;
- (vi) an ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development;
- (vii) an commitment to professional ethics and responsibilities and norms of engineering practice;
- (viii) an ability to work effectively, as an individual or in a team, in multifaceted and or multidisciplinary settings;

- (ix) an ability to communicate effectively, orally as well as in writing, with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions;
- (x) an ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment;
- (xi) an ability to recognize importance of, and pursue lifelong learning in the broader context of innovation and technological developments;
- (xii) a knowledge of contemporary issues.

THE ACADEMIC PROGRAM

The first year of the program provides firm grounding in natural sciences, mathematics, computing and electrical engineering. Foundational courses in computer science and electrical engineering will provide students a meaningful introduction to both the disciplines. Students will then take core electrical engineering and mathematics courses that will provide a solid foundation for taking more advanced elective courses. The final year is devoted to a year-long capstone project, technical electives, and supporting courses. Alongside their specialized training, students are required to take courses outside their major to facilitate a broad exposure to knowledge. This includes the mandatory Habib Liberal Core component.

REQUIREMENTS FOR THE MAJOR

A major in Electrical Engineering requires completion of approximately 140 credit hours of coursework, with a minimum CGPA of 2.33, as shown in the table below:

| Course Category | Number of Courses to complete | | |
|--|-------------------------------|------------|----------|
| | Total | Compulsory | Elective |
| University Requirements | | | |
| Habib Liberal Core | 10 | 10 | 0 |
| Economics and Management | | | |
| Economics, Management and Entrepreneurship | 2 | 2 | 0 |
| Mathematics and Natural Sciences | | | |
| Mathematics | 4 | 4 | 0 |
| Natural Sciences | 2 | 2 | 8 |
| | | | Total |

| Course Category | Number of Courses to complete | | |
|---|-------------------------------|------------|----------|
| | Total | Compulsory | Elective |
| Computing | | | |
| Programming, Algorithms and Data Structures | 2 | 2 | 0 |
| Electrical Engineering Foundation | | | |
| Circuits and Electronics | 3 | 3 | 0 |
| Analog and Digital Signals and Systems | 2 | 2 | 0 |
| Hardware and Interfacing | 2 | 2 | 0 |
| Engineering Workshop Practice | 1 | 1 | 0 |
| | | | Total |
| Electrical Engineering Breadth | | | |
| Electrical Machines | 1 | 1 | 0 |
| Electromagnetic Theory | 1 | 1 | 0 |
| Signals, Communications and Control | 2 | 2 | 0 |
| | | | Total |
| Electrical Engineering Depth | | | |
| Electives | 5 | 0 | 5 |
| Interdisciplinary Engineering Courses | | | |
| Engineering Courses other than Electrical Engineering | 2 | 2 | 0 |
| Capstone Project | | | |
| Capstone Project | 2 | 2 | 0 |
| Overall | 46 | 41 | 5 |

PROGRAM THRUSTS

Three program specializations are defined. Students have an option to specialize in one of these areas by taking appropriate elective courses in consultation with their academic advisor.

Electronics and Embedded Systems

Modern electronics are ubiquitous in consumer, industrial, automotive, medical, commercial, and military applications. The percentage of electronics in traditionally mechanical systems, such as automobiles, has steadily increased to more than 30% and is expected to increase further. This trend of 'electronification' of society, coupled with the availability of inexpensive but powerful embedded systems, opens up a huge valley of opportunities for well-trained electronic engineers and entrepreneurs.

Power and Energy Systems

Ready availability of electrical power at a reasonable price is essential for the economic development of a country. In order to come out of the current energy crisis Pakistan needs to launch more power generation projects, upgrade its transmission network and modernize the distribution system in order to reduce distribution losses. All this will be done by electrical engineers who specialize in power systems.

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. Telecommunications thrust is intended to sustain the positive growth in this industry by providing adequately trained technical managers, leaders, and entrepreneurs.

COURSE DESCRIPTIONS

SSE

MGMT 201. Technology Management and Entrepreneurship

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

Topics include: Application of economic principles to engineering solutions, time value of money, cash flow analysis, quantization of profitability, methods of evaluating investments, comparison of alternative investments, inflation, depreciation, resource depletion, economic analysis of projects, economic management of engineering projects.

ELECTRICAL ENGINEERING

EE 111. Electric Circuit Analysis

This course introduces basic DC and AC steady-state linear circuit analysis. Topics discussed in this course include circuit elements, Ohm's law and Kirchhoff's laws, node and mesh analysis, energy storage elements, Thevenin and Norton theorem, Phasors and sinusoidal steady state analysis. Computer applications in circuit simulation and numerical solution is also discussed.

EE 172. Digital Logic and Design

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 CS 130.)

EGR 291. Engineering Workshop

This course aims to introduce the students to hands-on practical engineering skills, necessary for creating their own prototypes. Topics covered in this course include introduction to engineering design process, shop safety, engineering drawing, solid modeling (CAD), 3D printing, effective use of basic hand tools such as saws and files, machining (Lathe, Milling, Drill press), CNC machining, soldering techniques, and PCB design and printing. The course work emphasizes practical skills through lab activities and project. The students will be required to work with different materials including metal, wood, and plastic.

EE 211. Basic Electronics

The course aims to introduce students to semiconductor devices, with emphasis on application of these devices in realizing analog and digital electronic circuits. The course starts with an introduction to semiconductors, energy bands, valence bonds, doping, N-type and P-type semi-conductors, etc. The electronic devices, such as PN junction diode, bipolar junction transistor (BJT) and field-effect transistor (FET), along with their applications are discussed in detail. Biasing circuits, single transistor amplifiers and their frequency are also discussed. Circuit simulations using PSpice (OrCAD) forms an important bridge between the theory discussed in class and lab experiments.

Prerequisite: EE 111.

EE 252. 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.

Prerequisite: MATH 101.

EE 331. Electrical Machines

This is the first course on DC and AC electromechanical systems. Specific topics include single-phase and three-phase transformers, general structure and physical principles underlying electric drive systems, brushless, stepper and switched reluctance DC motors, DC generators, Induction and Synchronous AC motors and generators, torque-speed characteristics of motor drives. Mathematical modeling and speed control of electrical machines will also be discussed.

Prerequisite: PHY 102, EE 212.

EE 241. Electromagnetic Theory

Extension of static electric and magnetic fields to time-varying fields and electromagnetic waves; Maxwell's equations; propagation of electromagnetic waves through different types of media and their behavior at the interfaces.

Prerequisite: MATH 102; PHY 102.

EE 354 Probability and Stochastic Processes

Set theory and counting principles, axiomatic definition of probability, independence and conditional probability, Bayes' theorem; random variables (RVs) and their cumulative distribution function, probability mass functions, probability density functions and moments; joint RVs; limits theorems; introduction to stochastic processes; applications.

Prerequisite: MATH 102.

EE 322. Analog and Digital Communication

Introduction to fundamental principles underlying the analysis, design and optimization of analog and digital communication systems; modulation techniques for analog and digital communication; effects of interference and noise and their suppression.

Prerequisite: EE 252.

EE 353. Digital Signal Processing

Introduction to digital signal representations in time and frequency domains; signal manipulations via filters and resampling; signal creation and capture and processing with real-time computing machinery.

Prerequisite: EE 252.

EE 361. Principles of Feedback Control

Topics include: Models of dynamic systems, linear time-invariant (LTI) and transfer function models; impulse, step, transient and steady-state response; root locus technique, Bode plots, Nyquist criterion; gain and phase margins, Nichols charts, lead, lag compensation; state-space techniques; simulation and controller design using Matlab and Simulink.

Prerequisite: EE 252.

EE 373. Microcontrollers and Interfacing

Microcontrollers play a central role in modern life, controlling everything from the engine of a car, to domestic and office machinery. Microcontroller fundamentals including architecture, assembly language programming, and interfacing. Applications of industry-standard microcontrollers in embedded systems. Employs software design tools, simulators, and hardware trainers. Will focus on interfacing the ARM RISC processor to motors, actuators and sensors.

Prerequisite: EE 172.

EE 491. Capstone Project I**EE 492. Capstone Project II**

This year-long sequence 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 capstone committee.

BS IN

COMPUTER SCIENCE

FACULTY MEMBERS

Alam, Shah Jamal, Assistant Professor, Khidmat Adviser, Registrar

Hussain, Shahid, Assistant Professor

Khan, Umair Azfar, Assistant Professor, Entrepreneurship Adviser

Rashid, Jibran, Assistant Professor, Higher Education Adviser

Raza, Syeda Saleha, Assistant Professor, Industry Adviser

Saif Ur Rahman, Syed, Assistant Professor

Saleem, Waqar, Assistant Professor and Program Director

Computer Science is the study of computation - what can and cannot be computed, how can computation be made more efficient, how to build machines that can compute, and which spheres of human activity can benefit from computational approaches. It is deeply rooted in logic and mathematics. Theoretical Computer Scientists are constantly pushing the frontiers of computation by inventing new computational approaches. Practical Computer Scientists apply the theory of Computer Science to different application areas like science, finance, medicine, entertainment, education, communication, engineering, art, and the humanities.

PROGRAM VISION

The Computer Science program educates students in the theory, systems, and applications of Computer Science in order to enable them to make impactful contributions to society and prepares them for success in entrepreneurship, higher education, and industry.

DEGREE REQUIREMENTS(MAJOR)

In addition to the 11 units required by the University for every student, Computer Science majors complete 35.5 units in the following categories:

- Foundation, 4 units
- Kernel, 4 units
- Electives, 6 units
- Career Development, 2 units
- Support, 10.5 units
- University Electives, 6 units
- Capstone Project, 3 units

Habib Liberal Core (described on Page 33) contributes 11 units as follows. Each course from Habib Liberal Core including the local language requirement contributes 1 unit. The Creative Practice requirement of Habib Liberal Core is fulfilled by

- CS290 Khidmat, 1 unit

which is to be completed in consultation with the Khidmat adviser.

Computer Science Foundation comprises courses that provide incoming students the necessary skills in order to proceed in the Computer Science major. The courses are:

- CS110 Computational Thinking I, 1 unit
- CS111 Computational Thinking II, 1 unit
- CS130/EE171 Digital Logic and Design, 1 unit
- CS132 Elements of Computing Systems, 1 unit

Computer Science Kernel comprises essential courses on the theory and implementation of Computer Science. The courses are:

- CS200 Functional Data Structures, 1 unit
- CS212 Nature of Computation, 1 unit
- CS200 Object Oriented Programming and Design Methodologies, 1 unit
- CS310 Design and Analysis of Algorithms, 1 unit

Computer Science Electives provide students the choice to explore Computer Science in its breadth and depth. The program offers courses fulfilling each of 3 categories: theory, systems, and application. Students must complete 6 units with at least 1 unit in each category.

Computer Science Support develops the supporting approaches and skills necessary for a Computer Science graduate. The courses are:

- MATH101 Calculus I, 1 unit
- MATH102 Calculus II, 1 unit
- MATH201 Differential Equations, 1 unit
- MATH210 Probability and Statistics, 1 unit
(may be substituted by EE352 Probability and Stochastic Processes)
- MATH205 Linear Algebra, 1 unit
- EE111 Electric Circuits, 1 unit
- ENGR291 Engineering Workshop, 0.5 units

In addition, students must complete 4 units as follows

- 2 units of Natural Science courses from which at least one course includes a lab component.
- 2 units of courses fulfilling the Technical Skills category.

University Electives allow Computer Science majors to develop breadth outside their major. Students must complete 6 units as follows.

- 1 unit in Electrical Engineering
- 1 unit in Arts, Humanities, and Social Sciences
- 2 units in Digital Humanities
- 2 units from any courses on offer at the University.

Career Development courses prepare students for success in life beyond University by providing essential skills. Students must complete 2 units including

- CS290 Technical Communication

The remaining 1 unit is to be completed in consultation with either of the 3 track advisers: Entrepreneurship, Research, and Industry.

Capstone Project is a year long project attempted in the final year of studies at the University. It comprises the courses

- CS490 Kaavish I, 1.5 Units
- CS491 Kaavish II, 1.5 Units

The project must be carried out in consultation with either of the 3 track advisers: Entrepreneurship, Research, and Industry.

4 MINOR REQUIREMENTS

The Computer Science program offers a minor to students from other programs who wish to develop a significant grounding in Computer Science. The minor comprises 8 units defined as follows:

- 3 units from Computer Science Foundation that must include CS110 and CS111.
- Any 3 units from Computer Science Kernel.
- Any 2 units from Computer Science Electives.

5 GRADUATION GPA REQUIREMENT (MIN)

In order to qualify for a CS major or minor, a student must meet the University's minimum GPA requirement. In addition, he/she must have at least a C+ grade in each Computer Science Foundation and Computer Science Kernel course attempted and at least a C- in every other Computer Science course attempted.

6 COURSE DESCRIPTIONS FOR FALL 2016 AND SPRING 2017

CS351 Artificial Intelligence

Prerequisite: CS200 Functional Data Structures

Note:

- Fulfils CS Applications Elective.

Study of the techniques used in the science and engineering of making machines intelligent; techniques include: problem solving, decision making, learning, planning, and reasoning; application areas explored are computer vision, robotics, and deep learning; specific topics include: intelligent search techniques, games, and adversarial search using minimax and alpha-beta pruning, supervised learning via decision trees, naïve Bayes, and artificial neural networks, K-means clustering, reasoning via first-order logic, Bayesian networks, and evolutionary algorithms.

CS412 Algorithms: Design and Analysis

Prerequisite:

- CS200 Functional Data Structures
- CS212 Nature of Computation

Note:

- Part of CS Kernel.
- Listed earlier as CS310 Design and Analysis of Algorithms.

Develops tools and techniques that aid in designing correct, efficient algorithms for computational problems and analyzing their correctness and running time; some of the discussed techniques are: greedy method, divide-and-conquer, dynamic programming, hashing, randomization, network flows, linear programming, fast Fourier transform, and techniques for thinking about solving problems in parallel; analysis tools include: recurrences, probabilistic analysis, amortized analysis, and potential functions.

CS317 Combinatorial Machine Learning

Co-requisite/Prerequisite:

- CS412 Algorithms: Design and Analysis

Note:

- Fulfils CS Theory Elective.

Examines decision trees and rules widely used in supervised machine learning as combinatorial objects; investigates algorithms to construct and optimize these objects using both dynamic programming and greedy heuristics; topics include: decision tables, decision trees, decision rules, tests (reducts), supervised learning, and algorithms for the construction of trees, rules, and tests.

CS110 Computational Thinking I

Prerequisite: None

Note:

- First in a 2-course sequence: CS110 and CS111
- Part of CS Kernel.

Explores the historical context of Computer Science; highlights the application of computing in solving everyday problems; develops familiarity with algorithmic thinking and applications; introduces basic data structures; cultivates problem solving and debugging skills; focuses on the use of related formalism and mathematics; develops expertise in programming in a high level language; specific topics include: data structures (LIFO/FIFO, trees, graphs) and related algorithms, algorithm analysis, asymptotic notation, divide and conquer algorithms, Master theorem, sorting, functions, recursion, pointers, structs, and classes.

CS111 Computational Thinking II

Prerequisite: CS110 Computational Thinking I

Note:

- Second in a 2-course sequence: CS110 and CS111
- Part of CS Foundation.

Explores the historical context of Computer Science; highlights the application of computing in solving everyday problems; develops familiarity with algorithmic thinking and applications; introduces basic data structures; cultivates problem solving and debugging skills; focuses on the use of related formalism and mathematics; develops expertise in programming in a high level language; specific topics include: data structures (LIFO/FIFO, trees, graphs) and related algorithms, algorithm analysis, asymptotic notation, divide and conquer algorithms, Master theorem, sorting, functions, recursion, pointers, structs, and classes.

CS224 Object Oriented Programming and Design Methodologies

Prerequisite: CS110 Computational Thinking I

Note:

- Part of CS Kernel (as of 2016).
- Fulfills CS Logic, Languages, and Programming Elective (prior to 2016).

Introduces object oriented and related memory concepts; motivates C++ as the language of choice; topics include: pointers and structs, objects, heap allocation, data encapsulation, classes, namespaces, constructors and destructors, virtual functions and destructors, operator overloading and standard input/output, inheritance and polymorphism, templates, standard library containers, and software design using UML 2.0.

CS261 Understanding Social Networks

Prerequisite: Sophomore level

Note:

- Fulfills CS Applications Elective.

Introduces the theory and methods for social network analysis coming from sociology, communications studies, and mathematics and computer science; explores real-world networks from a variety of domains such as online social networks (e.g., Facebook and Twitter), political networks, informal money transfer, kinship and sexual networks; introduces methods and computational tools to analyze such social networks using modern software.

CS200 Functional Data Structures

Prerequisite: CS111 Computational Thinking II

Note:

- Part of CS Kernel.

A hands-on exploration of common data structures using functional programming; explores the use of data structures in popular software; introduces functional programming which is used to implement the covered data structures; these include: binary search tree (BST), randomized binary tree, treap, self-balancing trees (AVL, B-tree, red-black), heap, linked lists (single, double, curricular), skip list, hash table, and graph.

CS130 Digital Logic and Design

Prerequisite: None.

Note:

- Satisfies the Systems requirement of CS Foundation.
- Cross-listed with EE171.

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.

CS132 Elements of Computing Systems

Prerequisite: CS111 Computational Thinking II

Note:

- Satisfies the Systems requirement of CS Foundation.

A hands-on exploration of 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; 12 implementation projects focusing on building the hardware platform and software hierarchy of a computer system.

CS212 Nature of Computation

Prerequisite: CS111 Computational Thinking II

Note:

- Satisfies the Theory requirement of CS Kernel.

Investigation of fundamental challenges at the frontiers of theoretical Computer Science; establishes basic mathematical preliminaries and explores historical breakthrough results in Computer Science; provides practice in developing a rigorous mathematical argument and a clear intuitive explanation of a complex argument; specific topics include: proofs, automata and grammars, Turing machines and the halting problem, Godel's completeness and incompleteness theorems, computational complexity, interactive and zero-knowledge proofs, and quantum computing.

CS355 Databases

Prerequisite: CS111 Computational Thinking II

Note:

- Fulfills CS Applications Elective (as of 2016).
- Fulfills CS Software Systems Elective (prior to 2016).

A detailed exploration of the theoretical and practical aspects of Relational Database management Systems (RDBMS); develops an understanding of database modeling,

relational algebra, structured query language (SQL), components of Database Management System (DBMS), transaction management and concurrency control, database fine-tuning via indexing and partitioning, and database connectivity with front-end applications; discusses administrative aspects of database systems including database security, database management vs data warehousing vs datamining, and big data and its challenges.

| Course Category | Number of Courses to complete | | |
|--|-------------------------------|-------------|-----------|
| | Total | Compulsory | Choice |
| University Requirements | | | |
| Habib Liberal Core (including Creative Practice) | 11 | 9 | 2 |
| Computer Science | | | |
| Foundation | 4 | 4 | |
| Core/Kernel | 4 | 4 | |
| Theory Elective | 1 | | 1 |
| Systems Elective | 1 | | 1 |
| Applications Elective | 1 | | 1 |
| CS Free Electives | 3 | 1 | 2 |
| Capstone Project | 3 | 3 | |
| Khidmat | 1 | 1 | |
| Support | | | |
| Mathematics | 5 | 5 | |
| Career Development** | 2 | | 2 |
| Science & Engineering | 3.5 | 3.5 | |
| Electives | | | |
| Arts, Humanities and Social Sciences | 1 | | 1 |
| School of Science & Engineering | 1 | | 1 |
| Digital Humanities | 2 | | 2 |
| Free Electives | 2 | | 2 |
| Overall | 43.5 | 30.5 | 13 |

CS Khidmat and one CS elective cover two area of requirement and is not calculated twice in overall total units:

**One CS free elective counts toward fulfillment of one Career Development course

INTEGRATED SCIENCES AND MATHEMATICS (ISCIIM)

FACULTY MEMBERS

Alvi, Shahbaz, Lecturer of Physics and Mathematics

Kerai, Yousuf, Lecturer of Mathematics

Khaliq, Anzar, Assistant Professor of Physics and Program Director

Mufti, Tajdar, Assistant Professor Physics

Qureshi, Humaira, Assistant Professor Micro Biology

Yasmin, Samina, Assistant Professor of Chemistry

Zaidi, Atiya, Assistant Professor, Mathematics

Zaidi, Shoaib, Professor of Electrical Engineering & Physics (Dean, SSE)

Integrated Sciences and Mathematics (iSciM) is an endeavor of the School of Science and Engineering at Habib University to enrich the student experience by offering diverse courses in Natural Sciences and Mathematics. This not only adds depth to the Science and Engineering curriculum, but also enables students from all disciplines to get a greater exposure towards various scientific disciplines that prepare them to understand and participate in key issues including global warming, energy, environmental issues, and health.

Based on their interest, students from all disciplines at Habib University have the opportunity to pursue a minor degree in either Mathematics or Physics.

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, based on their course selection, the graduating Habib students

- design and conduct experiments from various science disciplines
- develop a deeper understanding of the fundamentals of Physics, Chemistry, Biology, Environmental Science, Energy and Mathematics
- develop skills in data analysis via the usage of multiple software tools
- develop a strong grasp on scientific writing
- develop the ability to understand current research in various fields of science
- read some selected classical scientific literature

PHYSICS MINOR:

The Physics minor is designed to open the opportunity for students with a significant interest in Physics to deepen their understanding of the subject. This will provide a foundation for a broader range of technical fields enhancing their ability to keep abreast of an ever-changing technological world.

Students can obtain a minor in Physics by satisfying the following requirements:

1. Students must take all the courses specified in the core curriculum for the Physics minor. The core curriculum for the minor includes the following courses:

| Mandatory Courses | Credit Hours |
|--|---------------------|
| PHY101 - Mechanics | 3 |
| PHY 102 - Electricity & Magnetism | 3 |
| PHY 201 - Modern Physics | 3 |
| PHY 202 - Quantum Mechanics I | 3 |
| PHY 101L - Mechanics Lab | 1 |
| PHY 102L - Electromagnetism, Optics and Modern Physics Lab | 1 |

2. Students must earn a C grade or better in all mandatory courses to continue with the minor.
3. Students are required to take a minimum of three additional 300+ level courses.
4. Students must earn a minimum of 20 credits.

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

MATHEMATICS MINOR:

The Mathematics minor at Habib University offers an opportunity to students from all disciplines with a significant interest in Mathematics to deepen their understanding of the subject. This optional field of study is designed to provide a foundation in Calculus, Linear Algebra and basic modelling techniques using differential equations. Convergent thinking is also developed through the analysis of quantitative problems directed towards the right procedure for the right outcomes. The choice of courses available within the minor allows the students to either take a pure mathematics track, an applied mathematics track or a mix of the two.

Students can obtain a minor in mathematics by satisfying the following requirements:

1. Students must take all the courses specified in the core curriculum for the Math minor. The core curriculum for minor includes the following courses:

| Mandatory Courses | Credit Hours |
|---------------------------------------|---------------------|
| MATH 102 - Calculus-II | 3 |
| MATH 201 - Differential Equations | 3 |
| MATH 205 - Linear Algebra | 3 |
| MATH 210 - Probability and Statistics | 3 |

1. Students must earn a C grade or better in all mandatory courses to continue with the minor.
2. Students are required to take a minimum of two 300+ level courses.
3. Students must earn a minimum of 20 credits.

Note: Math 0xx level courses cannot be taken to satisfy the minor. Additionally, if MATH 101 is a requirement of the student's major, then it can't be counted towards the minor.

Students are free to choose these courses either from Pure Mathematics or Applied Mathematics or both. Depending on the availability of the faculty, variety of courses can be offered within Pure and Applied Mathematics.

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

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 101L. Mechanics and Thermodynamics Lab.

Experiments include: simple harmonic motion observed through webcam, waves and oscillations, standing waves, resonance, moment of inertia of a tennis ball, rotational mechanics, rotational inertia, rotational friction, conservation of energy, latent heat of liquid nitrogen, heat capacity of solids, determined from boil-off of liquid nitrogen, conservation of momentum - elastic and inelastic collision, rotational motion, mass on a spring, basics of uncertainty analysis, Maxwell's wheel, light polarization, heat transfer, conduction, convection, Newton's law of cooling, temperature oscillations, Fourier analysis.

PHY 102. Physics II: Electricity & Magnetism.

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

PHY 102L. Electromagnetism, Optics and Modern Physics Lab

Experiments include: determination of Curie point of a Ferro-magnet by controlled electric heating, observing Hall effect in semiconductors, magnetic moment of a conductor loop in a magnetic field, determining Verdet's constant, Frank-Hertz Meter, determination of Planck's constant from the spectrum of a tungsten light bulb, optical activity of a chiral (sugar) solution, imaging electron trajectories using a magic eye, image analysis, Lenz's Law, band gap measurement of pure Ge, magnetic pendulum, exploring phase portraits, chaos, bifurcations, Spectral Lines of different gasses

PHY 201. Modern Physics

Topics include: principle of relativity, Lorentz contraction and time dilation, Lorentz transformation of space and time, relativistic definitions of momentum and energy, Lorentz transformations of momentum and energy, Lorentz transformations of wavenumber and frequency, Planck's constant, photo electric effect, Compton scattering, Bohr's postulate and the structure of atom, postulates of quantum mechanics – states as vectors and observables as operators, Schrödinger's wave equation – time dependent and time independent, one dimensional quantum well, simple harmonic oscillator – annihilation and creation operators, ideal gas equation and energy associated with each degree of freedom, Maxwell velocity and speed distributions, Boltzmann distribution, identical particles (fermions and bosons) in a one dimensional quantum well.

PHY 202. Quantum Mechanics

Topics include: Schrodinger's equations and operator algebra, quantum systems with various different types of potentials, angular momentum, rotations and other symmetry operations, spin in quantum mechanics, time independent perturbation theory in quantum mechanics, time dependent perturbation theory in quantum mechanics, scattering theory in quantum mechanics.

BIO 101. Cell Biology and Public Health

This course provides an introduction to cellular and molecular biology and builds its connection with human biological processes; there will be a prime focus on developing skills to communicate biological concepts to laymen. Topics include: Prokaryotic and eukaryotic cells, structure and function of cellular organelles, cells tissues and organ systems, cellular respiration, movement across cell membranes, enzyme mechanism and inhibition, cellular reproduction, DNA replication, transcription and translation, Mendelian genetics, blood groups, introduction to the immune system and vaccines, dengue viral infection, and cancer development.

BTEC 101. Introduction to Biotechnology

This course provides an introduction to the fundamentals of biotechnology and its applications. Topics include: overview of biotechnology and its current importance in society, rapid growth of biotechnology in agriculture, environment, industry and medicines, antibiotics/antibodies biotech. Emphasis will be placed on DNA manipulation sciences including genetic engineering, gene cloning, plasmids as cloning vectors, restriction enzymes, DNA ligase, PCR, biotransformation, E. coli host as model system, mutagenesis, manipulation of expression of desired DNA, strategies of protein purification, stem cell biotech and ethics of biotechnology.

Prerequisite: School / college level Biology or chemistry or permission of instructor

BTEC 101L – Biotech Laboratory Practices

This laboratory course provides practical insights into the role of DNA sciences in achieving and improving the technological applications to develop products to improve quality of life. Topics include: basic operations used in biotech lab, DNA extraction from living organisms, DNA cut and clone, making lots of copies of DNA, overproduction of protein, purification, plasmid isolation, DNA manipulation by PCR, transformation of *E. coli* with a recombinant plasmid, DNA purification and quantification, calorimetric detection of DNA, visualizing of DNA on gel electrophoresis and DNA fingerprinting.

Co-requisite: BTEC 101

MATHEMATICS**MATH 012. Pre-Calculus**

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, and discontinuities and modeling functions to fit real data.

MATH 101. Calculus I

Topics include: functions, limits and continuity, power rule, product and quotient rule, the chain rule, differentiation rules, concavity and inflection points, rates, approximations, maxima / minima, definite and indefinite integrations, area, volume and arc length, approximation of definite integrals, improper integrals and L'Hôpital's Rule.

MATH 102. Calculus II

Topics include: vectors and matrices, parametric equations, polar coordinates, functions of several variables, partial derivatives, vector calculus and multiple integrals, Lagrange multipliers, Green's, Gauss' and Stokes' theorem.

Prerequisite: MATH 101

MATH 201. Differential Equations

Topics include: first order ordinary differential equations (ODEs) (Separable, linear, homogenous and exact equations), Second order ODEs (Non-homogenous equations

and their solution using method of undetermined coefficients and variation of parameters), differential operators, ODE models of electric circuits, systems of ODEs, orthogonal functions and Fourier series solutions, partial differential equations (PDEs) (wave, heat and Laplace equations), solutions using Fourier and Laplace transforms.

Prerequisite: MATH 102.

MATH 205. Linear Algebra

Topics include: vectors and vector algebra, matrices (matrix algebra, elementary row and column operations, transpose, rank and inverse of a matrix), linear transformations, systems of linear equations and their solutions, orthogonality, least squares, eigenvalue and eigenvectors, singular value decomposition, lines, planes and surfaces in 3D.

SCHOOL OF ARTS, HUMANITIES & SOCIAL SCIENCES (AHSS)

BSC (HONOURS) IN

SOCIAL DEVELOPMENT AND POLICY

FACULTY MEMBERS

Ali, Fahd, Assistant Professor

Ali, Hasan, Assistant Professor

Azhar, Shahram, Assistant Professor

Baig, Noman, Assistant Professor

Haris, Muhammad, Assistant Professor

Jamali, Hafeez, Assistant Professor and Interim Program Director

Minot, Severine, Assistant Professor

Muhr, Thomas, Assistant Professor

Mulvany, Aaron, Assistant Professor

Naqvi, Nauman, Assistant Professor

Saroca, Cleonicki, Associate Professor

Arzu Center for Regional Languages and Culture:

Ahmad, Afzal, Associate Professor

Farrukhi, Asif, Associate Professor and Director (Interim Dean, AHSS)

Nadeem, Inamullah, Lecturer

Shah, Sahar Imdad, Associate Professor

Visiting Faculty:

Nizamani, Haider, Visiting Associate Professor (Fall 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 an inter-disciplinary and 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. 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, experiential learning through a practicum. 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 be exposed to seminal ideas in social and economic thought that will enable them to understand and critique the processes of economic growth, development, and social change. They will explore how major development concerns such as poverty, gender 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 an inter-disciplinary approach to the study of social issues, the program integrates perspectives and skills drawn from a wide range of disciplines, including Anthropology, History, Economics, Sociology, Political Science, Religious Studies, Philosophy, Literature, and Environmental Studies. In this way, the program will equip students with inter-disciplinary thinking and analytical skills that will allow them to understand and tackle a range of problems and challenges in their professional and scholarly careers.

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 – incorporate lived experience and vernacular sensibilities into policy design at the national and international levels.

B.SC. (HONORS) IN SOCIAL DEVELOPMENT AND POLICY: REQUIREMENTS FOR THE MAJOR

All students majoring in Social Development and Policy are required to complete a total of 35 course requirements. Students must maintain a minimum grade of C+ (2.33 GPA) in SDP major credit requirements in order to graduate with this degree.

All SDP majors must complete the following six (6) courses:

- SDP 101 Development and Social Change
- SDP 201 Qualitative Research Methods (QRM1)
- SDP 202 Quantitative Research Methods (QRM2)
- SDP 203 Social Theory
- SDP 301 Public Policy
- SDP 303 International Political Economy (Mandatory Elective Choice)

Students must also complete any three (3) upper level SDP electives. In addition to these courses, all SDP students must fulfill a language requirement, a Practicum, and a Major Research Report (MR2) or an Honors Thesis to complete the program requirements.

LANGUAGE REQUIREMENTS:

All students at Habib University must complete URDU 101, Jahan-e-Urdu, as part of the Habib University Liberal Core requirements. All SDP majors must also fulfill a vernacular language requirement by successfully completing at least three (3) sequential courses in a single language, for example Sindhi or Punjabi. For full language offerings refer to the Arzu Center for Regional Languages and Cultures.

PRACTICUM:

All SDP majors are required to complete a Practicum, which is an application of the skills and competencies learned in SDP Program. This practicum must be a minimum of six (6) weeks and can be broadly construed in consultation with an assigned practicum adviser.

MAJOR RESEARCH REPORT:

All SDP majors must complete a one (1) semester capstone project, called a Major Research Report (MRR), representing a significant exploration of some aspect of the intersection of society and policy. This project will take the form of an independent study developed under the guidance of a faculty adviser. Understood broadly, this could take the form of a literature review, research prospectus, policy discussion, documentary, interactive informational website, etc. It requires students to demonstrate advanced analytical and critical skills, method of comparing and contrasting, and other such scientific understanding. Students pursuing this option must declare their intention at the beginning of the semester of choice and choose a faculty supervisor at the same time.

HONORS THESIS:

All SDP majors have the option to earn their degree by writing a year-long Honors Thesis instead of the Major Research Report (MRR). The Honors Thesis is a much more substantial research project in which the student will explore a topic, building on existing knowledge by using qualitative and/or quantitative techniques. Thesis writing is an exercise in developing in-depth research that speaks broadly to the social, cultural, and/or economic issues of contemporary societies. The Honors Thesis must be guided by a committee comprising at least two (2) faculty members. Students intending to complete an Honors Thesis must declare their intention at the beginning of their final academic year and submit a prospectus at the end of their penultimate semester. Students wishing to pursue the Honors Thesis option must maintain a cumulative GPA of 3.0 or above.

| Course Category | Number of Courses to complete |
|---|-------------------------------|
| University Requirements | |
| Habib Liberal Core (Includes Creative Practise) | 11 |
| Social Development and Policy | |
| Foundational Theory and Method | 6 |
| Field Practice | 1 |
| Electives (at least 3 upper division) | 6 |
| Honors Thesis | 2 |
| Major Research Report with 1 upper division elective* (In lieu of Thesis) | 2 |
| Other Requirements | |
| Regional Language Requirement | 3 |
| AHSS Requirement | 1 |
| Free Electives | 5 |
| Overall | 35 |

REQUIREMENTS FOR THE MINOR

To earn a minor in SDP, students must successfully complete Development and Social Change, Qualitative Research Methods (QRM1) or Quantitative Research Methods (QRM2), and Public Policy. Students must also take two SDP electives, one of which must be an upper level course (300 or 400).

COURSE DESCRIPTIONS

MANDATORY SDP COURSES

SDP 101: Development and Social Change (AHSS Requirement)

The purpose of this course is to answer key questions about development and social change by introducing students to the history, theory, and the contemporary practice of development. The concept of 'development' will be defined within the broader field of social sciences. The implications of development initiatives on poverty, gender, health, education, and disaster preparedness will be critically examined from an inter-disciplinary perspective. Our approach to this course will be critical humanist and interpretivist. We will be shifting the analytic focus from instrumental outcomes of development policies to the meanings, implications, and consequences they have, as expressions of societal beliefs and values.

SDP 201 Qualitative Research Methods (SDP Major)

Combining theory and hands-on practice, this course will expose students to key approaches and methodologies of research design. They will learn and practice a variety

of qualitative research skills including participant-observation, interview, and focus group and survey techniques. Alongside, they will study and debate the ethical complexities of conducting scholarly research and implementing both research and development projects.

SDP 202: Quantitative Research Methods (SDP Major)

Quantitative Research Methods will introduce various techniques of quantitative analysis used within social sciences. This is a foundational course to teach basic mathematical and statistical techniques used in social science research. Students will cover several topics including functions, graphs, mathematical relationships, and statistics and probability, among others, to best equip students with analytical methods for use both in the classroom and the field. This course will also prepare students to take higher level quantitative research methods courses offered in the program.

SDP 203: Social Theory (SDP Major)

This course introduces students to foundational concepts and theories in the social sciences. Starting with Enlightenment thinking and the emergence of positivism and empiricism, this course tackles this major transition in the way social order is conceptualized and theorized. Students will be exposed to key social theorists, including Marx, Weber, Durkheim, as well as some of their legacies. Students will tackle different levels of analysis, understand structural forces and societal dynamics, and engage in social interaction analysis from a social-psychology perspective in contrast to the grand theory tradition.

SDP 301: Public Policy (SDP Major)

The purpose of this course is to introduce students to the world of public policy. The concepts of “public” and “policy” will be critically defined within the broader field of governance. Students will engage in an analysis of the genealogy, conditions of existence, and effects of specific policies in various sectors. Our approach to this course will be anchored on mixed methods, including critical humanist, and positivist approaches. Students will be exposed to reading material from a wide variety of disciplines. We will consider the empirical dimensions of policy building and impact from the perspective of multiple interpretive communities.

Prerequisites: SDP 101, SDP 201 or SDP 202.

SDP 303: International Political Economy (SDP Major)

Students majoring in SDP will have to fulfil this requirement as a mandatory elective, by completing one third-year elective course, which tackles the dynamics of International Political Economy. Various options will be offered yearly to allow students to complete this requirement.

Prerequisites: SDP 101, SDP 201 or SDP 202.

REGIONAL LANGUAGE REQUIREMENTS

LANG 101: Sindhi Sikhiya I

This introductory course introduces students to Sindhi language. It covers the fundamentals of Sindhi Language including the basic competencies in reading, writing, and speaking.

LANG 201: Sindhi Sikhiya II

This intermediate course enhances students' reading and writing skills in Sindhi language. Students will be exposed to folklore rhymes, folk songs, fables and tales, and poetry. The course will introduce major Sindhi language Sufi poets and prose writers from 1843-1947. At this level, students will learn to contextualize readings in a larger Sindhi cultural context.

LANG 301: Sindhi Sikhiya III

This advanced level course aims to equip students with more in-depth reading and writing skills in Sindhi language. The students will read classical and colonial Sindhi poets and fiction writers, and will develop interpretative tools to understand Sindhi literature and culture.

LANG 102: Punjabi Rachna I

Punjabi Rachna will enable students to develop a basic understanding of Punjabi language in the context of Punjabi culture, idiom, linguistics and literature. This is the first of a three course sequence, with each module being interlinked in a systematic flow starting with an emphasis on linguistics, moving on to literature and finally to history of the Punjabi language.

LANG 202: Punjabi Rachna II

Punjabi Rachna II is a continuation of Punjabi Rachna I. Students will hone their Punjabi language skills further and be exposed to more complex literary forms.

LANG 302: Punjabi Rachna III

This course is intended for those students who have already completed two semesters of 'Introduction to Punjabi' or who have equivalent level of proficiency. Speaking, listening, reading and, writing, all four skills will be taught while taking care of interpersonal, interpretive and presentational modes. Learning activities will be designed to help students understand main ideas and significant details in Punjabi texts, including written and audio-visual texts. Students will review and utilize knowledge of previously learned grammar and vocabulary and build on their fluency and competency through speaking, listening, reading and writing. Additionally, students will become better acquainted with the cultural and social norms of the Punjabi language and be

better able to internalize and converse in it. This class will also introduce literature pieces with an aim to help students achieve competence in interpreting Punjabi texts in different genres as well as engage in discussion on a wide variety of literary texts on different subjects with other Punjabi speakers. The types of text will include but not be limited to history, politics, short stories, 2 movies, essays, letters biographies and travelogues/travel diaries and the students will analyze, criticize, and discuss them with one another. Punjabi will be the sole medium of instruction during this course.

OTHER PROGRAM REQUIREMENTS

SDP 302: Practicum

The major purpose of the practicum is to enable students to acquire skills and competencies in their interaction with individuals, communities, development agencies, and organizations. Moreover, students are expected to contextualize their learning as the practicum allows students to select agencies working on a range of thematic areas. Students will complete a specified number of hours and meet other practicum requirements. Although every practicum experience will be different, learning outcomes will include building networks, engaging in advocacy, and working with various stakeholders.

Research:

Students majoring in SDP will have the choice to complete a Major Research Paper (MRP) plus an additional upper level SDP elective for a B.Sc. or write an Honors Thesis for a B.Sc. (Honors).

SDP ELECTIVES

FALL 2016

ANT 101: Introduction to 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. 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, and nature and culture.

ECON 101: Principles of Microeconomics

This is an introductory course that teaches the fundamentals of microeconomics. The course introduces the concept of supply and demand that supposedly determine an equilibrium in a market economy. It studies consumer behavior and analyze how consumers make choices. We also study firms and their behavior in the market, particularly how they take decisions to optimize their output under different market structures.

DEV 101: Introduction to Human Geography and Development

This course introduces students to human geography as one approach to the study of the interdisciplinary field of development. Students will learn key concepts in human geography (e.g., place, space, scale, landscape, territory) as methodological tools for the study of the complex, contradictory and conflict ridden political, economic, cultural and human-environmental interconnections and interdependencies (processes, flows, patterns) and how they change over space and time. The course thus aims to engender a critical geographical perspective on the past, present and future development of the social world. Thematically, we will focus on such topics as: nature-society relations; population, resources and the environment; migration; urban geography; production, consumption and exchange; inequalities and exclusions; and geopolitics.

POLI 101: Conflict and Cooperation in World Politics

Why study International Relations? What are International Relations? How do we study International Relations? In this introductory course we will attempt to answer these questions by using evidence and conceptual tools provided by disciplines such as history, political science, and political economy. In this journey students will be introduced to key concepts and historical approaches in International Studies, tracing the patterns of conflict and cooperation between nations, states and social groups in the world, concentrating on the last half of the twentieth century and the beginning of the twenty first. We examine important problems in the contemporary world from the perspectives of different social sciences, focusing particularly on conflict, cooperation, culture, and human rights.

SOC 201: Socialization and Cultural Identities

The objectives of this course are to understand how shared cultural frames of reference produce collective consciousness, to allow students to develop their capacity for reflexive introspection, and to identify the processes that contributed to making them “who they are.” This course explores the processes by which people are socialized: that is the way they learn and integrate the cultural rules and norms of their social, political and economic environment. In the first half of the course, key postulates of social psychology will be presented and debated, drawing from the work of Freud, Piaget, and Kohlberg. The course seeks to bring together students’ subjective experiences and the

processes of cultural production and reproduction, informed by modern theoretical frameworks.

SOC 202: Gender and Sexuality in Asia

This course examines gender, sex and sexuality in contemporary Asia. We consider the ways in which people perform gender in everyday interactions and the diversity of femininities, masculinities and sexualities created out of those interactions. Drawing on a range of feminist scholarship and other literature, case studies, reports, NGO material, and media, we explore gender relations in the region through transnational, intersectional perspectives. The course addresses social relations of gender (material practices and institutions), and gender as discourse – the politics of representation. Activism and social change are key themes addressed in this course.

PHIL 201: Philosophy in the Anthropocene

Whether we understand it as a new geological epoch and/or as part of a conceptual framework, a new discursive formation, so to speak, evolving in response to real crises in the present, the Anthropocene calls upon us to think about many urgent philosophical questions. For instance: what is the hermeneutical task in the face of emerging narratives on the decline of the biosphere; what does it mean to think about historical difference now and the role that nature plays in modern history; how do we determine normative foundations for a new politics and aesthetics; and why is it crucial now to revisit and rejuvenate the critique of modernity? In this course, we will be reading contemporary and historical philosophical texts to learn about ideas that give us the capacity to productively engage these and other pressing questions. Course materials include excerpts drawn from scientific literature, literary journalism, novels, and films. Fulfills Hikma 2 elective requirement

LIT 201: Ghalib and Indo-Persian Poetics

This course is an introduction to the Urdu poetry of Mirza Asadullah Khan Ghalib (1797-1869) and explores it both as an individual entity as well in the context of the influence of Sabak-e-Hindi, Indo-Persian poetics, on his themes and metaphors. It will focus on intensive reading and analysis of his Urdu ghazals in order to discover patterns of intertextuality in their content and treatment. The course will enhance the Urdu language skills of students and deepen their understanding of ghazal as a genre in general and the complex phenomenon of Ghalib's poetry in particular. Students will also be introduced to some of the major poets of the Indo-Persian style, thereby providing a window into the meanings and cultural legacies of poetic thought and tradition in South Asia.

ECON 301: Marxian Economics

Marxian Economics is a comprehensive analytical framework to understand the

functioning of capitalist economies and their relations with each other. The course aims to develop an understanding of this framework and Marx's critique of capitalist mode of production by closely reading volume one of *Das Kapital*. The course aspires to give students necessary theoretical grounding in Marxian Economics to enable them to take more advanced courses. Students will learn that Marxian economics exist as an alternative framework to understand the workings of an economy. The course will particularly focus on value creation and its distribution during the production process. Students will also learn how prices are determined within the Marxian framework and how Marx explains the crisis in capitalist mode of production.

ANT 301: Anthropologies of Possibility

Anthropology examines what it is to be a part of human society. Science fiction, on the other hand, is often dismissed as escapist pulp. But the best science fiction is as descriptive as it is speculative, exploring what it means to be a part of contemporary society by pushing against the boundaries of what society is and what it can be. This course collapses descriptive ethnography and science fictive speculation and borrows from the techniques of speculative design in order to explore how the methods of anthropology can be applied to contemporary problems. Rather than repeating the old dictum that anthropology should be "objective," this course embraces the notion of a politicized anthropology that must engage with thorny ethical issues in the process of imagining and instigating possible futures.

LIT 301: The Unwritten Epic: Reading the Partition in Fiction & Film

This course explores the historical events of 1947 and thereafter through novels and films focusing on various aspects of the continuing saga of rupture and disarray in South Asia. The events of 1947 and the emergence of separate states is discussed as a part of a longer process leading to 1971 and other events across South Asia. This will focus on selected fictions of Manto, Qurratulain Hyder, Attia Hossain, Khushwant Singh, Bapsi Sidhwa and Bisham Sahini; and selected films. This course would "read" historical events through literary and film narratives.

Course Requirements: Pakistan and Modern South Asia and Jahan-e-Urdu.

SPRING 2017

ECON 121: Principles of Macroeconomics

This is an introductory course in economics, which focuses on teaching basic concepts required to understand the workings of a market based economy. We will focus on markets and what role they play in modern capitalist economies. The role of the government in managing economies will be emphasized. Particularly how money is created and circulated in society (via banks), how is the interest rate determined; where does inflation come from; how international trade impacts a small-to-medium sized

economy like Pakistan. These and other questions will be explored particularly in the context of Pakistani economy.

SOC 121: Family Life in Asia

This course examines family life in the context of 'Asian' societies and diasporas through a gendered, intersectional and transnational lens. We will critically reflect on how being a family member affects people's lives, including our own. While the course is interdisciplinary, it draws primarily on sociological and feminist theories to understand family life and the ways in which gender intersects with race, ethnicity, class, sexuality, religion, nationality, age, and so on, to shape the experiences of family members. We address the materiality of family life as well as social constructions that represent particular ways of being in a family. Given the history of colonization, neo-colonialism and labor migration in 'Asia', the effect of migration on family life is another important theme in this course.

ANT 221: Catastrophe and Culture

This course examines relationships among historical, contemporary, and future instances of disaster and human thought and activity. Taking a purposefully interdisciplinary approach to the complex issues surrounding disaster, recovery, relief, and subsequent development aid, the course considers the role of culture, religion, art and technology in allowing communities to depict, recall, understand, narrate, predict, cope with, mitigate or prevent, and even contribute to the impact of disasters.

PE 221: Political Economy of Agrarian Change

This course will cover the political economy of rural change as societies transform from pre-industrial forms to an industrial economy. In addition, it will consider the state of agricultural class relations worldwide in the context of globalization. We will compare the classical transition as described by Karl Marx in *Capital* to other contemporaneous changes occurring in the world. We shall also consider how these changes differ in countries that elected a socialist path of development as compared to a capitalist one. We shall be particularly interested in examining issues of class differentiation, the various debates on "modes of production," the relationship between productivity and size of holding, changes in the distribution of assets, the creation of wage labor, gender roles, institutional changes, among others. The course will end by examining whether the classical agrarian question exists in a globalized world.

DEV 221: Education & Development

This course introduces students to major debates on the relationships between globalization, education and processes of development in the global South. Students will acquire the conceptual, theoretical and empirical foundations for a critical analysis of how "global governance of education" shapes national education policy making in the developing world today. This will be done within an historical approach to education for

national development, from the period of decolonization, onward. Themes discussed may include: structural adjustment and education; the global knowledge economy, lifelong learning and ICT; trade in education services; education and conflict; popular education; South-South cooperation in education; the Sustainable Development Goals (SDGs) and education.

PP 321: Health Policy and Strategies in Pakistan

This course will focus on the overall welfare conditions and health policies of Pakistan in key areas including maternal and newborn health, nutrition, infectious diseases, non-communicable diseases, disaster reduction and emergency preparedness. This course begins with an overview of the health care system in the public and private sectors and moves on to strategies and human resource elements through which health policy is implemented. Students will benefit from gaining a more in-depth understanding of the structures that regulate the administration of healthcare and the impact of policies and programs in this sector.

ANT 321: Cultures of Greed

This course explores discourses on greed and avarice in historical, literary, and anthropological scholarships. The course raises a key question of our time: how the discourse on excess shapes desire (*khuwahish*) for money and wealth. By bringing desire at the heart of the discussion of money and capitalism, we open an existential approach to the study of economics. The debate comes closer to the self, to the visceral and corporeal experience, as well as to the human soul. This line of inquiry demands that students read historical accounts on avarice and greed while asking some key questions. Why was excessive desire for money considered a sin or vice in pre-modern times? When did the epistemological break from 'greed is sin' to 'greed is good' occur? These questions offer students a critical insight into the nature of excessive desire for money, and explains some of the radical causes of human suffering.

ANT 322: Globalization and Social Movements

This course tries to understand globalization as a constituent of our lives and actions from a variety of angles, including the problem of citizenship, the nature of violence in the contemporary world, and the meaning of political change. It questions the prevailing understanding of globalization as flows of people, commodities, and ideas in an increasingly frictionless global public sphere. Instead, we explore the economic and cultural parameters of the globalizing process and how it unfolds as a contested articulation of nation, state, and community. Secondly, the course looks at the ethics of globalization and responses to it in the form of social movements. We will study the emergence and constitution of social movements and what challenges they face. We will consider whether responses to globalization generate a deeper understanding of its working, opportunities, and threats.

Prerequisites: SDP 101, SDP 201 or SDP 202.

Fulfills IPE requirement

HIST 321: Esoteric Methods

This course will build on the trajectory of Hikma 1 to explore the various practitioner methods traditionally used in Oriental and Islamic philosophy and spirituality -to demonstrate to the students the ways of attaining 'truths'. The course will give the students in-depth knowledge of esoteric practices, as found in medieval texts. The content will be complemented by the dying contemporary knowledge of these sciences - snippets of which have nevertheless been preserved in South Asia. The course will help students understand the plurality of Islamic culture and spirituality.

PHIL 321: Philosophy and the Question of Justice

We are confronted by the question of justice while thinking about many of the crises in the contemporary world. These include environmental degradation, disparities in wealth distribution, the spirit of revenge inherited from history, and the challenge of inculcating virtue in the self. This course serves as an introduction to some of the prominent philosophical articulations of the idea of justice, and its metaphysical and political foundations. Along with theoretical explorations, we will be thinking about issues of applied ethics. What does it mean for there to be justice at the level of inter-personal relations and in terms of practical politics?

Fulfills Hikma 2 elective requirement

BA (HONOURS) IN

COMMUNICATION STUDIES & DESIGN

FACULTY MEMBERS

Dehlavi, Jamil, Associate Professor
Grosoli, Marco, Assistant Professor
Heidingsfelder, Markus, Assistant Professor
Humayun, Sarah, Assistant Professor
Javeri, Sabyn, Assistant Professor
Khan, Muhammad Gulraiz, Lecturer
Khan, Muqem, Associate Professor
Mian, Rahma, Lecturer
Minwalla, Framji, Associate Professor and Program Director
Zaidi, Saima, Assistant Professor

VISITING FACULTY

Ahmed, Nameera, Lecturer
Iqbal, Haya Fatima, Lecturer

VISION

The program in Communication Studies and Design allows students to construct an interdisciplinary major in the arts and humanities that integrates historical investigation, critical analysis and aesthetic practice. Our faculty are committed to engaging students in a conversation as much about the histories and theories of communication and design as about critical contemporary challenges that will define our future.

Core courses offered by the department will introduce students to a range of texts, movements, theorists, artists, designers, filmmakers, and writers from diverse cultures and historical periods, thereby training them in the close, comparative study of different artistic, cultural, and social forms. Studio work will form an essential component of most courses so that students can learn how to build and shape even as they refine their critical sensibilities. Our graduates will be alive to the transformative capacities of communication and design, and will learn to apply their expertise with deliberate care, purpose, and responsibility.

In short, our mission is to matriculate thoughtful and articulate practitioners, students who can exercise sophisticated critical judgment about the work they produce.

WHAT IS COMMUNICATION STUDIES AND DESIGN?

We define both Communication and Design broadly. Design refers to any human

practice that requires the thoughtful, methodological, coherent reconstruction or reproduction of our material or mental worlds. Communication refers to any process that transmits, produces, reproduces, structures, embodies, or transforms culture, and that shapes and influences our interpersonal and social behaviors and relationships. Both are fundamentally human activities that bind us to each other and to the societies in which we work and play. And while both emerge from historically grounded expressive practices, these practices, in their most expansive articulation, are mutually interdependent.

Our curriculum embraces inter- and transdisciplinary instruction in the arts and humanities, with a specific focus in communication and design, because we believe no single disciplinary approach makes fully available to thought and practice the rich variety of communication processes and designed worlds we experience, perceive and inhabit today.

HOW WILL STUDENTS BENEFIT BY ENROLLING IN THIS PROGRAM?

Both communication and design are everywhere. Our cities, our homes, our mobile phones, our furniture, our cars, the books we read, the billboards we drive past, the music we hear, the movies and television programs we watch, the clothes we wear—someone somewhere made a sequence of choices that evolved into these specific products. We are so accustomed, however, to walking through our artificial worlds conversing, communing, texting, arguing, relating, imparting, announcing, reporting, writing, filming, and photographing that more often than not we take the worlds and our actions in them for granted. We are blind and dumb to the very artificialities that serve as foundation and structure for our lives.

In addition to this, both activities (designing, communicating) are interdependent. We rarely separate our perceptions and judgments about design from the meaning these design provoke. And all good authors, advertisers, filmmakers, journalists, and politicians—to name a few professional communicators—know that effective communication depends crucially on deliberate design.

Students who complete a BA (Honours) in Communication Studies and Design will be able to think systematically, critically and complexly about the processes, methods, and social and cultural effects of both communication and design. These abilities coupled with the skills developed and refined through studio practice will teach students how to move methodically from an idea to its material realization.

DEGREE REQUIREMENTS

In order to graduate with a BA (Honours) in Communication Studies and Design, students must complete 36 courses. In addition to the eleven courses that comprise Habib University's Liberal Core, all CSD students must take the following core courses:

AHSS CORE (2 COURSES)

Development and Social Change

Shaping Modernity: Art and Thought in the 19th Century (required for the class of 2020)

CND CORE (5 COURSES)

TransDesign Practicum (required for all CND students)

Elements of Aesthetics (required for all CND students)

From Runes to Bytes: Media Histories, Theories and Practices I & II (required for the class of 2018; members of the class of 2019 may take this course for elective credit)

Mathematics for Communication and Design (required for the class of 2020)

Interdisciplinary Senior Seminar (1 Course) (required for the class of 2019 and 2020)

Communication and Design Capstone (2 courses) (required for all CSD students)

ELECTIVES (15 COURSES)

- 7 CND
- 2 SDP
- 2 Arzu Centre
- 4 free electives

(For students in the classes of 2018 and 2019, already completed film and design studio courses will count as electives)

CAPSTONE PROJECT

The two-semester capstone project requires students to bring together what they have learned during their time as undergraduates through the creation of an original work in any medium. The final submission will consist of the work itself, a journal that records the process of making from idea to fulfillment, all drafts/sketches/notes, and a 25-30pp critical thesis that situates the work in both an aesthetic and cultural context. Through the written, students have the ability to demonstrate to the faculty a sophisticated understanding of both structures and methods of design and processes and effects of communication.

UPPER LEVEL WRITING REQUIREMENT

All CSD students need to complete an upper level writing requirement. The requirement may be fulfilled through any course, including studio courses. In order to complete the requirement, students must submit an extended research essay, 5000-7000 words, on a subject of their choice related to the substance of the course they select.

FALL COURSES

*All 300 level core and elective courses are open to second-year students with permission of the instructor.

CND 105 Shaping Modernity: Art & Thought in the 19th Century

This course will introduce students to major developments in art, literature, design, and media communication during the long 19th century. While the course focuses on both formal and substantive close readings of individual texts, the essay and research assignments require both comparative and interdisciplinary methodological approaches to the study of cultural production and dissemination. Students investigate how different forms and practices of art 'speak' to one another, how they argue or agree, how they diverge from or conform to normative criteria. In this regard, one of the central aims of this course is to assess the cultural and technological impact of imperialism in South Asia, and the reciprocal appropriations of South Asian philosophy, culture, and art by Europeans.

To understand aesthetic production at its deepest level, students must have some understanding of how an artwork is made. In order to accomplish this, students are required to reproduce at least one form of aesthetic practice as performed/developed in the 19th century.

Themes explored include post-enlightenment reason vs. passion, the emergence of media spectacle as an urban phenomenon, the stylistic shift in European aesthetic practice and production from neoclassical to realist, the establishment of Urdu literary culture, the development of political journalism, the rise of the modern university, the emergence of culture as a differentiated category and the explicit articulation of aesthetic criteria as the basis for judgment and taste, the impact of technologies of reproduction (the gramophone, the camera, the typewriter) on the production of music, fine art, and literature, and the deliberate rethinking and reconfiguration of urban space.

CND 121 Introduction to Photography

In the 21st century, the image (still or moving) has become one of the primary ways we experience and understand the world we inhabit. The perfect photograph often has the ability to communicate significantly more meaning and emotion, and with quicker impact, than pages and pages of precise, written description. This course will introduce students to technical and aesthetic issues related to making, manipulating, and understanding perfect pictures. Topics covered include lenses and optics, light and sensors, the creation of optical effects, perspective and depth of field, framing and composition, color theory and management, and a basic introduction to Photoshop. In addition, the course will include a brief history of photography, especially the development of technologies from the camera obscura to range of digital apparatuses we use today.

CND 122 Illustration as Communication

This course will introduce students to structures, styles and processes of illustration. Students will work on projects to address current social, political, and ideological questions. Assignments will be designed to explore some of our local taboo ideas, myths, psychology or scientific theories, to be able to communicate complex ideas through illustration. Students will develop a proposal defining their own argument on a certain issue, illustration style, voice and emotional content. Students will be encouraged to experiment with various forms and styles of illustration to help them find a unique graphic 'voice'.

CSD 211 From Runes to Bytes: Media Histories, Theories, and Practices I

This year-long course introduces students of communication studies to the central themes, issues and debates of our discipline, as well as to the stakes of historical inquiry and to relevant practical skills. It examines the factors that influence the media and, in turn, examines the influence of media on society. In the first semester we will be looking at theories about the emergence of language and its consequences for the most important media of all: our mind. We will study the origins of writing, from Sumerian cuneiform to the invention of the alphabet, learn about the dramatic social and cultural consequences of the reinvention of the printing press, and help you develop practical skills that both interpret and shape thought in the realm of media practice and theory.

CND 221 Braver Newer Worlds: Citizenship in the Digital Age

This course will introduce students to key topics and themes in digital media and networked technologies and examine how technology intersects with cultural, social and political values. We will investigate digital media production in a cultural, historical, economic and technological context. By doing so we will be able to situate ourselves in this particular moment in history and take a critical look at the ubiquitous content that we are consuming as well as producing. Along with reading key texts and acquainting ourselves with key thinkers in the areas of cultural production, critical theory and digital politics, we will be watching a lot of videos and spending a good amount of time on Facebook!

CND 222 Narratives across Media

How do different media affect the same story? In this class we will examine carefully the basic elements of good storytelling, paying attention to the manner in which character, plot, and setting help create a memorable narrative. Through a close reading of a range of media texts, students will learn to think complexly about the potential and the limits of representational practices inherent in a variety of media platforms. They will learn how to transform abstract/textual concepts into concrete audio-visual forms and vice

versa. For their final projects, students will be required to create a proposed transmedia text informed by a sophisticated understanding of how media narratives produce meaning across various platforms, and in turn how the communication of this meaning is affected by the medium selected.

CND 223 (Re)Covering Ethnicities

This course assesses how we look at society through the lens of language and ethnicity, and how ethnicities are represented by different forms of media, both in times of peace and in times of conflict. Students will explore how ethnicity has been covered in the media across all five provinces of Pakistan, and in other South Asian countries. The class will then venture into Karachi to document a range of locations and material practices that signify the city's ethnic diversity: cooking and food, neighborhoods, music, wall art, clothing. Does the representation of ethnicity shift when looked at through the eyes of adolescents or women or the elderly or young adults? What kinds of histories and traditions inform our sociocultural sensibilities about ethnic identities? Students will cover their own stories through different mediums such as photography, print reporting, smartphone videography, and multimedia storytelling.

CND231 Film History and Theory: An Extended Introduction I

This year-long course is an in-depth overview of the 20th century's dominant medium of visual communication (and still of tremendous importance today): cinema. It will introduce students to a range of strategies through which filmmakers unlock cinema's aesthetic potential, to film's dominant narrative forms and genres, and to the complex interrelationships between films and the societies and cultures in which they are made. One central premise of this course is that no account of the evolution of cinema makes complex sense without substantial consideration of the different ways scholars and practitioners have framed thinking. In other words, history and theory work together, and will be intertwined throughout the course in what resembles a double-stranded structure that alternates consistently between these two inseparable approaches. This fall we will examine global filmmaking from its origins in the 19th century to WWII. M. Grosoli

CND241 Borders and Boundaries: South Asian and Middle Eastern Feminist Fiction

This course is an introduction to feminist writing in the colonial and postcolonial periods, focusing on how South Asian and Middle Eastern writers explore issues of gender, identity, violence, and belonging through prose and poetry in predominantly male literary traditions. The course consists of a series of exercises designed to develop essential aspects of critical thinking, and understanding of creative works through a selection of connected readings in a range of approaches, styles and techniques. Through writing practice, critical reading and reflection, the course explores cultural developments and political narratives in a range of genres, introducing students to

issues, techniques and contexts of feminist writing in the predominantly Muslim world. The course aims to develop skills in critical reading and analysis, and a broader understanding of the feminist discourse.

CND301 TransDesign Practicum

This practicum will provide the intellectual and contextual background for the transdisciplinary practice. The nature and practices of design have been shifting to engage with increasingly complex cultural, technological, and economic forces. Traditional, narrow design disciplines no longer seem adequate to address complexity and the “wicked problems” that challenge a 24/7, global culture. Exploring these changes both historically and critically, this course will contextualize both the pressures to maintain specialization in design and the forces that are currently challenging the disciplines.

What does it mean for design to address the immaterial as an outcome? Can experience and social outcomes actually be modeled through design, or are design outcomes simply affordances for existing social practices?

This practicum will explore literature and projects that argue that design can play a role in reshaping our cultural practices. We will investigate not only theory, but also design case studies that have had a profound, though at times subtle impact on our changing social dynamics. The main work of the class will be the readings, presentations and discussions, supplemented by a practice-based intensive and a mid-semester charrette. Each student will be expected to lead course discussions, and to make presentations in class based on the readings. (Open to 2nd year students with permission of instructor)

CND311 Elements of Aesthetics

Liberal arts education at Habib University, rooted in the philosophy of Yohsin and aesthetics, is one of its five paradigms. This course covers the fundamental principles of aesthetics and appreciation of beauty through the study of identified elements such as line, shape, form, space, colour and light manifested by different media and materials. The course deals with the grammar of the visual thinking, visual language, visual organization, visual relationship and aesthetical creation in the context of creative industry and “Kalakar” – a creative person.

Instructions in this course will ask students to engage in an act of creation and learn to distinguish best from the good that has to encompass both pragmatic and emotional considerations. The goal is to facilitate students by sensitizing their eyes and developing their powers of visual discrimination. The course also initiates the conversation and development of the sensory perception of literal/ambiguous form, leading to a process of selection and decision-making and its conversion into an actual application. The aim is to provide students an organized approach to the mechanics of design and ability to use this knowledge to a range of situations in developing for self-expression or industrial application. (Open to 2nd year students with permission of the instructor)

CND321 Film Production IIIa

Film Production III is a year-long course which follows on from Film Production II and is open to third year CSD students who have successfully completed last semester's course. During the first 4 weeks there will be a screenwriting module during which students will be required to individually write a short screenplay which they will shoot over the course of the Fall Semester. During the Spring Semester they will concentrate on post-production and the completion of their project.

The second aspect of this course is film appreciation. We will focus on understanding the distinctive language and complexity of cinema, and the way in which films stimulate our thoughts and feelings. In the Fall, we will explore the Western, an immensely popular Hollywood genre, from its beginnings in early American cinema to representative examples from other cultures. A selection of films will be screened; students will be required to participate in class discussion and write critical analyses of the films they watch.

CND324 Representing Reality:

Theory and Practice of Documentary Filmmaking

In this course we will be thinking about documentary filmmaking as well as making documentary films that think about documentary filmmaking. The challenge lies in turning this reflection on making documentary films into coherent, complex, self-reflexive visual explorations. By carefully studying both the histories and the theories of documentary film production—from early, mostly normative attempts to recent postmodernist variations—we will develop a keener understanding of the artificialities of the form, its credible fictions, even as we assess the plausibility of its representations, its distinct cinematic identity. Our study will be informed by watching a selection of documentaries from the silent era up to the present. These will include mockumentaries, docudramas, and fictional films that use non-fictional forms.

CND326 Film, Modernity, and the City

There is no single definition of “modernity”. In fact, several different modernities have appeared over the past few centuries: high modernity, late modernity, avant-garde modernism and so on, up to and beyond postmodernism. In its century-plus-long history, cinema has traversed most of these designations. This course sets out to disentangle these different conceptions of modernity by taking its cue from a wide range of relevant and exemplary films. We will explore a range of questions as: what makes a film modern? In what sense and under which circumstances can a film be modern? What kind of modernity can a given film stand for?

No overview of modernity could reasonably avoid taking into account the modern city. Modernity, especially in the Western world, has always been inseparable from a certain kind of urban development. Paris, in particular, has bound its fate as a metropolis to the emergence of modernity in its various forms since at least the 19th century. This is why our focus will partly be on the cinematic depictions of modern cities, and most notably

of Paris, during different decades: considerable attention will be given to films set in Paris, illustrating the special relationship between that city and modernity in all its forms. The final part of the course will examine cinematic depictions of non-Western, 21st century globalized megalopolises, in order to provoke comparisons between the latter and the Western modern metropolis (Paris in particular) through film.

CND 331 Design Inquiry: DIY City Karachi-Manchester

This course offers students the techniques of place-making; a process of creating spaces for civic engagement. In a rapidly corporatized world, place-making offers a radical tool to reclaim and create new public spaces for our cities in order to encourage community living and participation. The course teaches students some of the key conceptual frameworks of space-making and urban forms. Part of the course requires students to take field trips to various localities of the city, exploring the ways in which a public generates its own sense of place. Students will develop projects/prototypes designed by using readily available materials, technologies and localised manufacturing; these will be placed in the public realm in Karachi for creative interaction. A similar intervention will take place in Manchester, conducted by our partner, the MadLab. Working at the intersection of design, culture, science and technology, students will learn innovative, experimental, and playful ways of integrating the abstract with the material, and academic knowledge with public practices.

*DIY City is offered in collaboration with MadLab, Manchester; Numaish-Karachi; and the British Council.

CND332 Context-Aware User Interface Design

This course provides a theoretical, perceptive, and functional introduction to the fundamental aspects of screen layout design for user interaction. The class enables students to analyse and create graphical layouts and content development for the computer screen and handheld devices from the perspectives of the media industries and targeted clients. The class will focus on proposing ideas for emerging display technologies within the paradigm of design, analysis, and prototyping. Photoshop, Illustrator, and online augmented reality applications will be used during the course. The course also emphasises artistic and aesthetic creativity, and familiarizes students with the current trends, characteristics, and components of immersive interaction. Assignments will include a proposal for screen-based user interaction, and iconography for digital displays within the context of a modern framework and responsive design.

CND341 Enlightenment and Romanticism

The late 18th century, the age of Enlightenment, and the early 19th century will be the primary focus of this course. The Enlightenment is a key moment for studying the legacies of critical reason and creative theory and practice. Discourses of human reason, of nature and law, and of feeling and pleasure elaborated in the eighteenth century found their echo and counter-response in Romanticism. The literature, politics and

aesthetics of Romanticism emerged alongside the turmoil of the French revolution and continue to be invoked in radical politics and art today. Romanticism questioned the rationalistic discourses of the Enlightenment even as it fruitfully engaged with its thought and practice. This course will examine the distinctive traits of Enlightenment and Romanticism, and the oscillatory dialogues between them, by reading some of the key works of the 18th and 19th centuries in literature, politics and aesthetics.

Constrained by time, we will not attempt to be exhaustive but rather to devote concentrated attention to representative texts, particularly literary texts. We will ask how literary forms and philosophical theories negotiate the new political and social formations of the times under study. We will also inquire into the continuing vitality of and challenge to Enlightenment and Romanticism themes in the work of thinkers who are formative for present-day critical and aesthetic concerns.

SPRING COURSES

CND106 Shaping Modernity II: Art & Thought of the 20th Century

This course will continue the examination of major developments in art, literature, design, and media communications begun in the Fall, addressing seminal texts and events leading up to South Asian independence and partition, the rise of nationalisms, the development of avant-garde aesthetic practices, and processes of aesthetic and media convergence. In addition to studying exemplary texts and historically important developments, students will also need to reproduce at least one aesthetic practice in the manner this was made or performed in the 20th century. Writers, artists, filmmakers, movements, and designers considered include Joseph Conrad, Rabindranath Tagore, Pablo Picasso, Luis Bunuel, Virginia Woolf, the Bauhaus, Frieda Kahlo, Manto and the Progressive Writers' Movement, Satyajit Ray, Vittorio de Sica, Jean Genet, Jorge Luis Borges, Frank Stella, Jasper Johns, Sadequain, Gulgee, Andy Warhol and Pop Art, Cindy Sherman, Yasujiro Morimura, Don DeLillo, Frances Ford Coppola, Augusto Boal, Naiza Khan.

CND251 Words and Music

Victor Hugo once stated: "Music expresses that which cannot be said." But what exactly is the difference between verbal and musical expression? And why not just be silent? This course introduces students to new ways of thinking about music by comparing the two different media with each other. Together we will reconstruct a history of music from prehistory to the mp3 that includes Shakespeare, Schönberg and Sabri, compare musical notation with writing, learn why Immanuel Kant had reservations about instrumental music, what Marcel Proust loved about the silly lyrics of "Amore mio", and why Theodor W. Adorno hated Jazz.

CSD 212 From Runes to Bytes: Media Histories, Theories & Practices II

This one-year course introduces students of communication studies to central themes, issues and debates of our discipline, as well as to the stakes of historical inquiry and relevant practical skills. It examines the factors that influence the media and, in turn, examines the influence of media on society.

This semester we will look closely at the development of the public sphere, the proliferation of newspapers, the invention and adoption of efficient communication technologies, the simultaneous emergence of mass media addressing increasingly larger publics and personalized devices designed to cater to unique, individual needs.

CND232 Film History and Theory: An Extended Introduction II

This year-long course is an in-depth overview of the 20th century's dominant medium of visual communication (and still of tremendous importance today): cinema. It will introduce students to a range of strategies through which filmmakers unlock cinema's aesthetic potential, to film's dominant narrative forms and genres, and to the complex interrelationships between films and the societies and cultures in which they are made. One central premise of this course is that no account of the evolution of cinema makes complex sense without substantial consideration of the different ways scholars and practitioners have framed thinking. In other words, history and theory work together, and will be intertwined throughout the course in what resembles a double-stranded structure that alternates consistently between these two inseparable approaches. This Spring we will examine global filmmaking from the post-war period to the present.

CND241 Computer Generated 2D Animation

In this introductory course, students immerse themselves in the theory and practice of 2D animation. The emphasis is on the narrative structure of, experimentation with, critical thinking about sequential moving images in the realm of two-dimensional environments. A clear understanding of the recognized principles of 2D animation, and their inseparable relationship to the art of storytelling will be introduced. A good understanding of motion, timing, and sense of observation will be critical in this class. Compositing, sound editing and topics in motion picture production will be introduced at a less intense level. The course also emphasizes artistic and aesthetic creativity, and familiarizes students with the notion of digital asset management (DAM). Assignments may include simple 2D image-based visual narratives, unambiguous reconstructions of realities, or more abstract compositions exploring natural phenomena, texture, light, and other formal or spatial elements. The final project will be based on the discussion, creation, and evaluation of animation ideas.

CND245 Cartography

Cartography, or the 'Art, Science and Technology' of map-making, will introduce students to the critical history of maps as not just objective, scientific representations, but subjective constructions of the mapmakers, tethered to prevalent systems of

knowledge, power, authority and aesthetics. Students will also be equipped with cartographic design principles and knowledge of desktop and web-based participatory GIS platforms.

CND311 Elements of Aesthetics

Liberal arts education at Habib University, rooted in the philosophy of Yohsin and aesthetics, is one of its five paradigms. This course covers the fundamental principles of aesthetics and appreciation of beauty through the study of identified elements such as line, shape, form, space, colour and light manifested by different media and materials. The course deals with the grammar of the visual thinking, visual language, visual organization, visual relationship and aesthetical creation in the context of creative industry and “Kalakar” – a creative person.

Instructions in this course will ask students to engage in an act of creation and learn to distinguish best from the good that has to encompass both pragmatic and emotional considerations. The goal is to facilitate students by sensitizing their eyes and developing their powers of visual discrimination. The course also initiates the conversation and development of the sensory perception of literal/ambiguous form, leading to a process of selection and decision-making and its conversion into an actual application. The aim is to provide students an organized approach to the mechanics of design and ability to use this knowledge to a range of situations in developing for self-expression or industrial application. (Open to 2nd year students with permission of the instructor)

CND351 Film Production IIIb

Film Production III is a year-long course which follows on from Film Production II and is open to third year CSD students who have successfully completed last semester’s course. During the first 4 weeks there will be a screenwriting module during which students will be required to individually write a short screenplay which they will shoot over the course of the Fall Semester. During the Spring Semester they will concentrate on post-production and the completion of their project.

CND355 Film and Ideology

This course explores the relationship between film and politics: overt propaganda, social engagement, “innocent” entertainment with a covert, though not necessarily deliberate political agenda. Particular attention will be given to: 1) how a film’s political potential may lie not in its explicit message but rather in its form; and 2) a close examination of politically-charged films from “World Cinema” (from Rocha to Sembene, from Gerima to Ghatak).

CND361 Moving in the City: The Past, Present & Future of Urban Transit

In cities as sprawling as Karachi, is mobility a right? Is lack of public transit, by extension, injustice? With rapid urbanization, cities, especially in the developing world, have grown exponentially in the last 30-odd years. The tyranny of geography, created by this

sprawl, is one of the key challenges of this rapid transformation: how can citizens move around safely, efficiently, and affordably? How can they access jobs in increasingly stratified cities where the poor are relegated to the periphery? The 20th century solution to that problem, the private automobile, is now part of the problem. This course critically examines the issues and conversations around the past and the present of urban transit across major cities, and speculates on the future of mobility in cities like Karachi.

CND364 Computer Generated 3D Animation

This course focuses on content creation in a three-dimensional digital environment, and on camera-based production techniques. Related concepts will be introduced, such as 3D modeling, lighting, rendering, narrative structure, pacing, compositing and cinematographic match-moving. In this introductory course, students will develop knowledge and skills as they learn about and produce computer-generated 3D elements in the realm of VFX and broadcast animation. A good understanding of motion and timing, as well as a sense of observation will be critical in this class. Students will also develop an awareness related to the audiences' perceptual/emotional needs, digital asset management (DAM), and production methodology. Assignments may include ambiguous/unambiguous reconstructions of physical realities, simple 3D visual narratives, and VFX related experimentations. Students in this class will be experimenting with 3D digital elements generated by Autodesk Maya software for their conceptual and narrative development.

CND371 Aspects of Modernism

The course will not only attempt to situate modernism in its original historical context, but will query the ways in which modernism survived its historical moment and became an artistic and intellectual idiom in its own right. This idiom continues to offer possibilities of further development and reinterpretation for us today; it also offers a name under which ideas of exclusionary 'high' culture, of crisis, novelty, anti-traditionalism, nationalism, urbanism, progress and revolution continue to be thought and resisted. The course will engage with selections from modernist poetry, prose, and critical and cultural writings that try to articulate what the 'modern' condition is, and what it demands from artists/practitioners, intellectuals and audiences. The course will look at both early-twentieth-century modernist writings, and at recent discussions of modernism. We will begin with close examination of key modernist texts and manifestoes, and consider some writers who have held ambiguous or contentious positions in the modernist canon. We will conclude with a module addressing the continuing impact of transnational modernism in art and culture, and devote some attention to modernism in the subcontinent.

CND372 Body and Identity

In our unstable modern world, where 'meaning', 'truth', 'the real' signify contingent categories of thought, our bodies appear as the only resource left to guarantee continuity, and therefore stability. As David Hume states, "All sentiment is right; because sentiment has a reference to nothing beyond itself, and is always real, wherever a man is conscious of it." Which is perhaps why communication through the body (tattoos, piercings), as well as body practices (bungee jumping, yoga, hooliganism), have proliferated dramatically, almost as if the unity of the body, its physiological presence, counters the ever-shifting social and cultural ground on which we stand.

This course examines the relationship between the body and different forms of identity and identification in contemporary society. Starting with the Romantic period and its emphasis on feeling, we will study different historical conceptualizations of the body, compare representations of the body in pop and sport performances, assess the way we differentiate between live and mediated bodies, and even learn how to dance in a formation. Guests: Lyari dance group We Are One.

| Course Category | Number of Courses to complete | | |
|---|-------------------------------|----------|--|
| | Core | Elective | |
| University Requirements | | | |
| Liberal Core | 10 | | |
| Creative Practice | 1 | | |
| Interdisciplinary Senior Seminar | 1 | | |
| Communication Studies & Design Courses | | | |
| Communication Studies and Design Core | 5 | | |
| Capstone | 2 | | |
| Electives | | 7 | |
| Arts, Humanities & Social Sciences Courses | | | |
| Social Development and Policy Arts, Humanities & Social Sciences Core | 2 | 2 | |
| Other | | | |
| University Wide Courses | | 4 | |
| Arzu Center | | 2 | |



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