DIGIPEN
INSTITUTE OF TECHNOLOGY

Redmond, Washington

Catalogue for the Academic Year
2003 / 2004

Print Date: July 2003

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Important Dates

Aug. 28-29, 2003	Orientation – First Year Students	
Sep. 1, 2003	Labor Day	No Class
Sep. 2, 2003	Classes Begin – Fall Semester	
Nov. 11, 2003	Veterans Day	No Class
Nov. 27-30, 2003	Thanksgiving	No Class
Dec. 8-12, 2003	Final Exams	
Dec. 12, 2003	Fall Semester Ends	
Dec. 13, 2002-Jan. 1, 2004	Winter Holidays	No Class
Jan. 2, 2004	Intersession	No Class
Jan. 5, 2004	Classes Begin – Winter Semester	
Jan. 19, 2004	M.L. King Day	No Class
Feb. 3, 2004	Founder's Day	No Class
Feb. 16, 2004	Presidents Day	No Class
Mar. 22-26, 2004	Spring Break	No Class
Apr. 19-23, 2004	Final Exams	
Apr. 23, 2004	Winter Semester Ends	
Apr. 24, 2004	Commencement	
Apr. 24-May 9, 2004	Intersession	No Class
May 11, 2004	Classes Begin – Summer Session	
May 31, 2004	Memorial Day	No Class
Jul. 4, 2004	Independence Day	No Class
Jul. 26-30, 2004	Summer Session Final Exams	
Jul. 30, 2004	Summer Session Ends	

Deadlines

Sep. 12, 2003	Last day to add classes for Fall Semester
Sep. 19, 2003	Automatic withdrawal date from classes missing pre-requisites
	Final day to drop class without academic penalty
Oct. 1, 2003	Tuition deposit for Winter Semester due
Oct. 24, 2003	Last day to drop classes for Fall Semester – a *W* will appear on transcript
Dec. 1, 2003	Balance of tuition for Winter Semester due
Jan. 9, 2004	Last day to add classes for Winter Semester
Jan. 16, 2004	Final day to drop class without academic penalty
Feb. 15, 2004	Tuition deposit for Summer Session due
Feb. 27, 2004	Last day to drop classes for Winter Semester – a *W* will appear on transcript
Apr. 1, 2004	Balance of tuition for Summer Session due

Institutional Calendar

The Institute is closed on all statutory holidays. Exam periods and breaks may be subject to change if necessary.

The laboratory facilities may be closed for a period of two consecutive days per month for maintenance. It is usually the last two working days of the month unless otherwise posted.

Enrollment occurs once a year in September.

General Information

Name of the School
DigiPen Institute of Technology

Contact Information
DigiPen Institute of Technology
5001-150th Ave. NE
Redmond, WA
USA 98052
Telephone: (425) 558-0299
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Web: www.digipen.edu

History of DigiPen
Founded in 1988 DigiPen began as a computer simulation and animation company. Frustrated with the lack of qualified computer graphics employment candidates, DigiPen decided to offer training in the area of 3D computer animation. After three to four years, the city of Vancouver became known as an excellent source of computer animators. In 1991 discussions with Nintendo of America initiated the idea of offering educational training in the area of computer/video game programming. Nintendo and other video game development companies have constantly expressed the need for qualified game programmers.

With advisory support from Nintendo of America, DigiPen's engineers developed a two-year program with a unique curriculum in video game programming. In 1993 DigiPen Applied Computer Graphics School opened in Vancouver, BC, Canada, offering programs in computer/video game programming as well as continuing the training in 3D Computer Animation. Prior to DigiPen's course offering in video game programming, this type of training was unheard of in North America. The inaugural class graduated in 1996, and nineteen graduates gathered about thirty job offers from various game development companies, such as Nintendo, Iguana, Sierra Online, Konami, Electronic Arts, Bandai Entertainment, and Sony of America.

To fulfill the growing number of positions available in the digital entertainment industry, DigiPen decided to offer a unique degree program – a Baccalaureate of Science in Real-Time Interactive Simulation. As many of DigiPen's students came from the U.S., DigiPen decided to apply to the Washington State Higher Education Coordinating Board for the authorization to grant such a degree. The authorization was received in 1996. DigiPen Institute of Technology was opened in Redmond, WA in January 1998, offering both Baccalaureate and Associate degree programs in Real-Time Interactive Simulation. In September 1999, DigiPen added an Associate degree program in 3D Computer Animation.

Today we continue to fulfill the needs of the interactive simulation and 3D computer animation industries, encouraging our students to learn the skills and knowledge necessary to succeed in their field of training.

Mission of Institution
The mission of DigiPen Institute of Technology is to offer higher education to those who would like to pursue studies and careers in fields of interactive computer technologies, which include graphics and real-time interactive simulation, and provide highly qualified personnel to the interactive computer industries to sustain their growth and productivity.

Notice of Non-Discrimination
DigiPen Institute of Technology is committed to maintaining a diverse community in an atmosphere of mutual respect and appreciation of differences.

DigiPen Institute of Technology does not discriminate in its educational and employment policies on the basis of race, color, creed, religion, national/ethnic origin, sex, sexual orientation, age, or with regard to the basis outlined in the Veterans' Readjustment Act and the Americans with Disabilities Act.

Program of Studies Offered
Currently, the Institute offers the following degree programs:
1. Baccalaureate Degree of Science in Real-Time Interactive Simulation.
2. Associate Degree of Science in Real-Time Interactive Simulation.
3. *Associate Degree of Applied Arts in 3D Computer Animation.*

Advisory Committee
The advisory committee establishes decision criteria of an applicant's enrollment in the above Degree Programs. The committee recommends certain criteria be met, mainly:
- The pre-requisites of grade 12, as stipulated in the respective programs.
- Reference letters from instructors and supervisors.
- Grade transcripts of the last three years of education.
- Applicable work experience and/or portfolios.

About our Facilities

DigiPen encompasses over 52,000 square feet with a library, lunchrooms, auditorium, and dedicated computer labs for each cohort of students, as well as additional classrooms for lectures and instruction. The current student to computer ratio is 1:1. Our maximum class size is 150 students in either lecture or computer lab settings.

Major equipment items include microphone and LCD projection systems in several of the classrooms, multiple presentation media in the auditorium including VCR, document camera, DVD, Laser Disc, and CD player. Students also have access to BetaCam SP recording equipment. Computers currently range in power from 233 MHz Pentium II to 1 GHz Pentium 4 processors. DigiPen upgrades the computer equipment on a regular basis.

Description of the Library Facilities and Internet Access

Library Facilities
The 1,600 square foot library is a place for study, group work, and research. The library currently holds over 1,200 books, 20 magazines and journal subscriptions related to the fields of gaming, simulation, and animation, and over 200 PC and console video games. Over 300 networked computers, located in dedicated computer labs, form an integral part of the library resources available to students.

Internet Access
Internet Access is a regulated service. It is provided to the student free of charge. Students may lose this privilege if they do not abide by the Internet Access rules and regulations.

Tuition and Fees

All tuition and fees are in U.S. dollars.

Enrollment Application Fee
A $75.00 application fee must accompany the application form. $50.00 of the fee is refundable if the applicant is not accepted to the Institution.

Registration Fee
Upon acceptance into a Degree Program, a $100.00 non-refundable registration fee must be paid to confirm enrollment.

Tuition

	Undergraduate U.S. Citizen & Resident	Undergraduate Non-U.S. Resident
Cost/Credit	$321.00*	$374.50*
Total Cost B.S.	$49,434.00* (154 Credits)	$57,673.00* (154 Credits)
Total Cost A.S.	$26,322.00* (82 Credits)	$30,709.00* (82 Credits)
Total Cost A.A.A.	$25,680.00* (80 Credits)	$29,960.00* (80 Credits)

*Tuition is subject to change with 6 months notice.

Students re-registering for a failed course must pay the regular course fees.

Tuition Fee Payment
Please see the payment schedule in your student enrollment agreement for dates and amounts due. The payment of tuition and all associated fees is the sole responsibility and obligation of the registering student. Students must be fully paid no later than one week prior to the start of the semester. Tuition increases will be announced six months before taking effect.

Books
Text and reference books are estimated to be approximately $600.00 per year. This cost is not included as a part of the tuition.

Parking
On-campus parking is available for $280.00 per academic year. Please see the Administration Office for details regarding parking applications.

Administrative Fee
This fee covers a limited number of transcript requests, add/drop requests, late registrations, and re-registrations. This fee is $20.00 per semester for all students enrolled in 12 or more credits or $10.00 per semester for students enrolled in fewer than 12 credits.

Technology Fee
This fee covers paper and toner for the student-use printers and maintenance costs associated with the upkeep of the computer labs. This fee is $20.00 per semester for all students enrolled in 12 or more credits or $10.00 per semester for students enrolled in fewer than 12 credits.

Graduation Fee

This $50.00 fee covers the cost of the graduation gown, graduation application, degree audit, and graduation ceremony. This fee must accompany the graduation application.

Cancellation and Refund Policies 2003-2004

Tuition Refund Schedule
Registration fees are non-refundable.

Students who submit official withdrawal in writing or who are determined by the Administration to have withdrawn from the Institute:

- Before the beginning of classes are entitled to a tuition refund of all money paid towards tuition for the upcoming semester.
- Before the close of the seventh calendar day after the beginning of classes must pay 10% of the semester's tuition. Any portion of tuition paid above this percentage will be refunded.
- Before the close of the 27th calendar day of the semester must pay 25% of the semester's tuition. Any portion of tuition paid above this percentage will be refunded.
- Before the close of the 52nd calendar day of the semester must pay 50% of the semester's tuition. Any portion of tuition paid above this percentage will be refunded.
- After the 52nd calendar day of the semester must pay 100% of the semester's tuition.

All other assessed fees are refunded on the same schedule as tuition.

Termination Date:
The termination date for refund purposes is the last date of actual attendance by the student. Notice of cancellation or withdrawal should be given by completing the appropriate withdrawal form, whether it is withdrawal from the Institute or from specific classes for which the student is registered.

If the student's account remains delinquent for over 30 days, the Institute reserves the right to cancel the student's registration. Late tuition payments are subject to an interest charge of 1% per month or 12% per annum.

Special Cases
In the documented event of prolonged illness or accident, death in the family, or other special circumstances that make it impractical to complete the program, the Institute shall make a settlement that is reasonable and fair to both parties. These will be judged on a case-by-case basis.

Application of Policy
Any monies due the student shall be refunded within 60 days from the last date of student attendance or within 60 days from the date of receipt of payment in the event that the date of such receipt is after the student's last date of attendance.

If a student's financial obligation is not fulfilled, the Institute is authorized to do the following until the owed monies are paid:

- Withhold the release of the student's academic records or any information based upon the records.
- Withhold the issue of the student's transcripts.

If the student's account remains delinquent, the Institute reserves the right to cancel the student's registration. Late tuition payments are subject to an interest charge of 1% per month or 12% per annum.

Financial Assistance

Interested applicants should contact the Financial Aid Office at (425) 558-0299 regarding Federal Financial Aid Opportunities. Student loan programs offered by the SLM Financial Corporation (Sallie Mae) and by Key Bank are available to interested eligible applicants. For more information, SLM Financial Corporation can be reached at (800) 559-3220 or on the web at www.salliemae.com. Information on Key Bank loans may be obtained at (800) 539-5363 or online at www.key.com/educate.

Veterans Benefits

DigiPen Institute of Technology's academic programs of study are approved by the Higher Education Coordinating Board's State Approving Agency (HECB/SAA) for enrollment of persons eligible to receive educational benefits under Title 38 and Title 10, US Code.

The Associate of Applied Arts degree program is approved by the Workforce Training and Education Coordinating Board for the training of veterans and other eligible beneficiaries under Chapters 30, 32, and 35, Title 38; and Chapter 1606, Title 10, US Code.

Applying to DigiPen

Part-Time Studies
Part-time study may be available for the upcoming school year. Please inquire with the Registrar's Office to determine course availability.

Admission to the Programs of Study
The Institute determines eligibility for acceptance into a program. In general, admission is competitive; those who exceed the minimum admission requirements are more likely to be accepted into the program.

Real-Time Interactive Simulation
Minimum Admission Requirements:
- Proficiency in the English language. Non-native English speakers must provide a minimum TOEFL score of 550 (paper exam) or 213 (computer exam).
- Completed grade 12 or the equivalent with a minimum 2.5 cumulative GPA.
- *B* average or 3.0 GPA in mathematics courses including Algebra, Geometry, Algebra II/Trigonometry, Pre-Calculus (at minimum), plus Calculus/AP Calculus if possible. Other courses that will be considered include Physics, Chemistry, and Computer Science.

Entrance Examination
Applicants who no not meet the minimum requirements for admission to the RTIS program may be invited to take the DigiPen entrance examination. This exam is given at DigiPen's sole discretion in order to ensure that applicants have the background in mathematics necessary for success in our programs.

Applicants taking the entrance examination are competing for a limited number of seats; therefore, a passing grade on the exam does not guarantee acceptance to the program. Furthermore, the entrance examination may not be available if more eligible students have already filled the designated number of seats.

3D Computer Animation
Minimum Admission Requirements:
- Proficiency in the English language. Non-native English speakers must provide a minimum TOEFL score of 550 (paper exam) or 213 (computer exam).
- Completed grade 12 or the equivalent with a minimum of a 2.5 cumulative GPA.
- Submission of a minimum of ten samples from their art portfolio that demonstrate artistic range, in particular figure and animal drawing, character designs, architectural renderings, etc. Submissions will not be returned.

Application Process
All applicants for both programs must submit the following:
- DigiPen Institute of Technology Application for Admission.
- $75.00 application fee (U.S. funds only).
- Official high school transcripts or official GED/equivalency scores.
- Official transcripts from ALL post-secondary institutes attended (if applicable). This includes transcripts for high school concurrent enrollment programs.
- Two letters of recommendation from professors, employers, or other supervisory individuals. Letters from family members will not be considered.
- Personal statement. Guidelines for the personal statement will be included on the application checklist.
- Other official documentation. This includes but is not limited to: TOEFL scores, copy of Permanent Resident card, etc.
- Portfolio (3D Computer Animation applicants only).

Admission/Denial to the Program
Accepted applicants will receive an enrollment packet via standard mail. This packet will include an enrollment agreement, information on financial aid, student services information, and, if applicable, a request to furnish proof of high school graduation before the start of classes in the fall. By returning the signed enrollment agreement, proof of high school graduation, and the enrollment fee, an applicant becomes a new student.

Applicants who are not accepted to the Institute will receive a letter of denial by mail. If an applicant is denied admission to the program, $50.00 of the application evaluation fee will be refunded to them.

Passing Classes and Graduation
In addition to the pre-requisites set forth in the Catalogue, Associate of Arts students must successfully complete all 100 level PRJ courses in order to proceed to any 200 level courses. All students must have a cumulative GPA of at least 2.0 to graduate.

Waiver, Credit, AP Examinations, CLEP, and Other Credit

Students who can demonstrate that their knowledge and skills are equivalent to those gained by courses offered at DigiPen Institute of Technology – whether they were gained by formal education, exam, work experience, or life experience – may apply for academic credit or course waivers. Credit may be granted through other means: Advanced Placement (AP) Exam scores, International Baccalaureate courses, or College-Level Examination Program (CLEP) subject exam scores and transfer credit from other post-secondary institutions. A maximum of 9 credits per semester may be earned by these means. In all cases, no less than 75% of a student's program must be taken at DigiPen.

Course Waiver Examinations

A student may meet an academic requirement, within specified limits, by passing a waiver examination at least equal in scope and difficulty to a final examination in a course. Successful completion of the examination waives the curricular requirement but does not result in credit earned. Rather than reducing the total number of semester hours required for a degree, it will increase the available number of elective hours. The department in which the course is offered considers waiver requests at its discretion. Waiver examinations must be taken prior to the final semester of residence and may not be repeated.

Students have the opportunity to waive designated core courses by demonstrating mastery of the material in two steps:
1. A waiver petition to the respective department, indicating prior academic coursework and relevant work experience in the subject area; and
2. Performance on a placement exam offered by the respective department at the beginning of each term.

To petition to waive a core course, the student must complete a waiver request form for each course, attach a transcript or photocopy of transcript with relevant coursework highlighted, to each waiver request, and submit the requests to the Registrar. Copies of the waiver request form are available from the Registrar. Each department will designate the courses for which a waiver exam or credit exam may be offered.

For waiver requests received by July 1, students will receive notification by August 1. Waiver requests arriving in the Registrar's Office after July 1 will be handled on a rolling basis, at faculty convenience. Because of faculty schedules, results of waiver requests received after the deadline are not guaranteed to be available before the start of classes.

It is not possible to predict the results of faculty review of core course waiver requests. Core courses generally include intermediate level material so a student who has completed only introductory work in a subject is not likely to be granted a waiver. Faculty take many factors into consideration, including the academic caliber of the school where the course was taken, the difficulty of the text, the grade received, and the time elapsed since completion of the course.

The following restrictions apply to all waiver examinations:
- A student must have an approved waiver request on file before credit by examination can be recorded on the permanent record.
- A student must be currently enrolled before a waiver examination can be recorded on the permanent record.
- A maximum of 15 semester hours may be waived toward a baccalaureate degree and a maximum of 9 semester hours may be waived toward an associate degree.
- Examinations may not be repeated.
- Repeat course work and F grades are not open to waiver requests.
- Students may not take waiver examinations on courses they have audited.

Advanced Placement Examination

Waiver or credit may be earned by successful completion of an Advanced Placement examination in the last ten years. These tests are graded on a scale of one to five.

Course waivers or credit may be granted for satisfactory attainment on Advanced Placement Exams of the College Entrance Examination Board. An exam score of four or above earns from three to six hours of course waiver. No grades will be assigned to the courses, nor will they be figured into a student's grade point average. Courses waived are entered on students' transcripts, but no grades or quality points are awarded. Official results must be sent to the Registrar for analysis before course waivers are granted.

A maximum of six course hours waived through AP examinations may be applied to satisfy DigiPen's degree requirements. The examinations and the courses for which

waiver/credit is granted are listed below. Waiver/credit granted for a specific course counts toward the satisfaction of any requirement toward which the listed course counts.

AP Exam	Score
Art – Drawing Portfolio	4
Art – History of Art	4
English – Composition	4
English – Creative Writing	4
English – Literature	4
Mathematics – Calculus AB	4
Mathematics – Calculus BC	4
Physics – Physics	4

International Baccalaureate (IB)

In general, three semester credits hours are waived for each Higher Level subject in which a score of five or higher was earned in the last ten years.

The IB courses and scores listed below are eligible for waiver at DigiPen.

Course & Level	Score
Computer Science – HL	5, 6, 7
English (A1 & A2) – HL	5, 6, 7
Mathematics – HL	5, 6, 7
Philosophy – HL	5, 6, 7
Psychology – HL	5, 6, 7
Social Anthropology – HL	5, 6, 7
Theatre Arts – HL	5, 6, 7

College Level Examination Program (CLEP)

There are two types of CLEP examinations, General and Subject. DigiPen grants credit for Subject Examinations **only**. These tests may not be repeated. Examination must be taken prior to the student's completion of a total of 40 hours of college credit.

CLEP offers a number of subject-matter examinations. Students obtaining the percentiles established by the mathematics, computer science, and general education departments will receive credit toward that basic requirement. Students wishing credit in courses other than those listed above should consult the appropriate departmental chair.

Credit or course waivers may be granted for satisfactory attainment on Subject Examinations of the College-Level Examination Program (CLEP) of the College Entrance Examination Board. These tests may be taken at any of a number of test sites, and the responsibility for scheduling such examinations is the student's. Credit will be given only in those areas in which comparable courses are offered at DigiPen. For further details and information concerning test centers and dates, students should check with the College Board at www.collegeboard.org. Hours granted or courses waived are entered on students' transcripts, but no grades or quality points are awarded. Official results must be sent to the Registrar for analysis before credit or course waivers are granted.

DigiPen Institute of Technology will grant credit to students who pass the CLEP Subject Examinations approved by the department appropriate to the examination. The score necessary to receive credit through a Subject Examination will be the mean score achieved by *C* students in the national norms sample. The appropriate department will determine the number of course credits to be given for passing a Subject Examination.

Transfer Credit

Credit earned by examination at other colleges or universities in the last ten years may be transferred provided such credit meets the guidelines used by DigiPen Institute of Technology.

The Registrar will evaluate college credits earned elsewhere with respect to curricular requirements at DigiPen. Transfer credit is granted for academic classes appearing on official transcripts of post-secondary institutions in which students earn a grade of *B* or better. Transfer credit is not granted for developmental classes, orientation classes, or for classes in which a student receives a *Pass*. Current DigiPen students are advised to confer with the Registrar prior to enrolling in course work at other institutions if they intend that the credit be applied toward graduation from DigiPen Institute of Technology. Class standing of transfer students will be based on the number of credits accepted for transfer. Hours earned and courses waived are entered on students' transcripts, but no grades or quality points are awarded. Students who wish to have transfer credit applied to their major at DigiPen may be required to take a challenge exam for that course.

Transfer credit may be accepted subject to the following conditions and restrictions:
- The course(s) offered for transfer must be taken at an accredited institution.
- The course(s) must be comparable in academic quality to DigiPen courses; transfer credit will be denied for courses not meeting this standard. Accordingly, current students are strongly urged to seek transfer approval from their advisor and the Registrar using the form provided for this purpose prior to enrollment in any course for which transfer approval might be sought.

- Transfer credit will be considered for courses in which the grade of *B* or better is recorded.
- Courses transferred to the students major may also require a validation examination in order to be accepted.
- *Credit* or *Pass* grades will not be accepted in transfer.

If a course is accepted for credit, it will be counted as a *transfer credit*. No grade points from such transfer courses will be calculated in the DigiPen grade point average. However, grades transferred for courses taken in residence at institutions for which DigiPen Institute of Technology has direct, formal institutional exchange agreements are exempt from this policy and will be recorded. Courses transferred in may not be used to substitute improved grades for passing grades earned at DigiPen.

Validation Examinations and Course Challenges

Students who have transcripts from non-accredited colleges and/or transcripts showing nontransferable college courses from the last ten years may request to take validation examinations in courses which are comparable to those offered by DigiPen Institute of Technology. Upon successful completion of the examination(s), the student will be given waiver credit as specified.

Departments may designate as challenge courses certain courses involving primarily substantive materials or technical proficiencies. A student at the appropriate level of classification may, with the approval of the department chair, challenge the course by taking an examination. If the student makes a satisfactory grade on the examination, waiver credit for the course will be given.

A challenge examination is a college-prepared or a standardized examination that, if successfully completed, will yield waiver credit. The student must take the examination before enrolling for further study in his or her program. The challenge examination may not be repeated and must be taken prior to the final semester of residence.

Credit Evaluation Forms

Application forms for challenge, and/or waiver examinations may be obtained from the Registrar or online. A student must have approval for an exam prior to taking an exam.

Transferability of Credits to Other Institutions

The Institute will furnish transcripts and other documents necessary for a receiving institution to judge the quality and quantity of a student's work. The Institute advises all prospective students that the work reflected on their transcript may or may not be accepted by a receiving institution. Students should inquire with the specific receiving institution about transferability of Institute credits.

Granting Credits for Experience

At this point the Institute does not grant credits for experience.

Standards of Progress

Semester Credit Hour

The semester credit hour (sch) is the basic unit of credit. As a rule, one semester credit hour of academic credit is given for each lecture class hour per week for a fifteen-week semester. In laboratory or studio situations, one semester credit hour normally is given for two to five contact hours per week for a fifteen-week semester. In addition, undergraduate students typically will be expected to spend two hours in preparation outside of class for each lecture or recitation hour; additional outside work may be required for laboratory or studio classes. During shorter summer sessions, the student earns semester credit hours for class contact hours that are essentially equivalent in number to those provided in the regular semesters. Where semester hour is used in this Catalog, it is synonymous with semester credit hour (sch).

Grading System

The following grading system is in use and, except where otherwise specified, applies both to examinations and term work. The weight of a final examination grade is a matter individually determined by each instructor. See the Grade Point Average section following for additional information.

A	Excellent = 4.0 quality points
A-	Excellent = 3.7 quality points
B+	Good = 3.3 quality points
B	Good = 3.0 quality points
B-	Good = 2.7 quality points
C+	Fair = 2.3 quality points
C	Fair = 2.0 quality points
C-	Fair = 1.7 quality points
D	Poor = 1.0 quality points lowest passing grade, failing grade for major
F	Failure = 0 quality points
FN	Failure for Never Attending = 0 quality points
FS	Failure for Stopping Attendance = 0 quality points

For degree programs offered at DigiPen Institute of Technology, all courses are considered part of the student's major except courses offered by the General Education department.

Grade A
A distinguished grade for superior work:
1. You mastered the content and objectives of the course, can apply what you learned to new situations, and can relate it to other knowledge.
2. You consistently distinguish yourself in examinations, reports, projects, class participation, and laboratory or training situations.
3. You show independent thinking in assignments and class discussion.
4. Your work is consistently in proper form, shows satisfactory evidence of careful research (where required), and is submitted punctually.
5. Where achievement in the course involves development of analytical skills, you consistently demonstrate superior skills, ability, and performance.
6. You complied with the instructor's attendance requirements.

Grade B
A better-than-acceptable grade:
1. You consistently show mastery of the course content and objectives and usually apply what you learned to new situations or related it to other knowledge.
2. Your work is in proper form, shows satisfactory evidence of research (where required), and is submitted punctually.
3. Where achievement in the course involves development of analytical skills, you consistently demonstrate above average skills, ability, and performance.
4. You complied with the instructor's attendance requirements.

Grade C
An acceptable grade permitting progress forward in course sequence:
1. You show evidence of a reasonable comprehension of the subject matter of the course and have an average mastery of the content sufficient to indicate success in the next course in the same field.
2. You consistently make average scores in examinations, reports, projects, class participation, and laboratory or training situations.
3. If the subject carries transfer credit, your work indicates sufficient competence in the content to continue in the subject field upon transfer.

4. You complete your assignments in good form and on time.
5. Where achievement in the course involves development of analytical skills, you consistently demonstrate average skills, ability, and performance.
6. You complied with the instructor's attendance requirements.

Grade D
A less-than-acceptable, passing grade; failing grade for core courses in your major:
1. You fall below the average in examinations, projects, reports, class participation, and laboratory or training situations, but show some competence in the assigned subject matter of the course.
2. The competence demonstrated is insufficient to indicate success in the next course in the subject field.
3. Assignments are completed in imperfect form, are sometimes late, or of inconsistent quality.
4. Where achievement in the course involves development of analytical skills, you consistently demonstrate below-average skills, ability, and performance.
5. You complied with the instructor's attendance requirements.

Grade F
A failing grade:
1. With respect to examinations, projects, reports, class participation, and laboratory or training situations, you fail to perform at the *D* grade level.
2. You show little or no competence in the assigned subject matter of the course.
3. Where achievement in the course involves development of analytical skill, you fail to perform at the *D* or above grade level.
4. You did not comply with the instructor's attendance requirements.

Grade FN – Failure for Never Attending
Given when a student has officially registered but never attended and never dropped.

FS – Failure for Stopping Attendance
Given when a student stops attending but never officially drops a course.

The following grades do not affect the GPA.
AU – Audit
Indicates course was attended without expectation of credit or grade.

I - Incomplete
The *Incomplete* is intended for use when circumstances **beyond a student's control** prohibit taking the final exam or completing

course work. The *Incomplete* is **not** intended as a mechanism for allowing a student to retake a course. A student who has fallen substantially behind and needs to repeat a course can drop the course prior to the end of the eighth week of classes. Otherwise, the instructor should assign the appropriate final grade (*D* or *F*, for example).

An *Incomplete* may not be used simply to allow a bit more time for an undergraduate student who has fallen behind for no good reason. An *I* may be granted **only** to students who have a legitimate excuse. Examples of unacceptable reasons for approving an *Incomplete* include the need to rewrite a paper, the demands of a time-consuming job, the desire to leave town for a vacation or family gathering, the desire to do well on tests in other courses, and the like.

The *I* indicates one of the following two circumstances:
1. Some work remains to be completed to gain academic credit for the course. An *I* is assigned in the first instance at the discretion of the instructor. This assignment shall not be automatic but shall be based upon an evaluation of the student's work completed up to that point and an assessment of the student's ability to complete course requirements within the allowed time limit. Work to remove an *I* must be performed within the 12 months following the last day of the semester in which the *I* is incurred or earlier if the instructor so requires. When such work is completed, the instructor will assign a final grade for the course. Should the work not be completed, the instructor will assign a final grade based on required material submitted to date.
2. When work is not completed because of documented illness or other "emergency" occurring after the eighth week of the semester.

***Registrar's Note:** An "emergency" is formally defined as a situation or event which could not be foreseen and which is beyond the student's control and which prevents the student from taking the final examination or completing other work during the final examination period. Also note that as previously defined, a student may not request an I before the end of the eighth week; the rationale is that the student still has the option to drop the course until the end of the eighth week. The grade I exists so there is some remedy for illness or emergencies that occur **after** the drop deadline.*

Arrangements for the grade of *I* and its completion must be initiated by the student and agreed to by the instructor prior to the final examination. An *Assignment of Final Grade for Completion of an Incomplete (I) Form* must be completed each time a grade of *I* is assigned. On the form, the instructor will specify to the student and the department the work remaining to be done, the procedures for its completion, the grade in the course to date, and the weight to be assigned to work remaining to be done when the final grade is computed.

If make-up work requires classroom or laboratory attendance in a subsequent term, the students should not register for the course again; instead, the student must audit the course and pay audit fees. If the make-up work does not require classroom or laboratory attendance, the instructor and student should decide on an appropriate plan and deadline for completing the course.

When the student completes the course, the instructor will submit a change of grade to the Registrar's Office. These procedures cannot be used to repeat a course for a different grade. (An *I* grade should not be assigned to a student who never attended class; instead, instructors may assign a failing grade.)

W – Withdrawal
Indicates withdrawal from the course before the end of the eighth week of classes or withdrawal from the Institute. The grade of *W* will not be assigned to any student who has taken the final examination in the course. **An instructor may not withdraw a student from a course.**

S – Satisfactory
Given only in non-credit courses.

U – Unsatisfactory
Given only in non-credit courses.

P – Pass
Given for internship courses and to students who successfully challenge classes for credit or waiver.

Grade Reports
Reports of the final grade in each subject will be mailed to the student soon after the close of each semester. However, grade reports are withheld from students who have delinquent accounts with the Administration Office, Security, or Library.

Grade Point Average
The academic standing of each student is determined on the basis of the grade point average (GPA) earned each semester. The GPA is determined by using the quality points assigned to each student's grade.

The quality point value for each grade earned during a semester is multiplied by the number of credit hours assigned to that course as listed elsewhere in this catalog. The sum of these points is the total number of quality points earned during the semester. This sum is divided by the number of credit hours attempted (hours from courses with grades of *A* through *FS*) to obtain the GPA.

The cumulative GPA is obtained by calculating the GPA for all courses attempted at DigiPen. Course grades of *AU*, *I*, *W*, *S*, *U*, and *P* are non-punitive grades. They are not calculated in the overall GPA since they carry no quality points.

The following example will help you calculate your grade point average:

Course	Credits	Grade	Points
CS 100	3	A	12.0 (3 x 4.0)
MAT100	4	A-	14.8 (4 x 3.7)
CIS 115	3	B	9.0 (3 x 3.0)
ENG110	3	D	3.0 (3 x 1.0)
CS 120	3	B+	9.9 (3 x 3.3)
TOTALS	**16**		**48.7**

Total grade points divided by total credits equals the cumulative grade point average. Therefore, the grade point average for the above example is 48.7 divided by 16 for a 3.04 GPA.

Satisfactory Progress

Satisfactory progress toward a degree by a full-time student is defined as a **full attempt** of 28 credits during an academic year. This should include registration for at least 14 credits per semester and successful completion of at least 14 credits per semester. *Full attempt* is defined as the receipt of a final letter grade (*A* to *FS*) but not the receipt of a *W* or an *I*. *Successful completion* is defined as the receipt of a passing letter grade (*A* to *C*- in the major and *A* to *D* in non-major courses). The Registrar makes decisions on student status.

A program of study must be completed within a reasonable period of time to be eligible for graduation; that is, the credit hours attempted cannot exceed 1.5 times the credit hours required to complete the program. Therefore, a full-time student registered in an Associate Degree program must complete the program in three academic years, and a student enrolled in a Baccalaureate Degree program must complete the program in six academic years. Full-time students who do not complete their studies during this time frame will be withdrawn from the Institute by the Registrar.

To maintain satisfactory progress, students must attain a minimum cumulative grade point average at various points in their program of study.

Minimum GPA	Credits attempted*
1.0	25% of program (38.5 credits for B.S., 20 credits for A.S. and A.A.A.)
1.5	50% of program (77 credits B.S., 40 credits for A.S. and A.A.A.)
2.0	At graduation

*An *attempted credit* is defined as any credit that is awarded a final letter grade (*A* to *FS*). Credits earning a *W* or *I* are not considered attempted credits.

Appeals involving extenuating circumstances may be addressed to the Dean of Faculty for resolution by an appropriate faculty committee.

Grade Changes

The faculty person who administered the grade makes grade changes. In cases where the faculty is not available to consider a grade change, the department chair in consultation with the Dean of Faculty may make such a change. Grade appeals go to the department chair responsible for the course then to the Dean of Faculty.

Repeating Courses

A student may repeat any course in which he or she has **not** received a passing grade (an *A* to *C*- in a core course, an *A* to *D* in a non-core course), as long as the student is in good standing with the school and eligible to continue his or her studies.

All grades and attempted classes remain on the student's transcript and are calculated in the student's GPA. Courses in which a student has earned a passing grade may be repeated as audit courses only.

Withdrawing from School and the *W* Grade

A student may withdraw from the Institute before the end of the eighth week of instruction of a semester:

1. If a student withdraws before the end of the third week of instruction, no course entries will appear on the student's transcript for that quarter.
2. If a student withdraws after the end of the third week of instruction and before the end of the eighth week of instruction, the registrar will assign a final grade of *W* to the student for each course in which the student was enrolled at the beginning of the fourth week of instruction.

3. Each student will receive a final grade for each course in which the student was enrolled at the end of the eighth week of instruction of the semester.

Dean's Honor List Requirements

The Dean's Honor List, prepared at the end of the fall and spring semester, officially recognizes and commends students whose grades for the semester indicate distinguished academic accomplishment. Both the quality and the quantity of work done are considered.

You must meet the following qualifications to be a recipient of this honor:

- You must be matriculated.
- You must be registered full-time in credit-bearing courses.
- Full-time students must complete 14 or more credits in one semester.
- Only passing grades (*A*, *B*, *C*, and *D*) in credit-bearing courses are counted for eligibility.
- No failing grades: a grade of F in any course makes the student ineligible, regardless of other grades.
- Minimum GPA Required:
    14 credits – 3.65 or higher
    15 or 16 credits – 3.55 or higher
    17 or more credits – 3.45 or higher
- Any courses that do not count towards the degree are excluded.
- AP, Internship, and Independent Study credits are excluded.
- Pass/Fail credits are NOT to be counted when calculating qualifying credits.
- *Incomplete* grades will be evaluated <u>after</u> they are made up. The student must have qualified for the Dean's Honor List before and after the *Incomplete* grade was made up.

The student's cumulative grade-point average is not considered; only the grade-point average for that particular semester is relative.

The Dean's Honor List will be displayed in the lobby of DigiPen Institute of Technology after each fall and spring semester. If you meet these requirements, you will also receive a congratulatory letter from the Dean. However, no Dean's Honor List certificates are awarded for courses taken during the Summer Session.

Reason(s) why your name might not have been listed:
a) Fewer than fourteen graded credits.
b) Grade change(s) or late grade(s) submitted.
c) Change of major (check listings under your previous major).
d) FERPA Directory Block.

e) No local address on file.

If you believe you fulfilled the criteria indicated above, please stop in at the Registrar's Office to fill out a special form requesting a review of your semester grades. No action can be taken without this form. Assuming you qualify, you will receive a confirming letter. If you did not qualify, you will be informed of this fact with the reason(s) indicated.

Grievance and Appeal Process

Academic Standing
Students who would like to file an appeal against a decision regarding their academic standing in a particular course should discuss the matter with their instructor. If a satisfactory resolution is unattainable, the student may file an appeal with the Head of the Department. If the resultant solution is still unsatisfactory, then the student may file an appeal with the Dean of the Institute.

Students may appeal grades and review exams no later than two weeks after transcripts are issued.

The administration reserves the right to destroy any examination papers after the two-week appeal period. However, academic records will be kept indefinitely.

Appeal for Refund of Tuition
Students who would like to file an appeal against a decision regarding their tuition refund shall file <u>a written request</u> to the Registrar. If dissatisfied with the decision of the Registrar, the student may file a second appeal with the Chief Operating Officer. If still unsatisfied with the decision, he or she may appeal to the Executive Director of the Higher Education Coordinating Board of the State of Washington.

Academic Ineligibility

Students with a cumulative GPA between .01 and .50 below the minimum GPA required for the number of credit hours attempted to date must meet with their academic advisor to develop an academic plan for the following semester. These students will be placed on Academic Probation for the following semester and must improve their GPA to at least the minimum GPA required for satisfactory progress.

Failure to improve his or her GPA during the period of Academic Probation will result in dismissal of the student for a period of one year. The student may re-apply to the Institute after the one-year suspension period has ended. The Institute will thoroughly review this application and make the final decision on acceptance. All applicants must meet the Institute's entrance

requirements applicable at the time of re-registration. Students may appeal this suspension by making an application to the Academic Review Committee.

Students with a cumulative GPA too low to be eligible for Academic Probation (see above) become academically ineligible to continue with their courses and cannot re-register for a period of one year. The student may re-apply to the Institute after the one-year suspension period has ended. The Institute will thoroughly review this application and make the final decision on acceptance. All applicants must meet the Institute's entrance requirements applicable at the time of re-registration.

Attendance
In order to remain in the program of study, students must meet the minimum acceptable cumulative GPA, as described in this publication, and a minimum of a 70% attendance record in each course at the end of each semester. Failure to maintain the minimum attendance and GPA requirements may be considered grounds for dismissal. Students must also abide by the rules and regulations set forth by the Institute. Students more than 15 minutes late to class will be marked as absent for that entire class. Students may not leave class early without instructor permission.

Exams
All students are required to be in attendance at the times scheduled by DigiPen for final exams. Instructors are not required to make arrangements for individuals to write final exams at a different time than the rest of the class. Should a student miss an exam, it is the student's responsibility to notify the instructor 24 hours of the missed exam.

Should a student miss a final exam, the Registrar shall review the individual circumstances. Only medical reasons accompanied by a doctor's note will be considered acceptable reasons for missing exams. Exam retakes shall be allowed at the sole discretion of the Registrar and Department Chair.

A retaken exam shall be different than the original one taken by the students, and the timing of it shall be at the sole discretion of the individual instructors. In all cases, the retakes shall be administered no later than one week after the original, missed exam.

Leaves
The Registrar must approve leaves, absences longer than one week. They must be requested in writing four weeks prior to the start date of the leave. In the case of catastrophic situations, the Institute must be notified as soon as possible.

Leaves without approval may result in the termination of student status.

In all cases, it is the student's responsibility to make up missed work. Extensive leaves may result in the repetition of an entire semester, for which the student will be charged full tuition.

Student Internship Guidelines
The student internship at DigiPen Institute of Technology is a carefully monitored work or service experience in which the student has intentional learning goals and reflects actively on what he or she is learning throughout the experience. The experience may be a professional workplace activity under general supervision of an experienced professional that places a high degree of responsibility on the student.

The goals for the internship may include:
- Academic learning – applying knowledge learned in the classroom to tasks in the workplace.
- Career development – gaining knowledge necessary to meet minimum qualifications for a position in the student's field of interest.
- Skill development – an understanding of the skills and knowledge required in a specific job category.
- Personal development – gaining decision-making skills, critical thinking skills, increased confidence and self-esteem.

Internships may vary in duration; they can last from a month (or less) to one semester. They can take place in any work or service setting. Internships can be part-time or full-time, paid or unpaid. They are part of the educational program and as such, they are carefully monitored and evaluated for academic credit. The important element that distinguishes an internship from a short-term job or community service is the intentional *learning agenda* that the intern brings to the experience.

More detailed information about student internships can be found in the *Internship Guidelines* available in the Administration Office.

Degree Status and Graduation

Graduation Requirements
Degrees and certificates will be granted during the semester in which the final requirements are completed. For example, if you receive an *I* in a course required for graduation in your final semester, you will not graduate until the semester in which the *I* is replaced by a letter grade. During that semester, you must reapply for graduation.

A program of study must be completed within a reasonable period of time to be eligible for graduation; the credit hours attempted cannot exceed 1.5 times the credit hours required to complete the program. Therefore, a full-time student registered in an Associate Degree program must complete the program in three academic years, and a student enrolled in a Baccalaureate Degree program must complete the program in six academic years. Full-time students who do not complete their studies during this time frame will be withdrawn from the institute by the Registrar.

A student may request a change in their degree status by completing the *Degree Status Form* (Part I) provided by the Registrar. The student must sign the form and submit it to the Registrar for approval. The Registrar reserves the right to review each request on a case-by-case basis.

The conditions for changing are:
- The student must be in good standing at the time of the official request.
- Students changing from the bachelor's degree to the associate degree must request the change by the end of their sixth semester.
- Students changing from the associate degree to the bachelor's degree must request the change by the end of their third semester.
- Students requesting a change in degree status from the bachelor's to the associate degree must complete 75% of the required core courses at DigiPen. Transfer credits from other institutions will be reviewed on a course-by-course basis.
- Students may transfer excess credits beyond the associate degree to the bachelor's degree if they choose to re-enroll in the Bachelor of Science degree program at a later date.

Applying for Graduation
The Institute sets minimum requirements for all students seeking undergraduate degrees. **The Institute reserves the right to change graduation requirements at any time. Every degree candidate is expected to comply with changes in requirements as they relate to the uncompleted portion of coursework.**

Most students will follow the graduation requirements published in the catalog for the year they enter DigiPen. Students who interrupt their attendance may be held to the requirements of the current catalog when they return.

Students are responsible for ensuring that all graduation requirements have been completed.

Approximately four to six weeks after students apply for graduation, a degree audit report will be issued. This report identifies courses students have taken to complete the bachelor's degree requirements. This report is used to assist students in planning future course work to ensure that all graduation requirements are met. Students should take the degree audit report with them when checking progress toward graduation with their academic advisor and/or the Registrar.

Students are responsible for notifying the Registrar of any changes in their proposed programs and questions resolved prior to registration for their final term at DigiPen.

Undergraduate students who feel there is justification for an exception to these graduation requirements may petition the Graduation Committee. Information on filing a petition is available at the Registrar's Office.

All incomplete *I* grades and conditions affecting graduation must be removed from the student's record by the last regular class period of the term.

All credit course work affecting graduation must be completed by the regular class period of the term.

A letter of instruction is mailed to degree candidates in March regarding deadlines and procedures for commencement-related activities.

Graduation Application Process
1. The student completes **Parts I & II of the *Graduation Application*** and submits the $50.00 graduation fee.
2. The **academic advisor should review the most recent transcript or degree plan to verify progress and sign Part III** if student has completed all courses satisfactorily to date and, if upon

satisfactory completion of courses for which the student is currently registered, he or she will be eligible for graduation.

3. After this review, **the Registrar will make a preliminary review of progress during final semester of enrollment and sign Part IV.**
4. Final approval will not be made until after final grades are submitted and posted to student's record. Degrees will be mailed as soon as possible after that process, which should be from four to six weeks after completion. The student needs to keep the Registrar informed of address changes so that degrees are mailed to the correct address.

Student Services

Open House
A weekly open house is offered to the general public free of charge. Any person interested in finding out more about the programs offered by the Institute is welcome to attend an information session held at the Institute. Currently, the information session is held every Friday at 4:00 P.M., excluding holidays. Students who are accepted are required to attend an official orientation session prior to the start of the program.

Admissions
Staff is available to assist applicants in determining a relevant course of study required for acceptance into a program of study at DigiPen. Staff will also assist students who are enrolled in the program to determine their recommended course load according to their academic objectives (i.e. honors program, specialization, etc.).

Placement Services
The Institute continues to establish relationships with various companies, and prospective employers who wish to recruit DigiPen students are cordially invited to conduct on-campus interviews. However, employment upon graduation is not guaranteed. Advice on career options is available for enrolled students. The Institute also provides placement services in the form of internships that may be available during the summer; the placement program bases its recommendations of students on their academic performance.

Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) reserves for students certain rights with respect to their education records. These rights are:

- The right to inspect and review the student's education records within 45 days of the day the Institute receives a request for access. Students should submit to the Registrar, Dean, or head of the academic department (or appropriate official) written requests that identify the record(s) they wish to inspect. The Institute official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the Institute official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
- The right to request the amendment of the student's education records that the student believes is inaccurate. Students may ask the Institute to amend a record that they believe is inaccurate. They should write the Institute official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate. If the Institute decides not to amend the record as requested by the student, the Institute will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
- The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent. One exception, which permits disclosure without consent, is disclosure to school officials with legitimate educational interests. A school official is defined as a person employed by the Institute in an administrative, supervisory, academic, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the Institute has

contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility. Upon request, the Institute discloses education records without consent to officials of another school in which a student seeks or intends to enroll.

- The right to file a complaint with the U.S. Department of Education concerning alleged failures by the Institute in compliance with the requirements of FERPA. The name and address of the Office that administers FERPA is:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, S.W.
Washington, DC 20202-4605

Release of Student Directory Information

The Family Educational Rights and Privacy Act (FERPA) of 1974 protects the privacy of your education records. However, the following information is considered public or directory information and may be released to anyone unless you inform the Office of the Registrar that you do not wish any information released:

- Name
- Local telephone number
- Institute e-mail address
- Major field of studies
- Name of academic advisor
- Dates of attendance
- Degrees and awards received
- Full or part-time enrollment status
- Educational institutions attended

NO to Release of Information

If you do not wish to authorize directory release and do not want your directory information to appear in any published or electronic Student Directory, you may restrict access through the Administration Office. No information will be released on students or to students who have restricted release of directory information, including degrees awarded and dates of attendance.

Change from NO to YES

If you restricted release of directory information and now wish to change your authorization and

allow release, you must go to the Administration Office and present photo identification and a completed release/restrict of directory authorization form.

Regulation of Conduct and Disciplinary Procedures

The Institute has the right to take whatever disciplinary action deemed to be warranted by a student's misconduct. The specific provisions as to Offenses, Penalties, and Disciplinary Procedures, which are set out below, should not be construed as limiting the general authority of the Institute.

Offenses

Misconduct subject to penalty includes, but is not limited to, the following offenses:

1. Plagiarism

Plagiarism is a serious form of academic misconduct in which an individual submits or presents the work of another person as his or her own. Possession of source code, artwork, concept, or other material without the explicit permission from the owner is also construed to be plagiarism. When excerpts are used in paragraphs or essays, the author must be acknowledged through footnotes or other accepted practices.

Substantial plagiarism exists when the student gives no recognition to the author for phrases, sentences, and ideas incorporated in an essay or other academic presentation submitted for evaluation.

Complete plagiarism exists when the student copies and presents as original work an entire essay or other academic presentation composed by another person.

Students who are unsure as to what constitutes a case of plagiarism should consult their instructor.

2. Submitting the same essay, presentation, or assignment more than once whether the earlier submission was at this or another Institute, unless prior approval has been obtained.
3. Cheating on an examination or falsifying material subject to academic evaluation. Cheating includes having any materials other than those authorized by the examiners during an exam.
4. Impersonating a candidate at an examination or availing oneself of the results of such impersonation.

5. Submitting false records or information, in writing or orally, or failing to provide relevant information when requested.
6. Falsifying or submitting false documents, transcripts, or any other academic credentials.
7. Disrupting instructional activities, including making it difficult to proceed with scheduled lectures, seminars, examinations, tests, etc.
8. Evidencing symptoms of alcohol or drug use while on school property, or the procurement or possession of illegal substances on school property.
9. Damaging, removing, or making unauthorized use of the Institute's property, or the personal property of faculty, staff, students, or others at the Institute. Without restricting the generality of *property*, this includes information, however it may be recorded or stored.
10. Assaulting individuals, including conduct which leads to the physical or emotional injury of faculty, staff, students, or others at the Institute, or which threatens the physical or emotional well-being of faculty, staff, students, or others at the Institute.
11. Attempting to engage in, or aiding and abetting others to engage in, conduct which would be considered an offense.
12. Downloading or installing software on school equipment without express permission from school authorities.
13. Failing to comply with any penalty imposed for misconduct.

Penalties
The penalties that may be imposed, singly or in combination, for any of the above offenses may include, but are not limited to, the following:
1. A failing grade or mark of zero for any course, examination, or assignment in which the academic misconduct occurred.
2. Suspension from the Institute for a specified period of time or indefinitely. Students will not receive credit for courses taken at another institution during a suspension.
3. Reprimand, with the letter placed in the student's file.
4. Restitution, in the case of damage to property or unauthorized removal of property.
5. A notation on the student's permanent record of the penalty imposed.

Warning
1. The penalty for plagiarism or for cheating is normally suspension from the Institute.
2. Charges filed under federal or state legislation or the commencement of civil proceedings do not preclude disciplinary measures taken by the Institute.

Procedures
An alleged instance of student misconduct deemed serious enough for action by the Institute shall be referred to a disciplinary committee. After an investigation and hearing at which the student is invited to appear, the committee reports to the Dean of Faculty. The student then has the opportunity to meet with the Dean of Faculty, if he or she wishes, before a decision is made.

A student suspected or apprehended in the commitment of an offense shall be notified, within a reasonable period of time, of intention to report the alleged offense to a department head, Student Services Director, or other appropriate person. The student shall also be given the opportunity to explain the incident and, if he or she requests, to meet with a department head, Student Services Director, or other appropriate person, before the alleged offense is reported to the Dean of Faculty.

Dismissal by the Institute
By written notice to a student, the Institute may, at its sole discretion, dismiss a student at any time if he or she is in default of any of the terms, covenants, or conditions of the Institute. Furthermore, the Institute reserves the right to withdraw a student if he or she is unable to maintain the minimum required GPA in his or her courses at the end of each semester.

Appeals
A student has the right to dispute the decision of the Dean of Faculty. A student who wishes to make an appeal must notify the Chief Operating Officer in writing and must provide a full explanation of the reasons for appealing.

Appeal hearings take place before a committee called together by the Chief Operating Officer. A student is entitled to be represented or assisted throughout the appeal process by an advocate who may be a friend, relative, or legal counsel. The student is entitled to explain the reasons for appealing either orally or in writing, and he or she may call witnesses. The Dean of Faculty is also present and puts forth the reasons for the original decision.

The members of the committee may ask questions of both the student and the Dean of

Faculty. As soon as possible after the hearing is completed, the Chief Operating Officer will notify the student of the final decision in writing.

Real-Time Interactive Simulation

The Baccalaureate and Associate Degrees of Science in Real-Time Interactive Simulation

Program Overview

Both programs focus on the subject of computer simulation with an emphasis on real-time interactive simulation technologies. They offer extensive training in mathematics and physics as a foundation for the various topics presented in general computer science and computer graphics. The various lectures offered each semester converge towards the creation of a practical project. Each project embodies the theoretical knowledge gained from the courses offered in the previous and current semesters. These projects are game-oriented productions since games are a perfect media to present complicated subjects in a format agreeable to students. The advantages of game-oriented productions are:

- Games are graphics-oriented simulations, including two and three-dimensional based simulations.
- Games can realistically reproduce or simulate natural phenomena and real-life events. Flight simulators are excellent examples of such simulations.
- Games are highly interactive, requiring an elaborate and efficient Graphical User Interface (GUI). The development of a GUI requires the management of windows, menus, dialog boxes, and hardware resources including keyboards, mice, and display monitors.
- Games react in real time. The implementation of such simulations requires a thorough knowledge of computer hardware and computer languages.
- Games are story-based simulations requiring a plot in which game objects must interact intelligently with each other. Therefore, in order to make games challenging and interesting, students must design and implement good artificial intelligence algorithms, which serve as the cognitive processes for the computer-controlled game objects.
- Games could be designed for either a single or multiple-player environment. The development of a multiple-player game requires the understanding of subjects such as computer networks, TCP/IP, and Internet programming.

- Games are excellent examples of large and complex productions. Teamwork is essential to the successful completion of such productions. Therefore, students are divided into teams and are rigorously trained in Object-Oriented Programming Languages, paradigms, and Software Engineering techniques and practices. These collaborative efforts reinforce student ability to work competently within a group while completing projects.

Graduates of these programs will gain the skills required to successfully pursue careers in the rapidly growing world of computer technologies in general, and computer graphics and simulations in particular. Students should note that those completing a baccalaureate degree program will have an additional two years of academic and practical training in advanced concepts of mathematics, graphics, and simulations. Since successful graduates of both programs will have developed an extensive portfolio of games, the computer/video game industry may be their prime choice in choosing a career field. Graduates of the baccalaureate degree program may expect intermediate level job opportunities, while associate degree graduates will be prepared for entry-level jobs in the industry.

These degree programs are intense educational experiences in a specialized, highly technical area. Rather than attempt to provide a broad, general education, these programs directly prepare students for a rapidly expanding career field. Staff and faculty are prepared to guide students desiring more general education course work about supplementary opportunities available through other institutions.

Length

The baccalaureate degree program consists of 154 credits offered over 8 semesters of 15 weeks each. This program usually takes four academic years to complete.

The associate degree program consists of 82 credits offered over 4 semesters of 15 weeks each. This program usually takes two academic years to complete.

Baccalaureate of Science Recommended Sequence of Required Classes (154 credits)

Semester	Required Courses	Credits
Semester 1	MAT 100 or 140	4
	CS 100	3
	CS 120	3
	GAM 100	3
	ENG 110	3
	ART 210	2
	Semester Total	18*
Semester 2	MAT 150	4
	CS 105	3
	CS 170	3
	CS 180	3
	GAM 150	3
	ENG 150	3
	SOS 150	3
	Semester Total	22*
Semester 3	MAT 200	4
	CS 200	3
	CS 220	3
	CS 230	3
	GAM 200	4
	PHY 200	3
	Semester Total	20
Semester 4	CS 250	3
	CS 260	3
	CS 270	3
	CS 280	3
	GAM 250	4
	MAT 250	3
	PHY 250	3
	Semester Total	22
Semester 5	CS 300	3
	CS 310	3
	CS 330	3
	MAT 300	3
	GEN 300	3
	GAM 300	5
	Semester Total	20
Semester 6	One of: MAT 350-360	3
	CS 350	3
	CS 360	3
	One of: CS 370, 380, 381, 400, 460	3
	GAM 350	5
	Elective	3
	Semester Total	20
Semester 7	ART 400	2
	ENG 400	3
	One of: CS 370, 380, 381, 400, 460	3
	GAM 400	5
	Elective	3
	Semester Total	16
Semester 8	ENG 450	2
	One of: CS 370, 380, 381, 400, 460	3
	CS 420	3
	GAM 450	5
	Elective	3
	Semester Total	16
	Total	**154**

Associate of Science Recommended Sequence of Required Classes (82 Credits)

Semester	Required Courses	Credits
Semester 1	MAT 100 or MAT 140	4
	CS 110	3
	CS 120	3
	GAM 100	3
	ENG 110	3
	ART 210	2
	Semester Total	18*
Semester 2	MAT 150	4
	CS 105	3
	CS 170	3
	CS 180	3
	GAM 150	3
	ENG 150	3
	SOS 150	3
	Semester Total	22*
Semester 3	MAT 200	4
	CS 200	3
	CS 220	3
	CS 230	3
	GAM 200	4
	PHY 200	3
	Semester Total	20
Semester 4	CS 250	3
	CS 260	3
	CS 270	3
	CS 280	3
	GAM 250	4
	MAT 250	3
	PHY 250	3
	Semester Total	22
	Total	**82**

*Students must receive special permission from the Dean to take more than 18 credits first semester and 22 credits second semester.

Courses Offered

Computer Science Department

CS 100 *Computer Environment I (3 Cr.)*
CS 105 *Computer Environment II (3 Cr.)*
CS 120 *High Level Programming I (3 Cr.)*
CS 170 *High Level Programming II (3 Cr.)*
CS 180 *Operating System I, Man-Machine Interface (3 Cr.)*
CS 190 *Special Topics in Computer Science I (3 Cr.)*
CS 200 *Computer Graphics I (3 Cr.)*
CS 220 *Advanced C (3 Cr.)*
CS 230 *Game Implementation Techniques (3 Cr.)*
CS 240 *Special Topics in Computer Science II (3 Cr.)*
CS 250 *Computer Graphics II (3 Cr.)*
CS 260 *Computer Networks (3 Cr.)*
CS 270 *Advanced C++, Designing Classes (3 Cr.)*
CS 280 *Data Structures (3 Cr.)*
CS 300 *Advanced Computer Graphics I (3 Cr.)*
CS 310 *Low-Level Programming I (3 Cr.)*
CS 330 *Design and Analysis of Algorithms (3 Cr.)*
CS 350 *Advanced Computer Graphics II (3 Cr.)*
CS 360 *Low-Level Programming II (3 Cr.)*
CS 370 *Image Processing (3 Cr.)*
CS 380 *Robotic Intelligence (3 Cr.)*
CS 381 *Machine Learning (3 Cr.)*
CS 400 *Ray Tracing I (3 Cr.)*
CS 420 *Graphics File Format (3 Cr.)*
CS 460 *Adv. Animation and Modeling* (*3 cr.*)

Game Software Design and Production Department

GAM 100 *Project Introduction (3 Cr.)*
GAM 150 *Project I (3 Cr.)*
GAM 200 *Project II (4 Cr.)*
GAM 250 *Project II (4 Cr.)*
GAM 300 *Project III (5 Cr.)*
GAM 350 *Project III (5 Cr.*
GAM 400 *Project IV (5 Cr.)*
GAM 450 *Project IV (5 Cr.)*
GAM 390 *Internship I (1-5 Cr.)*
GAM 490 *Internship II (1-5 Cr.)*

General Education Department

ART 210 *Art Appreciation (2 Cr.)*
ART 400 *Drawing Fundamentals (2 Cr.)*
ENG 110 *Composition (3 Cr.)*
ENG 150 *Mythology for Game Designers (3 Cr.)*
ENG 400 *Creative Writing for Game Design (3 Cr.)*
ENG 450 *Elements of Media for Game Developers (2 Cr.)*
GEN 300 *3D Computer Animation Production I (3 Cr.)*
GEN 350 *3D Computer Animation Production II (3 Cr.)*
GEN 400 *Multimedia Aspects of Game Making I (3 Cr.)*
GEN 450 *Multimedia Aspects of Game Making II (3 Cr.)*
SOS 150 *Society and Technology (3 Cr.)*

Mathematics Department

MAT 100 *Algebra and Trigonometry (4 Cr.)*
MAT 140 *Linear Algebra and Geometry (4 Cr.)*
MAT 150 *Calculus and Analytic Geometry I (4 Cr.)*
MAT 200 *Calculus and Analytic Geometry II (4 Cr.)*
MAT 250 *Linear Algebra (3 Cr.)*
MAT 256 *Introduction to Differential Equations (3 Cr.)*
MAT 300 *Curves and Surfaces (3 Cr.)*
MAT 350 *Adv. Curves and Surfaces (3 Cr.)*
MAT 351 *Quaternions, Interpolation, and Animation (3 Cr.)*
MAT 352 *Wavelets (3 Cr.)*
MAT 353 *Differential Geometry (3 Cr.)*
MAT 354 *Discrete and Computational Geometry (3 Cr.)*
MAT 355 *Graph Theory (3 Cr.)*
MAT 356 *Adv. Differential Equations (3 Cr.)*
MAT 357 *Numerical Analysis (3 Cr.)*
MAT 358 *Discrete Mathematics (3 Cr.)*
MAT 359 *Computational Algebraic Geometry (3 Cr.)*
MAT 390 *Special Topics (3 Cr.)*
MAT 399 *Independent Study (3 Cr.)*
MAT 400 *Introductory Analysis (3 Cr.)*
MAT 450 *Abstract Algebra (3 Cr.)*
PHY 200 *Motion Dynamics (3 Cr.)*
PHY 250 *Waves, Optics, and Aerodynamics (3 Cr.)*
PHY 300 *Advanced Mechanics (3 Cr.)*
PHY 350 *Physics Simulation (3 Cr.)*

Department of Computer Science (CS)

Note: Some of the upper division Computer Science classes are now electives. Students will be required to take the same number of classes as previously, but now there are choices. Effective immediately, the B.S. program requires any three of the following classes: CS 370, CS 380, CS 381, CS 400, or CS 460.

CS 100 Computer Environment I (3 Cr.)
Pre-requisites: None
Description: The objective of this course is to provide a good understanding of the fundamental elements on which computers are based. Topics include digital systems, logic circuits and algebra, and data representations. This knowledge eliminates mysteries about hardware and provides a well-rounded understanding of computers.

CS 105 Computer Environment II (3 Cr.)
Pre-requisites: CS 100, CS 120
Description: This course builds on the fundamentals learned in CS 100 and introduces microprocessors, micro-controllers, computer architecture, low-level programming, microprocessor development systems, and high-level language interpretation. The acquired knowledge is applied towards building a micro-controller-based machine such as a simple robotic car.

CS 120 High Level Programming I – The C Programming Language (3 Cr.)
Pre-requisites: None
Concurrent Courses: CS 100
Description: The objective of this course is to present the C/C++ programming language. It serves as a foundation of all high level programming courses and projects. The course provides the fundamentals in programming control-flows (such as statement grouping, decision making, case selection, procedure iteration and termination test, etc.) and basic data types (such as structures, unions, pointers, etc.). The lexical convention, syntax notation, and preprocessor presentation are discussed intensively. The course briefly introduces the C++ programming language and the concept of Object-Oriented Programming.

CS 170 High Level Programming II – The C++ Programming Language (3 Cr.)
Pre-requisites: CS 120
Description: This course is a continuation of High Level Programming I [CS 120]. The course starts where CS 120 left off, that is, with the study of Object-Oriented Programming. OOP is discussed in detail and will be used throughout the course. Students will be introduced to more advanced concepts of higher-level programming using the C++ programming language.

CS 180 Operating System I, Man-Machine Interface (3 Cr.)
Pre-requisites: CS 100, CS 120
Description: This course presents the various components of the memory map of a computer and the techniques involved in writing software based on operating system calls.

CS 200 Computer Graphics I (3 Cr.)
Pre-requisites: MAT 150
Concurrent Courses: CS 220
Description: The objective of this course is to provide a rigorous presentation of the mathematical elements and algorithms involved in the generation and viewing of two-dimensional graphic primitives.

CS 220 Advanced C (3 Cr.)
Pre-requisites: CS 170
Description: This course focuses on advanced topics of the C programming language. Such topics include advanced pointer manipulation techniques, pointer applications, and using standard library functions more efficiently. The course also presents many methods designed to avoid common C programming errors and pitfalls. Mastering the various topics presented in this course will enable the student to become a more productive programmer.

CS 230 Game Implementation Techniques (3 Cr.)
Pre-requisites: Sophomore standing
Description: This course discusses the construction of a ray casting engine and its application in game programming. In addition, the course topics cover bitmap manipulation techniques that are used in texture mapping two-dimensional objects.

CS 250 Computer Graphics II (3 Cr.)
Pre-requisites: CS 200
Description: This course is the continuation of the Computer Graphics I [CS200] course taken in the previous semester. Particular emphasis is placed on studying the mathematical elements and algorithms used in the generation and viewing of three-dimensional graphic primitives.

CS 260 Computer Networks I (3 Cr.)
Pre-requisites: CS 170
Description: This course introduces the hierarchical network communication in a distributed computing environment. Course topics cover network technologies, architecture, and protocols. It prepares the students for programming multi-player games in later semesters.

CS 270 Advanced C++, Designing Classes (3 Cr.)
Pre-requisites: CS 220
Description: This course presents the Object-Oriented Methodologies used in the development of large software projects. Combined with the knowledge acquired in the C++ Programming Language courses [CS 120/170], students will be able to better manage their game software design and production and produce reusable code and libraries.

CS 280 Data Structures (3 Cr.)
Pre-requisites: CS 220
Description: The objective of this course is to introduce the classical abstract data types (ADT) in computer science. The ADTs provide the hierarchical views of data organization used in programming. The course topics cover the algorithms and primitives of the data structure for list, stack, queue, binary tree, and B-tree.

CS 300 Advanced Computer Graphics I (3 Cr.)
Pre-requisites: CS 250
Description: This course deals with the advanced topics of computer graphics that are involved in viewing three-dimensional environments. Particularly, the course topics cover algorithms used for detecting the visible lines and surfaces of three-dimensional objects.

CS 310 Low-Level Programming I (3 Cr.)
Pre-requisites: CS 120
Description: This course provides the students with an introduction to microprocessor architecture, as well as the knowledge required to directly address and program the microprocessor and the various hardware devices connected to it. The resulting code is usually faster than similar code written in a high level language such as C or C++. Hence, it has great importance in improving the response speed of real-time interactive programs.

CS 330 Design and Analysis of Algorithms (3 Cr.)
Pre-requisites: CS 270, CS 280
Description: The objective of this course is to design and analyze algorithms on the ADT such as table, queue, binary tree, and linked list. Particular emphasis is placed on studying the correctness and efficiency of these algorithms.

CS 350 Advanced Computer Graphics II (3 Cr.)
Pre-requisites: CS 300
Description: This course deals with the advanced topics of computer graphics that are involved in rendering a three-dimensional environment. Particular emphasis is placed on adding realism to the rendered surface of three-dimensional objects as a result of lighting, shading, and texture mapping.

CS 360 Low-Level Programming II (3 Cr.)
Pre-requisites: CS 310
Description: The aim of this course is to present the architecture of the hardware used in the implementation of the main, low-level game projects [GAM 300, GAM 350].

CS 370 Image Processing (3 Cr.)
Pre-requisites: CS 250, CS 280
Description: This course introduces some of the popular image processing techniques. The course material covers methods that can be applied in creating special effects with digital images and preparing graphics information for either human or computer interpretation.

CS 380 Robotic Intelligence (3 Cr.)
Pre-requisite: CS 280
Description: The techniques developed for real-time adaptive control of mobile robots are among the AI methods most suitable for game characters. Robots and game characters must both navigate unknown terrain and avoid or overcome obstacles. All planning must be subject to instant revision. This class will treat game characters as virtual robots. Robotic AI methods will be used without building any physical robots. The class will cover the hierarchical control paradigm and expert systems based on LISP or related scripting languages. It then focuses on reactive agents using subsumption architecture or potential fields. The class then examines the hybrid paradigm and navigation. It concludes with implementation examples in games.

CS 381 Machine Learning (3 Cr.)
Pre-requisite: CS 280
Description: This course deals with the question of how to construct computer programs that automatically improve with experience. Observed events are used to inductively construct decision trees, which can be used by computer-controlled game characters to change behaviors. Other techniques examined include Bayesian learning, artificial neural networks, and genetic algorithms.

CS 400 Ray Tracing (3 Cr.)
Pre-requisites: CS 350
Description: This course introduces the ray tracing technique in computer graphics. Particular emphasis is placed on studying the mathematical elements of light illumination models, light

intersection calculations, and also data structure organization.

CS 420 Graphics File Format (3 Cr.)
Pre-requisites: CS 250, CS 280
Description: This course introduces the concept of storing and retrieving digital images in a coded format. The course topics cover various popular graphic file formats such as PCX, TIFF, GIF, JPEG, DXF, etc.

CS 460 Adv. Animation and Modeling (3 Cr.)
Prerequisite: CS 300, MAT 300
Description: 3D animation and modeling play significant roles in computer simulation and video game software. This course introduces algorithms for specifying and generating motion for graphical objects. It addresses practical issues, surveys accessible techniques, and provides straightforward implementations for controlling 3D moving entities with different characteristics.

Department of Game Software Design and Production (GAM)

GAM 100 Project Introduction (3 Cr.)
Pre-requisites: None
Concurrent Courses: CS 100, CS 120
Description: This class is intended to be the basis of the Game Production curriculum for the remainder of the student's time at DigiPen. It will present an overview of the way the game development industry works, a history of game development, and exposure to the positions and job responsibilities that each member of a game development team has along with the industry requirements for the creation of a game design document (GDD) and a technical design document (TDD). Over the remainder of the semester, students will be broken into teams responsible for creating several text-based games, complete with a functional GDD and TDD.

Additionally, each student will be required to create several individual games using the ProjectFUN game development environment created by DigiPen. Games created via ProjectFUN will be graphical in nature, serving to enhance the student's retention of C/C++ coding techniques and math functions taught in the first semester CS and MAT classes.

GAM 150 Project I (3 Cr.)
Pre-requisites: GAM 100
Description: Continuing with the teams they were assigned to in GAM 100, each team will be responsible for preparing a GDD and TDD for one team-based project. Teams complete the approved game design according to the schedule they establish in their technical design. Each team will present these completed games to the Institute at large during the final week of the semester. Additionally each student is responsible for doing a ProjectFUN game on his or her own.

GAM 200/GAM 250 Project II (4 Cr. Each)
Pre-requisites: GAM 200: GAM 150, CS 170, 180, MAT 150; **GAM 250:** GAM 200, MAT 200, CS 200, 230
Concurrent Courses: GAM 200: MAT 200, CS 200, 230; **GAM 250:** CS 250, 260, 270, 280
Description: This project is divided into two semesters where students are tasked with designing and implementing a scrolling game engine. Similar to Project I, they start by writing a GDD and TDD. Along with creating a scrolling engine, students will also explore networking within conventional games, sound, and music as it affects game design during this full year project as well as an introduction to designing games for a multiplayer environment.

Since the project is intended to be a multiplayer game, in GAM 200 students create multiplayer games on one system that migrate to being networked onto multiple machines in GAM 250.

GAM 300/350 Project III (5 Cr. Each)
Pre-requisites: GAM 300: GAM 250, CS 250, 260, 270, 280; **GAM 350:** GAM 300, CS 300, 310, 320, 330, GEN 300
Concurrent Courses: GAM 300: CS 300, 320, 330, GEN 300. **GAM 350:** MAT 250, CS 370
Description: This project is divided into two semesters whose focus is on low-level programming of a simulation type game, complete with artificial intelligence. Given the complexities and nuances of a simulation, ideally the teams will remain together for the entire year to work on a specific form of simulation (sport, vehicle, or city management).

A large component of this class will be focused on AI-related research and the requirements for AI in games from a simulation perspective. Also, since real-game and real-life physics will be required to be modeled in the projects, an understanding of what this entails will be covered

in class. Additionally, students will also learn about networking up to eight players on a LAN.

Similar to Project II, students present their ideas through a concept proposal and in the form of a written GDD and TDD. These components demonstrate an understanding of low-level programming and the ability to define a memory map for their applications. After their presentation, students go through an extensive code review using professional tools.

GAM 400/450 Project IV (5 Cr. Each)
Pre-requisites: GAM 400: GAM 350, CS 350, 360, 370, GEN 350, MAT 250; **GAM 450:** GAM 400, MAT 300, PHY 200, CS 400, GEN 400
Concurrent Courses: GAM 400: MAT 300, CS 400; **GAM 450:** MAT 350
Description: This is a two-semester project, with a focus on PC-based 3D games. The requirements of modeling in a 3D (as opposed to sprite-based) game will be covered as well.

3D games offer all of the challenges of the first three projects plus the added nuance of management of polygonal (vector-based) characters as opposed to sprite-based graphics. Furthermore, analog and digital controllers and other forms of tertiary input are covered. 3D games also push the student to manage their memory effectively in order to sustain a high frame rate for polygonal animation. Advanced techniques such as pixel shading may be covered.

Similar to Project III, the students present their ideas in the form of a written GDD and TDD. The written components must include all the sections described earlier in Project III as well as marketing materials, user manuals, packaging, sell sheets, focus group responses, extensive examples of beta testing, and creation of a final version deliverable for commercial release.

GAM 390/490 Internship I/II (1-5 Cr.)
Pre-requisites: GAM 200, GAM 250, GAM 300
Description: An internship is any carefully monitored work or service experience in which an individual has intentional learning goals and reflects actively on what she or he is learning throughout the experience. It is usually a professional activity under general supervision of an experienced professional and in a job situation, which places a high degree of responsibility on the student. Internships are well structured along the *Internship Guidelines* available in the Administration Office.

Department of General Education (GEN)

ART 210 Art Appreciation (2 Cr.)
Pre-requisites: None
Description: This introduction to art will provide students with a better understanding of the artistic influences of our modern culture. Along with the history of art, students will study the meanings, purposes, styles, elements, and principles of art and the various media used to create works of art. In helping students gain basic awareness, knowledge, and enjoyment of the visual arts, the course should provide the groundwork for further personal study in the arts. This in turn will influence the development of their creativity.

ART 400 Drawing Fundamentals (2 Cr.)
Pre-requisites: None
Description: The development of strong drawing skills is of extreme importance as they are essential tools for expressing ideas, particularly during the pre-production stages of an animation project. Therefore, the objective of this course is to present the basic elements of drawing and graphic design in order to improve the student's practical ability to draw with skill and imagination. Methods of observing, describing, and organizing form will be covered using various mediums such as pencil, charcoal, and color pencils.

ENG 110 Composition (3 Cr.)
Pre-requisites: None
Description: George Leonard, a leading writer on education, wrote: "To learn is to change. Education is a process that changes the learner." Writing is also a process that changes the writer. In this practical course in composition, students will spend time generating ideas for writing, sharing and critiquing their writing and ideas, revising their ideas, and learning more about themselves as a result. Emphasis will be placed on using writing as a tool to explore and discover their thought processes, beliefs, and world concepts.

Students will employ writing as a tool to develop critical thinking skills. In the process of organizing ideas and, subsequently, manifesting those ideas into various compositional styles and forms, students will become conscious of the concepts which have shaped and are continually shaping their personal realities.

ENG 150 Mythology for Game Designers (3 Cr.)
Pre-requisites: ENG 110
Description: The power of myth resides in its ability to touch the essence of our humanity and put meaning into our lives. Artists, filmmakers, game designers, and writers have appropriated

elemental mythological premises and 'updated' them to create modern myths accessible to contemporary audiences. Whether we are playing a role-playing game wherein the task is to rescue the princess and save the planet, reading the latest cyberpunk novel, or watching an animated Disney classic, the power of mythology touches our psyches.

This course is an overview and analysis of cross-cultural mythology presented as prose, film, and game. The idea that myths have influenced cultures of the past and continue to inform and influence our culture of today will be discussed in depth throughout the course. The course will also examine the practical use of myth. Emphasis will be placed on the monomyth of the hero's journey and how a game developer may redefine the archetypal figures and adventures therein and incorporate them in a game design.

ENG 400 Creative Writing for Game Design (3 Cr.)
Pre-requisites: ENG 150
Description: Creative Writing for Game Design will focus on interactive storytelling, threads and multiple end-game scenarios, the construction of a game design document, and basic story-telling skills. Exercises are designed to brainstorm ideas and hone students' talents of characterization; exposition, plot, conflict, back-story, dialogue, and appropriate use of language will be presented. Students will learn how symbols, graphic style, and sound can be utilized in telling the story of their game. Additionally, students will create a character bible, a story bible, and also be encouraged to access their own cultures and life experience, transforming it into creative material. At the end of the course, students will write a game design document.

ENG 450 Elements of Media for Game Developers (2 Cr.)
Pre-requisites: None
Description: In this course, students will be introduced to the principles of film and other non-game forms of media. Students will review technologically and artistically groundbreaking media. Emphasis will be placed on analyzing film, TV, and even graphic novels, examining how certain elements of historical and modern media can be adapted to the burgeoning industry of game and interactive media development. Students will have an opportunity to brainstorm how they, as future programmers and designers, might borrow from the masters of 20th century media and utilize such knowledge to surpass the current boundaries of interactive media products.

GEN 300 3D Computer Animation Production I (3 Cr.)
Pre-requisites: None
Description: This course deals with all the basic theories and techniques utilized in the production of computer animation. Students are introduced to a computer-based 3D animation package, which they will use throughout the course.

GEN 350 3D Computer Animation Production II (3 Cr.)
Pre-requisites: GEN 300
Description: This course builds on the fundamentals taught during GEN 300. Students learn about key framing, special effects, final rendering, and recording.

GEN 400 Multimedia Aspects of Game Making I (3 Cr.)
Pre-requisites: None
Description: With the introduction into the market of high-level tools allowing the assembly of video games from a set of pre-programmed components, game programmers can very quickly assemble games. More often than not, these games lack optimization and are more suitable for prototyping or creating interactive, multi-media presentations. Some of these tools include high-level programming languages in addition to the click and point Graphic User Interface.

GEN 450 Multimedia Aspects of Game Making II (3 Cr.)
Pre-requisites: GEN 400
Description: In this second section of the course, students take the knowledge gained in GEN 400 and apply it in the creation of a game or an interactive portfolio.

SOS 150 Society and Technology (3 Cr.)
Prerequisites: None
Description: This course offers selected techniques and perspectives from the social sciences to examine the nature of technological activity. The course explores technical domains and the interaction and impact social and cultural systems have had on technology. The course is intended to help students understand the range of consequences that technology in general, and information and communication technologies (ICT) in particular, can have when they are shaped and used by individuals, organizations, and society. It addresses many of the technologies, large and small, that have affected U.S. society in the last century. The course explores how technologies are developed and sustained, how they interact with society, and how they affect the natural world. Through selected readings, discussion, lectures, and written assignments, students will become acquainted with the major issues and social dimensions of technology and society.

Department of Mathematics (MAT)

Note: Students in the B.S. program must choose one of the MAT 350-359 courses to fulfill their graduation requirements.

MAT 100 Algebra and Trigonometry (4 Cr.)
Pre-requisite: None
Description: This course provides a solid foundation in basic algebra, trigonometry, and vector algebra, which are essential for further studies in mathematics, physics, and computer graphics. Topics include functions and their graphs, especially polynomial, rational, trigonometric, exponential, and logarithmic functions and their inverses; conics; analytic trigonometry; identities; systems of equations; matrix algebra; vector dot product; and rotation matrices.

MAT 140 Linear Algebra and Geometry (4 Cr.)
Pre-requisite: MAT 100 or placement exam
Description: This course provides a concrete and primarily 2D introduction to linear algebra. Topics include coordinate systems, trigonometry, vectors and vector operations, representations of lines and planes, linear transformations, barycenters, and affine transformations.

MAT 150 Calculus and Analytic Geometry I (4 Cr.)
Pre-requisite: MAT 100 or MAT 140
Description: Topics include functions of a single real variable, limits, techniques of differentiation, applications to graphing, analytical geometry, physics, parametric functions, and an introduction to integration.

MAT 200 Calculus and Analytic Geometry II (4 Cr.)
Pre-requisite: MAT 150
Description: This course extends applications of the integral in physics. Topics include techniques of integration, sequences, series, and beginning vector calculus.

MAT 250 Linear Algebra (3 Cr.)
Pre-requisite: MAT 200 *or* MAT 140 and MAT 150
Description: Topics include systems of equations, Gauss-Jordan algorithm, matrices, vector spaces, determinants, subspaces, bases, linear transformations, and eigenvalues. Other topics may include applications to least-square approximations and Fourier transforms, differential equations, and computer graphics.

MAT 256 Introduction to Differential Equations (3 Cr.)
Pre-requisite: MAT 200
Description: Topics include basic theory of first and second order linear differential equations, harmonic oscillators, series solutions, and Laplace transform.

MAT 300 Curves and Surfaces (3 Cr.)
Pre-requisite: MAT 250
Description: This course introduces students to mathematical foundations of parametrized polynomial curves and surfaces. Topics include Bezier curves, control points, de Casteljau algorithm, splines, de Boor algorithm for polynomial curves, and bipolynomial and total degree surfaces.

MAT 350 Advanced Curves and Surfaces (3 Cr.)
Pre-requisite: MAT 300
Description: This course presents the mathematical foundations for non-uniform rational B-spline (NURBS) curves and surfaces. The de Casteljau and de Boor algorithms are presented and applied to knot insertion and subdivision. Other topics may include subdivision surfaces, curvature of curves and surfaces, and tensor products.

MAT 351 Quaternions, Interpolation, and Animation (3 Cr.)
Pre-requisite: MAT 250
Description: The first part of the course presents algebra and analysis of quaternions, specifically detailing groups, real manifolds and Lie groups, differential geometry of curves and hypersurfaces, and the calculus of several variables and complex variables. The second part of the course focuses on interpolation of quaternion curves, specifically covering the calculus of variations, curvature, and constrained optimization.

MAT 352 Wavelets (3 Cr.)
Pre-requisite: MAT 250
Description: Wavelets provide a method of representing and approximating functions. Topics include Fourier analysis, Haar transform, multiresolution analysis, subdivision curves and surfaces, and B-spline wavelets.

MAT 353 Differential Geometry (3 Cr.)
Pre-requisite: MAT 250
Description: Topics include parametric curves in R^3, specifically arc length, curvature, and torsion; regular surfaces in R^3, specifically fundamental forms, Gaussian curvature, the Gauss map, and

intrinsic geometry; an introduction to differentiable manifolds, Riemannian metrics, and the curvature tensor.

MAT 354 Discrete and Computational Geometry (3 Cr.)
Pre-requisite: MAT 250
Description: Geometric algorithms arise in graphics, robotics, and artificial intelligence. This course focuses on fundamental geometric algorithms and their computational complexity. Topics include triangulation, Art Gallery Theorems, Voronoi diagrams, Delaunay graph, convex hulls, Minkowski sums and path finding, and randomized algorithms.

MAT 355 Graph Theory (3 Cr.)
Pre-requisite: MAT 250
Description: In this course we examine the basics of graphs, trees, and the algorithms on them. Topics include connectedness, Euler tours, Hamiltonian cycles, spanning trees, coloring algorithms, planarity algorithms, and search algorithms.

MAT 356 Advanced Differential Equations (3 Cr.)
Pre-requisite: MAT 250
Description: Topics include stability, dynamical systems, application to classical mechanics, periodic phenomena, attractors, chaos theory, predator-prey problems, and calculus of variations.

MAT 357 Numerical Analysis (3 Cr.)
Pre-requisite: MAT 250
Description: In this course we study the numerical techniques which bridge the gap between courses like calculus and linear algebra and the implementation of these topics in a computer system. Topics include root finding, interpolation, approximation of functions, cubic splines, integration, differential equations, stability, iterative methods, eigenvalue approximation, and FFT.

MAT 358 Discrete Math Mathematics (3 Cr.)
Pre-requisite: MAT 200 _or_ MAT 140 and MAT 150
Description: Topics include propositional and first order logic, basic number theory, enumeration, recurrence relations, mathematical induction, generating functions, basic probability and graph theory, and asymptotic analysis.

MAT 359 Computational Algebraic Geometry (3 Cr.)
Pre-requisite: MAT 250
Description: This course examines the applications to intersections of curves and surfaces and multivariate polynomial splines. Possible projects could involve the use of symbolic algebra packages such as PARI. Topics include affine varieties, polynomial ideals, algebra-geometry dictionary, monomial orderings, Grobner bases, Buchberger algorithm, resultants, and Zariski closure of algebraic sets.

MAT 390 Special Topics (3 Cr.)
Pre-requisite: Consent of instructor
Description: Topics and content vary according to instructor.

MAT 399 Independent Study (3 Cr.)
Pre-requisite: Permission of instructor
Description: Topics and content vary according to student-instructor collaboration.

MAT 400 Introductory Analysis (3 Cr.)
Pre-requisite: MAT 250
Description: Topics include real and complex numbers, metric spaces, sequences and series, continuity, differentiation, and integration.

MAT 450 Abstract Algebra (3 Cr.)
Pre-requisite: MAT 250
Description: Topics include basic theory of groups, rings, and fields; symmetry; quotient spaces; homomorphism theorems; group actions; matrix groups; and linear algebraic forms and dual space.

PHY 200 Motion Dynamics (3 Cr.)
Concurrent Courses: MAT 200
Description: This course provides a fundamental understanding of the dynamics of various moving bodies. This course allows students to understand and implement the laws of physics into their simulation programs in order to achieve realism.

PHY 250 Waves, Optics and Aerodynamics (3 Cr.)
Pre-requisites: PHY 200
Description: This course provides a fundamental understanding of the properties of light, periodic motions, and fluid dynamics. By understanding the physical laws that govern these phenomena, students will be able to implement ray casting and ray tracing algorithms, create realistic flight simulators, and create various lens effects in two and three-dimensional environments.

PHY 300 Advanced Mechanics (3 Cr.)
Prerequisites: PHY 200, PHY 250, MAT 150, MAT 200, MAT 250, CS 200, CS 250, CS 300
Description: This course covers the physics behind more complex mechanical interactions as well as the numerical techniques required to approximate the systems for simulations. A thorough analysis of mechanical systems through energy analysis will provide the basis for the understanding of linear and rotational systems. The combination of theoretical physics and numerical methods will provide the student with the background for simulating physical systems

with limited computational power. Topics covered include Lagrangian Dynamics, Hamilton's Equations, dynamics of rigid bodies, the use of the inertia tensor, collision resolution, and numerical techniques including methods of approximation.

PHY 350 Physics Simulation (3 Cr.)
Pre-requisites: PHY 300, MAT 300
Description: Students will gather into teams of two to three and create a physics engine with minimal interface and graphics. Weekly lectures will go over the implementation of concepts covered in PHY300 as well as collision resolution, objects on surfaces, holonomic and nonholonomic constraints, numerical approximations, and special topics that address project-specific physics.

3D Computer Animation

Associate of Applied Arts Degree in 3D Computer Animation

Program Overview

As the 3D computer animation industry matures, companies increasingly seek employees with skills beyond simply a working knowledge of a specific commercial 3D software package. More than ever, employers need computer animators who have strong content creation skills. Studios like to see strong traditional art skills in addition to an understanding of fundamental animation principles. If they wish to be successful, animators must also have a good grasp of story development, character design, storyboarding, lighting, camera composition, and sound design. Graduates receiving the associate degree can anticipate eligibility for entry-level jobs as 3D artists in various industries, including game development, electronic media, and graphic design.

DigiPen's Associate of Applied Arts Degree in 3D Computer Animation seeks to achieve the following:

- To provide students with the necessary practical skills using industry-standard, computer hardware and software.
- To educate students about creative content issues to ensure they have the ability to maximize the fullest potential of this digital medium.
- To help students develop a strong work ethic needed by successful production artists including the ability to work with others and to complete the work by the deadline.
- To allow students to express themselves artistically while ensuring that student portfolio work is marketable to industry companies.
- To implement a production oriented environment that will allow students to produce a high quality portfolio.

The intensive theory courses will be reinforced through multiple production cycles whereby students will be expected to complete several animation productions.

Length

The Associate of Applied Arts Degree in 3D Computer Animation program consists of 80 credits offered over 4 semesters of 15 weeks each. This course usually takes a total of two academic years to complete.

Associate of Applied Arts Recommended Sequence of Required Classes (80 Credits)

Semester	Required Courses	Credits
Semester 1	ANI 101	3
	ART 101	3
	ART 115	4*
	CG 105	3
	ENG 115	3
	PRJ 105	4**
	Semester Total	20
Semester 2	ANI 151	3
	ART 155	3
	CG 275	3
	FLM 151	3
	FLM 275	3
	PRJ 155	5
	Semester Total	20
Semester 3	ART 205	3
	ART 225	3
	CG 300	3
	ENG 315	3
	FLM 201	3
	PRJ 205	5
	Semester Total	20
Semester 4	ANI 125	3
	ART 125	3
	ART 255	3
	CG 350	3
	FLM 250	3
	PRJ 255	5
	Semester Total	20
	A.A.A. Program Total	**80**

* ART 115 is 3 credits for Fall Semester, 2003, only.
** PRJ 105 is 5 credits for Fall Semester, 2003, only.

Courses Offered

Animation

ANI 101 *Introduction to Animation – Theories and Techniques I (3 Cr.)*
ANI 125 *Acting for Animation (3 Cr.)*
ANI 151 *Advanced Animation – Theories and Techniques II (3 Cr.)*

Art

ART 101 *The Language of Drawing (3 Cr.)*
ART 115 *Art and Technology (4 Cr.)*
ART 125 *Tone, Color, and Composition (3 Cr.)*
ART 155 *Basic Life Drawing and Anatomy (3 Cr.)*
ART 205 *Character and Environment Design (3 Cr.)*
ART 210 *Art Appreciation (3 Cr.)*
ART 225 *3-Dimensional Design and Sculpture (3 Cr.)*
ART 255 *A.A.A. Portfolio (3 Cr.)*

Computer Graphics

CG 105 *Introduction to 3D Graphics (3 Cr.)*
CG 275 *3D Character Animation (3 Cr.)*
CG 300 *3D Environment and Level Design (3 Cr.)*
CG 350 *3D Graphics for Gaming (3 Cr.)*

English

ENG 115 *Storytelling (3 Cr.)*
ENG 200 *Literature (3 Cr.)*
ENG 315 *Story Through Dialogue (3 Cr.)*

Film

FLM 151 *Visual Language and Film Analysis (3 Cr.)*
FLM 201 *Cinematography (3 Cr.)*
FLM 250 *Post-Production (3 Cr.)*
FLM 275 *Sound Design and Foley (3 Cr.)*

Projects

PRJ 105 *Introduction to 3D Production (4 Cr.)*
PRJ 155 *Personal 3D Production (5 Cr.)*
PRJ 205 *Team Projects (5 Cr.)*
PRJ 255 *Final Projects (5 Cr.)*

Course Descriptions

Animation (ANI)

ANI 101 Introduction to Animation – Theories and Techniques (3 Cr.)
Pre-requisites: None
Description: This course introduces students to the principles of animation through classical animation techniques. Students will explore the art of creating convincing movement through good timing, spacing, and drawing. The work of master animators will be screened and analyzed frame by frame to illustrate the principles covered in class, and the students will put their knowledge to work through a series of exercises. The ultimate goal of both this course and its sequel will be to introduce methods by which animators "act" and bring characters to life through sequential images.

ANI 125 Acting for Animation (3 Cr.)
Pre-requisites: None
Description: An animator's ability to express attitude, thought, and emotion through body language is a fundamental skill necessary for success. Therefore, the focus of this course is to present tools and techniques for translating thoughts and feelings into specific gestures and actions. The course will introduce the students to the history of acting in the theater, animation, and film. Students will explore the basic fundamentals and differences of acting for the stage, film, and animation through a series of acting exercises and problems. Special emphasis will be given to classical method acting.

ANI 151 Advanced Animation – Theories and Techniques II (3 Cr.)
Pre-requisites: ANI 101
Description: Students will continue to explore and exercise the concepts and techniques of classical animation through a series of assignments. The exercises in this course will be considerably more demanding than those completed in ANI 100, as they will be longer and will require more refinement, subtlety, and creativity. There will also be a greater emphasis on character development – the expression of personality, mood, thought, and attitude through motion and posing.

Art (ART)

ART 101 The Language of Drawing (3 Cr.)
Pre-requisites: None
Description: This course explores the nature of drawing as a language skill and the use of drawing by production artists and animators. Applied drawing goals and critical thinking skills will be given special consideration. Students will be introduced to basic professional habits in drawing practice, drill, and play. Design principles, basic research, and the design process will be introduced and applied to a series of practical problems. This course will also explore basic drawing materials, drawing strategy, drawing sequence, linear drawing methodology, practice, and theory.

ART 115 Art and Technology (4 Cr.)
Pre-requisites: None
Description: This course will provide an overview of art history from Paleolithic man until the Modern day. It will trace the technological advances of society and art and consider the interplay between art and technology. Classical art materials and methods will be examined, and students will explore how art has historically impacted society. This course will have a worldwide scope and not be limited to just European and Western traditions.

ART 125 Tone, Color and Composition (3 Cr.)
Pre-requisites: ART 101
Description: This course will continue to build upon the student's ability to draw by exploring the nature and use of tone, color, and composition in drawing. Methods of creating tone, using luminance as an organizational element, and critical thinking will be emphasized. Students will be introduced to a variety of classical tonal systems and tonal illusions including atmospheric perspective, sculptural modeling, basic direct lighting, lighting position relative to viewpoint, light intensity, local value, and reflectivity. Students will then explore the artistic use of color. Systems and traditions of organizing hue and saturation will be covered, and methods of building from tonal preliminary studies will be examined. Classical forms of compositional organization such as symmetry, asymmetry, golden mean, and figure-ground relationships will also be explored.

ART 155 Basic Life Drawing and Anatomy
  (3 Cr.)
Pre-requisites: ART 101
Description: This course introduces students to the challenges of drawing the human form for animation. The goals of life drawing for animation will be examined, and then methods for attaining these goals will be demonstrated. Students will study human skeletal and muscular anatomy and learn to apply this knowledge to drawing. Special emphasis will be given to capturing skeletal structure, muscle form, emotion, and gesture. Using clothed and nude models of both genders, the students will learn to apply lessons in anatomy to the figure and will significantly expand their understanding of human kinetics and structure. Students will also be shown how to extrapolate basic human life drawing strategies to other animals.

ART 205 Character and Environment Design
  (3 Cr.)
Pre-requisites: ART 155
Description: Students apply their drawing and anatomy knowledge to the creation of animation characters. The traditions of character design and the basic structural strategies for creating animation characters will be introduced. Students will explore simplification gradients relative to human, animal, and inanimate object based characters. Issues of costume, personality, and story interaction will also be explored. Students then learn to place these characters into appropriately designed environments. Professional applications, techniques, and standards of quality will be emphasized.

ART 210 Art Appreciation (3 Cr.)
Pre-requisites: None
Description: This introduction to art will provide students with a better understanding of the artistic influences of our modern culture. Along with the history of art, students will study the meanings, purposes, styles, elements, and principles of art and the various media used to create works of art. In helping students gain basic awareness, knowledge, and enjoyment of the visual arts, the course should provide the groundwork for further personal study in the arts. This in turn will influence the development of their creativity.

ART 2253-Dimensional Design and Sculpture
  (3 Cr.)
Pre-requisites: ART 201 or ART 155
Description: This course introduces students to the principles of 3-dimensional design using both traditional and digital tools. Students are introduced to additive, subtractive, and cast sculpture. The basic concepts of architectural space, interior design, landscape design, surface interplay with light, lofted forms, and skinning systems are considered. Special emphasis is given to using modern polymer clays and building an animation maquette.

ART 255 A.A.A. Portfolio (3 Cr.)
Pre-requisites: ART 205, PRJ 205
Description: Students use this course to compile the elements of their professional portfolio. The students will be introduced to the marketing campaign needs of modern animation portfolios including visual continuity, business documents, traditional still art portfolios, process and practice samples, digital portfolios, web sites, demo reels, and promotional items. They will then use this knowledge to assemble their own portfolios. The course will also cover related information regarding job interviews, trade shows, professional standards, and contract negotiation.

Computer Graphics (CG)

CG 105 Introduction to 3D Graphics (3 Cr.)
Pre-requisites: None
Description: This course covers all of the general principles of computer graphics and introduces students to the primary 3D computer animation software used to create the various productions. In addition, students will be taught how to use a 2D paint package for the creation of maps.

CG 275 3D Character Animation (3 Cr.)
Pre-requisites: CG 105 or CG 225
Description: Students will continue to explore and exercise the concepts and techniques of 3D animation through a series of assignments applied to characters. The exercises in this course will be considerably more demanding than those completed in CG 105 as they will be longer and require more refinement, subtlety, and creativity. The emphasis will be on character development – the expression of personality, mood, thought, and attitude through motion and posing. Special consideration will be given to proper model rigging.

CG 300 3D Environment and Level Design
  (3 Cr.)
Pre-requisites: CG 275
Description: This course will introduce students to the principles of 3D environment design. Theatrical sets, architectural simulations, and level design will all be considered. In order to provide the students with a broader skill set, this course also presents the "mechanics" of how to

use another 3D animation program, with an emphasis on the unique strengths of the package.

CG 350 3D Graphics for Gaming (3 Cr.)
Pre-requisites: CG 300
Description: The tremendous growth of the video game industry has resulted in a high demand for specialized 3D animation skills. Limited color palettes, file size, file formats, surface restrictions, real-time implementation, cyclical animation, and levels of detail are some of the issues that need to be handled properly for inclusion into a game. This course examines the unique problems of creating 3D graphics for games and teaches effective production techniques for addressing these issues.

English (ENG)

ENG 115 Storytelling (3 Cr.)
Pre-requisites: None
Description: Students explore the nature of storytelling. Beginning with the psychosocial drive to tell stories, students will be exposed to the historical traditions of storytelling in all forms. The course will cover the classical elements of story structure, traditional story goals, and critical thinking strategies for matching story form to a specific goal. Through a series of oral and written exercises, students will hone their storytelling skills. Special emphasis will be given to telling stories with time restrictions and the modern commercial applications of both linear and non-linear storytelling.

ENG 200 Literature (3 Cr.)
Pre-requisites: ENG 100
Description: Students are given an overview on influential works of literature from various periods and countries in order to examine the fundamental elements that have helped these stories "stand the test of time." Providing a basic knowledge and appreciation for these works is important, as they are an incredible source of inspiration. Many of these literary works have been adapted into screenplays that were ultimately produced as films or theatrical events. Towards the end of the course, students will have an opportunity to review the films/animations and analyze whether the productions were successful or not.

ENG 315 Story Through Dialogue (3 Cr.)
Pre-requisites: ENG 115
Description: Dialogue is a critical element of modern storytelling. This course will explore the effective uses of dialogue in fiction, drama, and film. Students will discover how dialogue serves to move the action forward, build history, and develop character. Additionally, students will continue to hone their storytelling skills through a series of written and oral dialogue exercises. Consequently, students will learn traditional dialogue and scripting formats and when these formats should be used. They will also consider the aural nature of dialogue by examining topics such as onomatopoeia, alliteration, and meter.

Film (FLM)

FLM 151 Visual Language and Film Analysis (3 Cr.)
Pre-requisites: None
Description: Animation is ultimately "film making," and animators should learn from the many "classics" how to effectively bring various film production elements together. Students review several films and study how the relationships between scripts, cameras, lighting, sets, production design, sound, acting, costumes, props, directing, and production lead to successful visual stories. Students will also examine the fundamental theories underlying visual storytelling. Understanding the creative processes utilized by these influential filmmakers will provide insight into how students may improve their own animations.

FLM 201 Cinematography (3 Cr.)
Pre-requisites: FLM 151
Description: Like a director of photography, computer animators must have a good understanding of appropriate camera composition and lighting techniques to enhance the visual impact of the story being told. Appropriate composition and camera movement help to reveal action, and lighting establishes focus, place, and mood. Students will analyze examples of effective cinematic techniques from a variety of different animations and films. Assignments in camera composition, movement,

and lighting will help students solidify their understanding of the concepts presented.

FLM 250 Post-Production (3 Cr.)
Pre-requisites: FLM 201 or FLM 150
Description: The last step of any animation project involves the assembly of various production elements ranging from rendered files to sound effects. This is also the stage where the visual effects seen in today's movies are added. The focus of this course is to teach the fundamental skills that are used in post-production. Effective editing is the primary goal of the course. Students will also cover the planning, execution, and addition of special effects to animation.

FLM 275 Sound Design and Foley (3 Cr.)
Pre-requisites: None
Description: Every good animation relies on a well-designed soundtrack to enhance the production. While most animators do not produce the soundtrack themselves, they need to understand the effect of music, voice, and sound effects on an audience. More importantly, animators must be able to communicate their ideas to a musician and understand an overview of the technological possibilities of modern sound design. Initially, students will survey a broad range of music from different cultures. Emphasis will be on developing basic listening skills in hearing rhythm, melody, harmony, color, texture, and form. Students will then learn how this understanding is applied to the production needs of animation. Special attention will be given to how sound is generated, how it is used to advance a story, and how it can create mood, place, and emphasis.

Projects (PRJ)

Note: Generally, students decide the subject of the projects class animations, but the instructor must consider the undertaking within the scope of a student's skill set, commercial marketability, academic soundness, and appropriateness in nature. DigiPen reserves the right to refuse any student production proposal that it deems inappropriate. Students are also expected to maintain an exceptional level of professionalism within these production environments, striving to produce quality work. Failure to meet this standard may result in academic discipline.

PRJ 105 Introduction to 3D Production (4 Cr.)
Pre-requisites: None
Concurrent Courses: ANI 101, ART 101, ART 115, CG 105, ENG 105
Description: If one hopes to be a successful professional, it is not sufficient for an animator to only understand the theory of animation and art. He or she must also understand the rigors and demands of commercial animation production. The projects classes create academic production environments where students learn the principles, practices, and habits that will help them adapt readily to the demands of the commercial animation industry. Each projects class focuses upon a series of related production problems and culminates in the students generating professional quality work on a rigid deadline. This work will serve as the foundation for their graduation portfolios. Weekly production meetings with an instructor ensure that the production stays on schedule and that a professional quality standard is maintained.

PRJ 105 introduces students to the basic concepts of the production process utilizing small-scale applied problems in 3D animation. Students will also be introduced to the professional animation production pipeline, which they must successfully navigate in order to achieve professional results and hone their professional critical thinking skills. The course will culminate in students creating the pre-production work for their PRJ 155 project.

PRJ 155 Personal 3D Production (5 Cr.)
Pre-requisites: PRJ 100
Concurrent Courses: ANI 151, ART 155, CG 275, FLM 151, FLM 275
Description: PRJ 155 addresses two of the more serious emotional challenges facing commercial animators: professional focus and realistic expectations. Animation is a team sport, and it requires a significant commitment of time and resources to accomplish even the most mundane tasks. During this course students will face a series of choices. Each student will use the pre-production work they created in PRJ 105 to generate a single piece of limited animation. They must limit themselves to a production scale that allows for extensive professional refinement and meets the stringent specification criteria established by the faculty. Students will be introduced to realities of commercial art direction and quality control in conjunction with production deadlines. They should be prepared to repetitively revisit the same material with a relentless attention to subtle detail. (Select RTIS student projects may be incorporated into the coursework at the faculty's discretion.)

PRJ 205 Team Projects (5 Cr.)
Pre-requisites: PRJ 150
Concurrent Courses: ART 205, ART 225, CG 300, ENG 315, FLM 201
Description: This course introduces students to the realities of team-based production environments. Each student will pitch a proposed team project to the faculty and the class for consideration. (Select RTIS program junior and senior level projects may also be presented by academic approval.) The animation faculty will then decide which team projects will be produced and will assign students to specific teams based upon their artistic strengths and career goals. Each team will be assigned a primary and secondary faculty advisor.

Each student's individual effort will be measured as well as the overall success of each team. Student teams will not be allowed to jettison individual members due to production conflicts or performance, and all members will be evaluated for the overall teamwork and professional success of the group. Only the faculty will possess the ability to remove a team member for failure to perform.

PRJ 255 Final Projects (5 Cr.)
Pre-requisites: PRJ 200
Concurrent Courses: ANI 125, ART 125, ART 255, CG 350, FLM 250
Description: Students use this course to complete an independent or team project. This project will be geared toward rounding out the student's portfolio and will demonstrate an appropriate level of professional challenge.

Faculty and Administration Roster: 2003-2004

REAL-TIME INTERACTIVE SIMULATION PROGRAMS

Computer Science		
Claude Comair	Le diplôme d'Ingenieur Archit.	L'Université du Saint Esprit (Lebanon)
	M.Eng. Environmental Engineering	Osaka University (Japan)
Bruce Dawson	Professional Experience	Certified equivalent training to a degree for immigration
Tyler C. Folsom	B.S. Mathematics	Villanova University
	M.A. Mathematics	University of Maryland
	M.S.E.E. Electrical Engineering	University of Washington
	Ph.D. Electrical Engineering	University of Washington
Prasanna Ghali	B.S. Electrical Engineering	Osmania University (India)
	M.S. Electrical Engineering	University of Oklahoma
Matt Grove	B.A. Mathematics	Reed College
Jason Hanson	B.S. Mathematics/B.S. Physics	University of Massachusetts
	M.S. Physics	University of Virginia
	M.A. Mathematics	Columbia University
	Ph.D. Mathematics	University of Hawaii
Xin Li*	B.S. Computer Science	Northwest University (China)
	M.S. Computer Science	Academic Sinica (China)
	Ph.D. Computer Science	University of Central Florida
Matthew Mead	B.S. Computer Science	Portland State University
	M.S. Computer Science	Portland State University
Nathan Ukrainetz	B.S. Electrical Engineering	University of Saskatchewan (Canada)
	B.S. Computer Science	University of Saskatchewan (Canada)
Hao Wu	B.S. Electrical Engineering	Tsinghua University (China)
	M.S. Electrical Engineering	University of Washington
Mathematics/Physics		
Eugen Ardeleanu	M.S. Mathematics	University of Bucharest (Romania)
	M.S. Computer Science	Polytechnic University (Romania)
	Ph.D. Mathematics	J. Kepler University (Austria)
Charles Duba	B.S. Physics	University of California, San Diego
	M.S. Physics	University of Washington
Michael Jahn*	B.S. Mathematics	Southern Methodist University
	B.S. Electrical Engineering	Southern Methodist University
	Ph.D. Mathematics	University of Wisconsin, Madison
Matt Klassen	B.S. Mathematics	University of Arizona
	Ph.D. Mathematics	University of Arizona
Game Software Design and Production		
Scott Berfield	B.F.A. Theatre	University of Illinois
	M.B.A.	Santa Clara University
Christopher Erhardt*	B.S. Human Res. & Org. Behavior	University of San Francisco
Jared Larsen	B.S. Computer Science	University of Minnesota
Michael Moore	B.A. English	St. Mary's University
	M.A. Communication Arts	Southern Illinois University
Jen Sward	B.S. Electrical & Computer Engineering	University of California, Davis
Mickey Wetzel	B.S. Physics	Cal State University, Sacramento
	M.S. Computer Science	Cal Poly Institute
General Education		
Wendy Blake	B.A. English	Towson State University
	M.A. English	University of Maine
Cedric Page*	B.A. Geography	Syracuse University
	M.A. Geography	Rutgers University
	Ph.D. Geography	Rutgers University
Stephen Schafer	B.A. Psychology	University of Denver
	M.A. English	University of Denver

3D COMPUTER ANIMATION PROGRAM

Jay Gale	B.A. Broadcast Communication	University of Colorado
Melvin Gonsalvez	Diploma in Art Merchandising	Vancouver Community College
	Diploma in Building Technology	British Columbia Institute of Technology
Billy Jarcho	B.F.A. Visual Design in Media Arts	Emerson College
Monte Michaelis	A.A.A. Computer Animation	The Art Institute of Seattle
David Satlin	B.A. Theatre/Film Production	Humboldt State University
	M.A. Theatre/Film Production	Humboldt State University
Lawrence Schwedler	B.A. Music	University of California, Los Angeles
	M.F.A. Music Performance and Electronic Music Composition	University of California, Los Angeles
Abbott Smith*	Certificate Radiologic Technology	U.S. Army Academy of Health
	A.A.A. Computer Animation	The Art Institute of Seattle
	B.F.A. Studio Art	Augusta College
	B.A. Biology/Theater	Wabash College
Royal Winchester	A.A.A. 3D Computer Animation	DigiPen Institute of Technology
	B.S. Physics	Purdue University

ADMINISTRATION

Claude Comair	President
Jason Chu	Chief Operating Officer
Raymond Yan	Vice President of Operations
Rick Page	Dean of Faculty
Meighan Shoesmith	Senior Vice President, Administration/Registrar
Michele Comair	Human Resources Director
Yuki Taber	Director of Administration
Asuka Tsumura	Office Manager
Gina Corpening	Admissions and Outreach Coordinator
Michael Henninger	Financial Aid
Gordon Dutrisac	Librarian/Student Services Director
Ryan Fulcher	IT Support
Garee Brackett	IT Support
George Strickland	Technical Support
Brian Rosell	Facilities and Security