



Brooklyn College of the City University of New York

Department of Computer and Information Science

2109 Ingersoll Hall Brooklyn College
2900 Bedford Ave., Brooklyn NY 11210
718-951-5657 fax 718-951-4842

SUMMER AND FALL 2009

TO: All CIS Students
FROM: Aaron Tenenbaum, Chairperson
RE: Summer and Fall 2009 Undergraduate Registration

It is highly recommended that majors see a Deputy Chair each semester to plan out their schedule for the next semester.

Look at the end of this letter for the requirements and prerequisite structure of the department's 3 majors! Two new majors have been added beginning in Fall 2008, in addition to the existing CS major! They are:

- **Major in Multimedia Computing (B.S.)**
- **Major in Information Systems (B.S. jointly with the Business program)**

1. Departmental policy is to enforce prerequisites and to grant waivers only under rare circumstances. If you feel a **prerequisite should be waived**, please see a registration advisor or one of the Deputy Chairs or the instructor of the course **before** you register. The prerequisite of CIS 5.2 that applies to several courses is readily waived if you know computer application tools such as Word, Excel, Access and PowerPoint. Also, if your courses from another school have not yet been evaluated and posted to your transcript, please make sure to come to the department office for advisement and possible waiver of prerequisites. If a course is closed and **you need an overtally**, please fill out an overtally request form in the Department office, Room 2109N.

Note that you must earn a C or higher in all CIS prerequisites to any CIS course. If you earn a C- or below in a prerequisite course, you should take the course over before going on to the next course. However, if you earn below a C in a Math prerequisite for a CIS course, you may still register for the next CIS course, although the Math department may require a minimum grade for registration in a subsequent Math course. (Note also that the C requirement applies only to a *prerequisite*. Thus, for example, you need not repeat CIS 23 if you earn less than a C since CIS 23 is not a prerequisite for another CIS course. Similarly, you need not repeat CIS 25 if you earn less than a C unless you want to take CIS 46.5, for which 25 is a prerequisite.)

Note that the Math department allows CIS students who received a D in Math 4.3 to register for Math 8.1, but will not allow a student who received below C- in Math 3.3 to register for Math 4.3.

If you are enrolled in a current CIS course, press the CTRL button and click on that course link below to determine what CIS course you should register for next. Also CTRL+click on the highest course you have taken from among CIS 1.5, 15, 22, 20.1, 11.

[CC 3.12 or CC 30.03](#)

[CIS 3.5](#)

[CIS 15](#)

[CIS 24](#)

[CIS 41](#)

[CIS 88.1](#)

[CIS 5.2](#)

[CIS 17](#)

[CIS 25](#)

[CIS 45](#)

[CIS 1.0](#)

[CIS 9.2](#)

[CIS 20.1](#)

[CIS 26](#)

[CIS 48](#)

[CIS 1.5](#)

[CIS 10.31](#)

[CIS 20.2](#)

[CIS 27.1](#)

[CIS 52](#)

[CIS 3](#)

[CIS 11](#)

[CIS 22](#)

[CIS 32](#)

[CIS 53](#)

[CIS 3.1](#)

[CIS 12W](#)

[CIS 23](#)

[CIS 38](#)

[CIS 60.1](#)

[CIS 3.2](#)

[CIS 13.2](#)

2. Students in CC 3.12 or 30.03, or in CIS 1.0 or 3 or 3.1 or 3.2 or 3.5 or 5.2 or 9.2 or 10.31 or 12W, but have not taken CIS 1.5, who **wish to major or minor in CS** should register for **CIS 1.5**, which teaches programming in C++. More advanced CIS courses teach and use the C++ programming language. If you have had a programming course in a language other than C++ and do not know C++, please see the Chairperson. If you are already majoring in CIS, see the information for the other CIS courses you have already taken.

Students who have taken CC 3.12 or 30.03, or CIS 1.0 or 1.5 or 3 or 3.1 or 3.2 or 5.2 or 9.2 or 10.31 or 12W, **who do not wish to major in CS** but:

- who want proficiency in current application tools should register for [CIS 5.2](#) .
- who want to learn about the Internet should register for [CIS 3](#).
- who want to learn how to create better Web pages should register for [CIS 3.1](#)
- who are interested in business applications of the Internet should register for [CIS 3.2](#) .
- who are interested in multimedia should register for [CIS 3.5](#).
- who are interested in how information systems operate in organizations should register for [CIS 9.2](#).
- who are interested in business applications of computing should register for [CIS 10.31](#).
- who are interested in the dangers and ethics of computing should register for [CIS 12W](#).
- who want to learn more about computer technology, but not necessarily programming, should register for [CIS 13.2](#) (note: both 1.5 and 5.2 are required as prerequisites for 13.2) or CIS 9.2.

3. **If you plan on majoring or minoring in CS, it is recommended that you take [CIS 15](#) immediately after CIS 1.5.** Students in CIS 1.5 can also register for either [CIS 11](#) (assuming you have taken Math 2.9 or have placed in Math 3.3), or [CIS 12W](#) (assuming you have taken English 2).

4. **CIS 4.1** is no longer offered. Students who have previously taken CIS 4.1 should take [CIS 11](#) and then [27.1](#). Such students should make an appointment with a Deputy Chair about how to complete their major.

5. **CIS 15** is required for the major. **CIS 15** teaches advanced programming in C++ and is the standard second course in CS at BC. It is being given in the first summer session and in the Fall. If you take CIS 15, you may want to take [CIS 3](#) at the same time, since you cannot take CIS 3 once you've taken CIS 15. You may also want to take [CIS 11](#) together with CIS 15 in order to make rapid progress in the major. Another course you can take together with CIS 15 is [CIS 12W](#).

6. Students in **CIS 15** should register for **CIS 22**. CIS 22 is scheduled in the first Summer Session and in the Fall. It is important to take CIS 22 as soon as possible after CIS 15 for two reasons: first, you want your knowledge of C++ to be as fresh and thorough as possible when you take CIS 22, and, second, most other CIS courses have CIS 22 as a prerequisite, so taking CIS 22 enables you to take a wide variety of other courses in the future. You may also wish to take [CIS 27.1](#) along with CIS 22 if you have taken CIS 11.

7. Students in CIS 11 should take [CIS 27.1](#). Students who have already passed CIS 11, 15 and 22, all with a C or above, should take [CIS 20.1](#), [CIS 27.1](#) and/or [CIS 23](#) or [38](#) (see item 18 below). If you've taken **CIS 20.1**, take **CIS 20.2** and/or **CIS 26**.

8. **CIS 11** is required for the major and introduces important mathematics frequently used in computer science. The prerequisite for **CIS 11** (Discrete Structures) includes Math 2.9 or assignment to Math 3.3 on the basis of

the Brooklyn College Mathematics Placement Test. It also requires either CIS 1.5 or 2.80. CIS 11 is scheduled in the first Summer Session and in the Fall.

9. **CIS 5.2**, Microcomputers in Business and Administration, teaches the use of word processing (Microsoft Word), spreadsheets (Excel), databases (Access), and presentation software (PowerPoint) on personal computers. **There is no prerequisite for CIS 5.2.** This elective course may be of interest to all CIS students. It is a prerequisite for CIS 13.2 and for CIS 45. It is given in both Summer Sessions and in the Fall.
10. **CIS 3** covers The Internet. In this course, you will learn how to access the Internet, how to create Web pages, and the principles of how the Internet works. This course has a prerequisite of CC 3.12 or Core 5.1, or CIS 1.0, or CIS 1.5, but is not open to students who have had CIS 15. It is being given in the Fall.
11. **CIS 3.1**, Web Production, teaches how to create Web pages and how to make them better, more useful and appealing. The prerequisite for CIS 3.1 is CC 3.12 or Core 5.1 or CIS 1.0 or CIS 1.5. The course is open to CIS majors or non-majors, but is not open to students who have had CIS 13.2 or 52.
12. **CIS 3.2** Electronic Commerce, is being given in conjunction with the Business Program of the Economics Department. It is a survey of practices in doing business online over the Web. The prerequisite is either CC 3.12 or Core 5.1 or CIS 1.0 or CIS 1.5. It is open to CIS majors and non-majors. It is being given in both summer sessions, and in the Fall.
13. Students in **CIS 22** should register for **CIS 20.1**. This course will cover how to develop application software. It is required for the major for all students who have not taken CIS 4.1. If you have taken CIS 4.1, consult a Deputy Chair. Courses that can be taken with CIS 20.1 if you've completed CIS 22 are [CIS 11](#), [CIS 23 or 38](#) (if you've also taken CIS 11 and Math 3.3), and [CIS 27.1](#) (if you've already taken CIS 11). Students who have taken CIS 20.1 should take **CIS 20.2** and then **CIS 26**. CIS 20.2 and 26 are both required for the major.
14. **CIS 24**, Programming Languages, is required of all majors who took CIS 4.1. A co-requisite or prerequisite is CIS 26. Some students have had trouble registering for CIS 24 even when they register for CIS 26 concurrently. If this happens to you, see a Deputy Chair or the Chairperson for permission. If you did not take CIS 4.1, CIS 24 is not required for you, but CIS 20.1 and 20.2 are. You may take CIS 24 as a [required elective](#).
15. The Brooklyn College writing intensive requirement is now fully integrated into the curriculum. **All students who entered or re-entered Brooklyn College in Fall 2001 or later must satisfy this requirement** by completing a writing-intensive course (indicated with a W after the number). In CIS, you should register for **CIS 12W**, Computers and Ethics. CIS 12W is now required for the CIS major, although students entering or re-entering the College before Fall 2005 are able to take a W course in another department instead. English 2 is a prerequisite for all W courses. Three sections of CIS 12W are being given in the Fall (day and evening). A section is also being given in the first summer session.
16. **CIS 60.1** or [CIS 88.1](#) is required of all CIS majors. They both require department permission for registration. CIS 60.1 requires completion of a major computer science project (involving approximately 15 hours/week of work), plus tutoring. Students may find their own project, within or outside the school. Many students use projects at work for their 60.1 project.

Students generally do not take 60.1 before their senior year, but students who present an appropriate project may be given permission before then. Students who are unable to find a project and are seniors will be assigned a project and must arrange their schedule so that they have two complete days a week available for project-related activities.

Students who wish to receive permission to register for CIS 60.1 should see Professor Augenstein, (Room 2122N, x5204, email: augenstein@sci.brooklyn.cuny.edu), or leave a message for him in the department

office (Room 2109N, x5657). Students who have already taken CIS 60.1 may take **CIS 60.2** to continue their project or do an additional project.

17. **CIS 88.1** is an honors course that is only open to superior CIS majors. It involves doing a research project under the supervision of a senior faculty member. Students need permission from the faculty member and from the Chair of the Department. Faculty members who have sponsored 88.1 projects in the past are Profs. Bar-Noy, Chopra, Dexter, Kopec, Langsam, Parsons, Sklar, Sokol, and Whitlock.
18. Majors can choose **CIS 23**, Analysis of Algorithms, or **CIS 38**, Theoretical Computer Science, in meeting CIS major requirements. The prerequisites for both CIS 23 and 38 are CIS 11, 22, and Math 3.3. CIS 23 and 38 are offered in the Fall. CIS 38 is also offered in the First Summer Session. Students who wish to do graduate study in computer science are urged to take both CIS 23 and 38 during their college career. If you take both courses, they are both credited toward the CIS major, one as satisfying the 23 or 38 requirement, and the second as a required elective.
19. Other required major courses offered are **CIS 27.1**, Computer Architecture, and **CIS 25**, Operating Systems. **CIS 27.1** requires CIS 11 as prerequisite. **CIS 25** requires CIS 22 and 27 or 27.1 as prerequisites. If you are now in CIS 27.1, take CIS 25. It is recommended that you have experience on two computing platforms (PC, UNIX, mainframe) before taking CIS 25. Both CIS 25 and CIS 27.1 are given in the Fall.
20. Two additional courses in CIS **numbered between 13 and 59.99** are required for the major. Advanced electives being offered in the Summer and Fall include (all these courses satisfy the requirement of two courses of advanced CIS electives):

CIS 13.2 Advanced Personal Computer Techniques for Business Applications (Fall online). Prerequisite: CIS 1.5 and 5.2. Students who are familiar with PC applications software but who have not taken [CIS 5.2](#) should see a counselor for waiver of the CIS 5.2 prerequisite. Note that you may not take [CIS 3](#) or [CIS 3.1](#) after 13.2, so you may want to take them together, or take one or both before CIS 13.2.

CIS 32.5 Robotics (Fall day). This is a new course and will include hands-on work with robots. Prerequisite: CIS 11 and 26. If you have not taken 26, apply to the Chair for a waiver.

CIS 45 Database Systems (Fall day). Prerequisite: CIS 5.2 and 22. Students who know Access but have not had CIS 5.2 should see a counselor for waiver of the CIS 5.2 prerequisite.

CIS 46 Workstation Programming (Fall day). Prerequisite: CIS 22. This is part of the new Minor in Parallel and Distributed Computing that is now available to all students. This kind of computing is becoming of increasing importance.

CIS 49.2 Computer Networks (Fall online). Prerequisite: CIS 22 and CIS 27 or 27.1.

CIS 52 Multimedia Computing (Fall evening). Prerequisite: CIS 5.2; CIS 13.2 or 22. Students who are familiar with PC applications should see a Deputy Chair about the possibility of waiving the prerequisite of CIS 5.2.

CIS 54.1 Game Programming (Fall day). Prerequisite: CIS 22.

[CIS 23 and CIS 38](#) are also available as one required course and one required elective if you take both of them.

21. A number of courses will be offered in the Fall jointly with other departments. Although most are not required for the major, majors may gain a lot of useful knowledge and skills from these courses.

[CIS 3.2](#) (Electronic Commerce, also BUS 31.5).

CIS 9.2 (Management Information Systems, also BUS 31.3) is a new course that surveys how computers are used in large organizations for organizing and retrieving information.

CIS 10 (Philosophy and Artificial Intelligence, also PHIL 29 and PSYCH 57.2).

CIS 10.31 (Operations Management, also BUS 31.4) is offered jointly with the Business Program. It teaches how to manage the operations of a company using computers. Students who want to go into commercial computing will find this course very useful.

CIS 10.33 (Macromolecular Structure and Bioinformatics, also BIO 33) is an introductory Biology class that introduces how computers are used in Biology. Bioinformatics, combining Biology and Computer Science, is a rapidly growing field that will have great opportunities for the future. No prior knowledge of Biology is required for this course, and only Core 5.1 or CIS 1.0 or CIS 1.5 is the computer prerequisite.

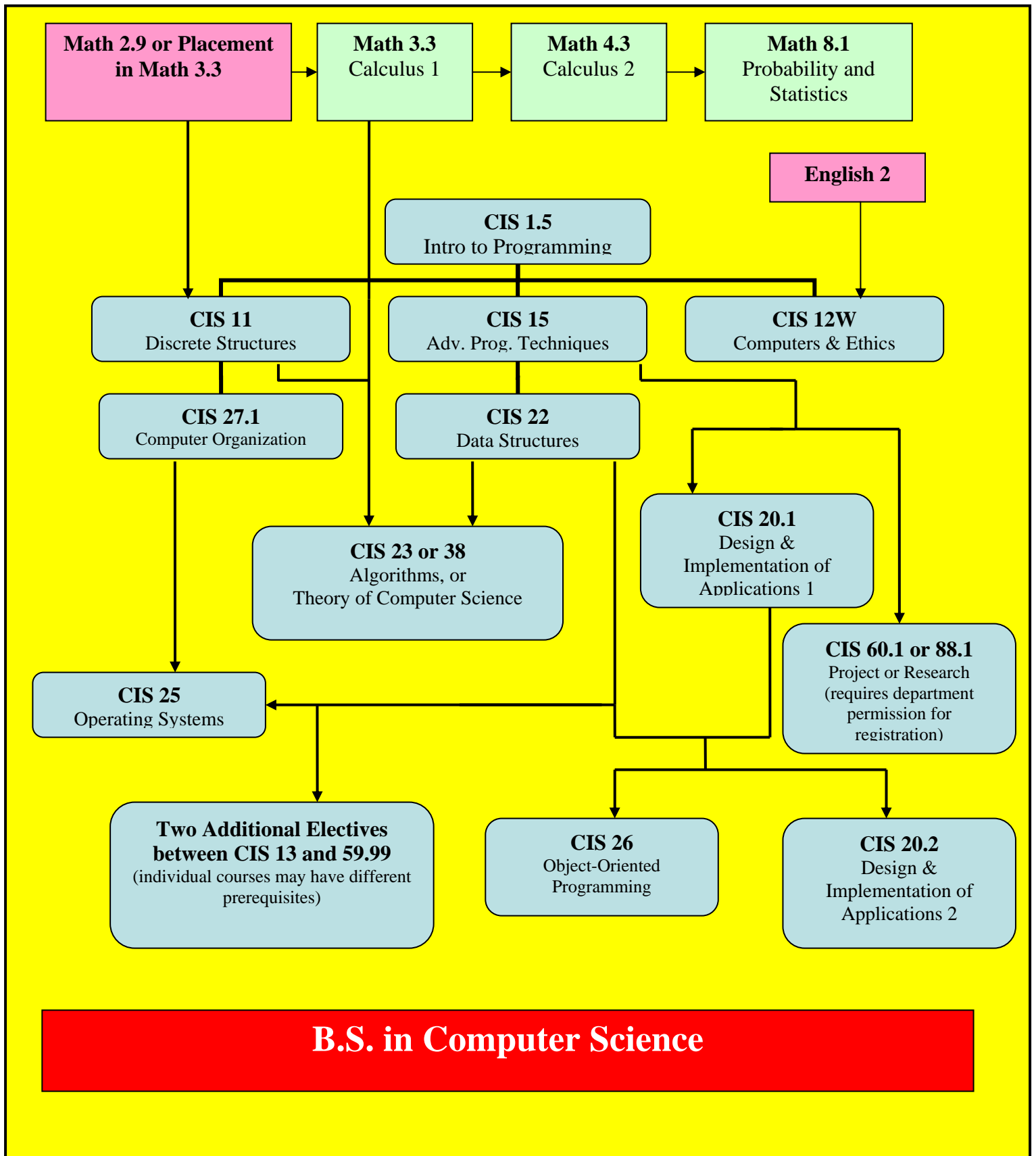
CIS 12W (Computers and Ethics, also PHIL 14.4W).

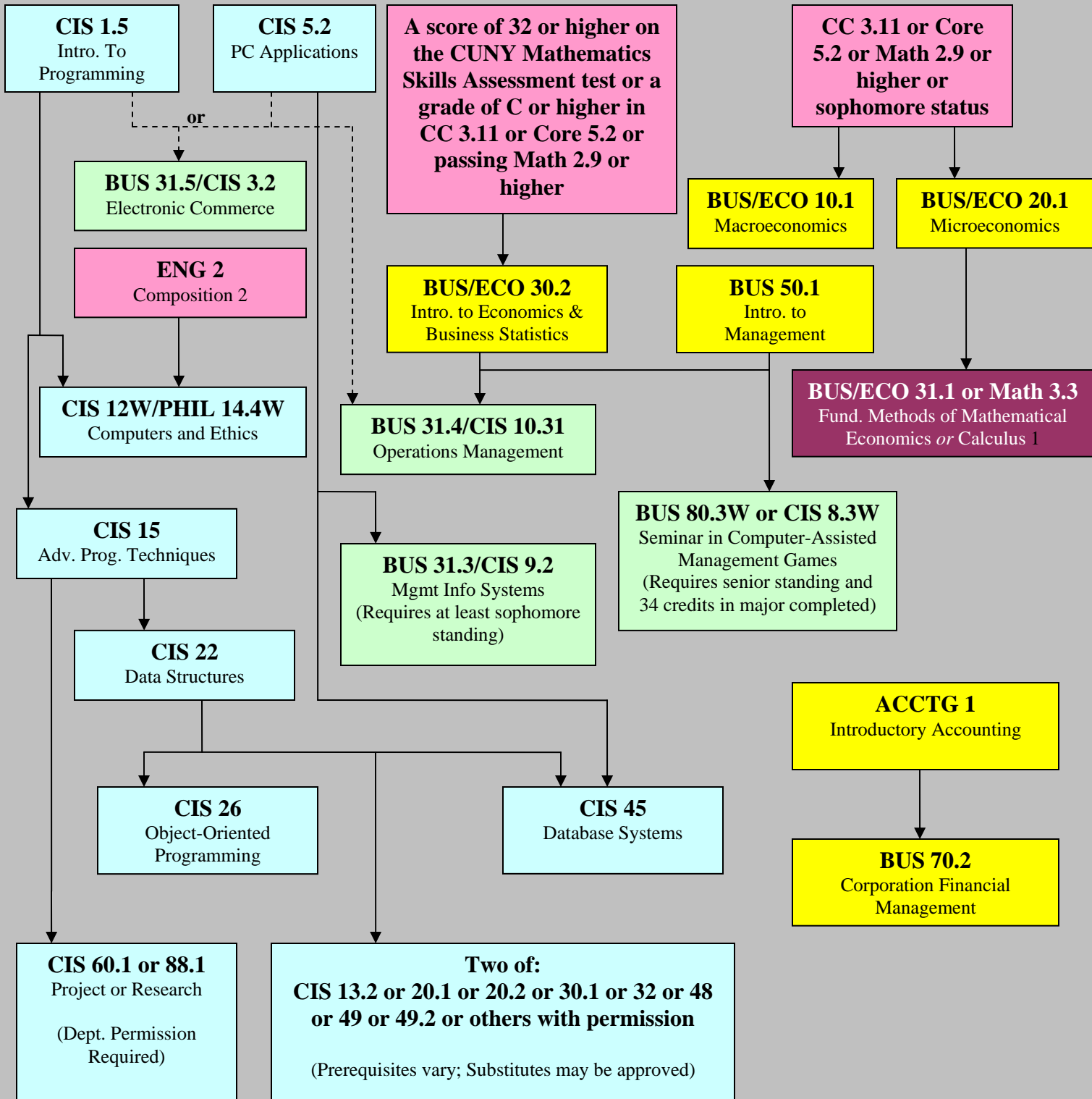
22. Computer language courses offered include **CIS 1.5/15/22**, which teach C++ (Fall day, evening and weekends; Summer), **CIS 2.55** (Perl, Fall day), and **CIS 20.1/26** (Java, Fall day and evening). The prerequisite for CIS 2.55 is CIS 22.
23. We have introduced a **Minor in Multimedia Computing**, for which computer science (and other) majors are eligible. The new minor requires CIS 1.5 or 2.80, 15, 22, 26, 41, 52, and two courses chosen from among 3, 3.1, 17, 36, 45.1, 50.1, 51.1, 54 and 54.1. You can have a major in computer science with a minor in multimedia computing if you satisfy the major requirements and take the above courses.
24. We have introduced a **Minor in Cognitive Science** together with the Departments of Philosophy and Psychology. The minor consists of CIS 1.5, Philosophy 5, Psychology 1.1, Psychology 57.1, and a choice of one course from each of the following groups: Group A: Philosophy 12.3, 26, 27, 28 or 42. Group B: CIS 32 or 10, Philosophy 29, Psychology 57.2. The minor can be taken together with the CIS major and deals with the issue of “What is cognition and how can it be created artificially?”
25. Advanced (senior year) students with good records can also consider taking a **graduate course** offered by the department, as an advanced elective, if they satisfy the prerequisite conditions. This requires the approval of both the department and the Academic Advisement Center. For information, contact Professor Danny Kopec (x5578, email: graddep@sci.brooklyn.cuny.edu).
26. CIS students may wish to take **Speech 23**, Interpersonal Communication for Business. This elective will help you if you choose a career in information systems or business.
27. Urge your non-major friends who have not taken CIS 1.0 or Core 5.1 to take **CC 3.12**, the core computing course. Also, both majors and non-majors can take **CC 30.03, Exploring Robotics**, or **CC 30.10, Paradoxes and the Limits of Knowledge**, to satisfy an upper-tier Core Curriculum requirement.

For **counseling** or **additional information** or **department permission** or **waiver of prerequisites**, see one of the Deputy Chairs, Prof. Langsam or Prof. Thurm before May 17 according to the following schedule. After May 17, contact 718-951-5657 or cis@sci.brooklyn.cuny.edu:

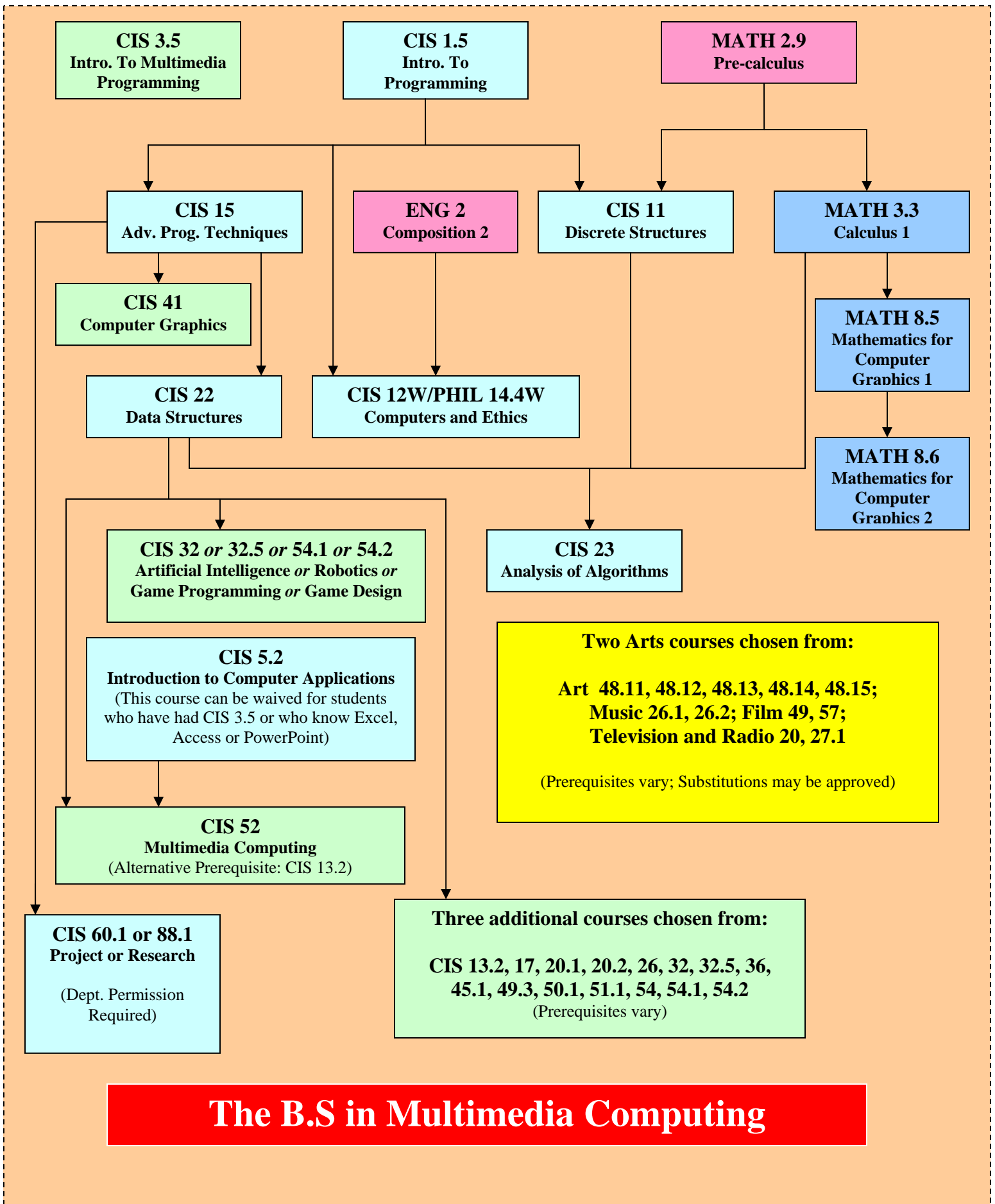
Day		Evening	
PROFESSOR YEDIDYAH LANGSAM – 718 951-4161		PROFESSOR JOSEPH THURM – 718 951-5657	
Email: langsam@sci.brooklyn.cuny.edu Room 525d NE (or 523d NE)		Email: jthurm@juno.com Room 2109N	
Monday	12:15AM – 2:00 PM	Monday	5PM-6PM
Thursday	12:15AM – 2:00 PM	Wednesday	5PM-6PM

The following pages diagram our three majors.





The B.S in Information Systems



The B.S in Multimedia Computing