Oakland Community College

Curriculum Review Committee

Reports Supporting the Review of Biology

Prepared by the Office of Assessment & Effectiveness
December 2008

OAKLAND
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College Curriculum
Review Committee

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WELCOME TO THE CURRICULUM REVIEW SELF-STUDY PROCESS

Discipline/Program Biology Coordinator(s) Richard V. Lamb

CRC Mentor David Mathews Review Date: March 20, 2009 For Fall 2008 and Winter 2009

Comment [rvl1]: March 20, 2009

Thank you for agreeing to coordinate the Curriculum Review in your area. As Discipline/Program Review Coordinator, it is your responsibility to make sure the steps detailed below are completed by the Review Date. Your packet includes instructions and forms for completing the Review. If needed, a CRC mentor is available to you. Your Dean will also be able to provide meaningful assistance in completing this important task.

In the Part I-Core Review, the College asks your discipline/program to analyze its curriculum from a variety of perspectives. These include course offerings and contents, enrollment/retention, transfer trends, and plans for the future. An additional section of activities is contained in Part II. The nature of these review activities will depend on whether you are a member of a Discipline or a Program.

Included in this document to help you work on your review are: 1) Data Collection forms to distribute to your Discipline/Program colleagues and 2) Data Analysis forms with summary sections. Allow two to three months for this work. Please send all completed forms to the Chair of CRC 3 weeks prior to your scheduled review.

Once again, thank you for agreeing to work on this very important process with your colleagues. Together we will constantly strive to ensure the excellence of instruction at OCC.

College Curriculum Review Membership
2008-2009

Imagene Bailey (OR)
Thomas Boozer (AH)
Nadia Boulos (HL)
Aletia Droba (RO)
Cheryl Neely (RO)
Diane Hill (OR)
Tony Ingram (OR)
Darlene Levinson (OR)
David Mathews (RO)
Gayle Mazzocco (HL)
Janet Peart (AH)
Letyna Roberts (ex-officio)
Beverly Stanbrough (RO/SF)
Gail Mays-Chair (AH)
Mary Moon (AH)

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CURRICULUM REVIEW SELF-STUDY PROCESS
FOR
DISCIPLINE/PROGRAM COORDINATORS

Coordinator: The bold type below indicates forms that are attached and also available on the P drive. Check off steps as completed.

☐x **Step 1**—Request that the Office of Assessment & Effectiveness (contact information available on InfoMart) to send you the Dashboard data for your Discipline/Program.

☐ **Step 2**—If you are an occupational program coordinator, distribute the **PROE surveys** to faculty, students, and advisory committees. Return completed surveys to the OCC's Office of State and Federal Programs 6 weeks before your scheduled review.

☐x **Step 3**—Send the **Data Collection forms** to all the full-time faculty and/or adjunct members of your Discipline/Program, as specified on each form.

☐ x **Step 4**—Collect syllabi from all adjuncts and full-time faculty for every course they are teaching, and complete the **Data Collection forms** for each course.

☐x **Step 5**—After collecting the above data, complete the **Data Analysis forms** to help you organize and analyze the information you've gathered.

☐ x **Step 6**— Complete the Curriculum Review Report by compiling the **Data Analysis** forms.

☐ **Step 7**—Forward a DRAFT copy of your compiled Discipline/Program Curriculum Review Report along with a **Faculty Sign-off form** to all faculty participating in the review at least 6 weeks prior to your review appointment. NOTE: As part of the official CRC Review Document, please include the returned Faculty Sign-Off forms.

☐ **Step 8**—Send a completed hard copy of all completed forms (including the **Data Collection, Data Analysis forms**) to the Chairperson of the Curriculum Review Committee at least 3 weeks prior to your review, along with enough copies of your completed report for each committee member. The Chairperson will distribute them.

☐ **Step 9**—Present the Discipline/Program Self-Study to the Curriculum Review Committee on the appointed date.

The Curriculum Review Committee will then provide your Discipline/Program with recommendations and suggestions and share the results of your review with the College Academic Senate, Vice-Chancellor of Academic and Student Services, and the Office of Assessment & Effectiveness.

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PART I-CORE REVIEW

Coordinator: Data Collection and Data Analysis forms for the following review areas are attached. Please also attach a copy of your program requirements from the catalog and all course descriptions.

A. CATALOG COURSE DESCRIPTIONS

- Please reproduce copies of all your Discipline/Program catalog course descriptions, and distribute them to the full-time members of the Discipline/Program with the Data Collection form asking the faculty to comment on whether the catalog course descriptions are accurate, clear, and current.
- Analyze the responses in order to determine where there is a need for revision.

B. SYLLABUS REVIEW

- Collect syllabi from all full-time and adjunct faculty for every section of each courses listed in the catalog under your Discipline/Program.
- Analyze where there are inconsistencies or omissions in the syllabi.

C. ENROLLMENT TRENDS AND STUDENT RETENTION

- Collect the Dashboard enrollment and retention data for the current and last academic year (available from the Office of Assessment & Effectiveness).
- Analyze areas of strength and weakness. Discuss, where applicable, student recruitment and student retention strategies that your Discipline/Program participates in currently or intends to implement in the future.

D. DISCLIPLINE/PROGRAM NEEDS AND RESOURCES

- Collect information on the Discipline/Program's current and anticipated needs and resources by distributing the Data Collection form to all full and adjunct faculty.
- Discuss what resources and staff development activities your Discipline/Program needs and also indicate necessary curriculum changes/revisions where appropriate.

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DATA ANALYSIS

CORE REVIEW

A. CATALOG COURSE DESCRIPTION

Coordinator: Complete this form after reviewing the Catalog Course Data Collection forms from members of your Discipline/Program on all of the courses listed in the Catalog. Please also attach a photocopy of all program requirements and course descriptions in the catalogue.

List every course that is listed in the catalog. Check where revision is indicated or no revisions seem necessary. Please, add lines where needed.

	Revision needed	No Revision necessary
Course Number _1320___	__1_	____
Course Number _1500___	____	_X__
Course Number _1511___	____	_X__
Course Number _1530___	____	_X__
Course Number _1560___	____	_X__
Course Number _1570___	____	_X__
Course Number _1580___	____	_X__
Course Number _1600___	____	_X__
Course Number _2540___	____	_X__
Course Number _2560___	____	_X__
Course Number _2601-9	____	_X__
Course Number _2630___	__2_	____
Course Number _2640___	____	_X__
Course Number _2660___	____	_X__
Course Number _2710___	____	_X__
Course Number _2830__	____	_X__
Course Number _2840___	____	_X__

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CATALOG COURSE DESCRIPTION REVIEW SUMMARY:

The Biology Discipline has worked diligently during the past two years to update the course descriptions, including adopting new General Education attributes to conform to the most recently adopted General Education Objectives adopted by the college and updating which programs require the vocationally oriented classes. Consequently, all courses but one were judged by the responding members of the faculty to have accurate, clear, and current catalog descriptions.

The exceptions are BIO 1320, which is not taught by members of the Biology Discipline, but by a member of the Landscape Technology Discipline, and BIO 2630.

1) The description of BIO 1320, while clear, is neither accurate nor current. Following is the proposed new course description:

> The student will develop and demonstrate knowledge of the basic principles of vascular plant morphology, physiology and anatomy as they relate to landscape horticulture by (a) identifying and describing plant structures; (b) describing fundamental plant functions; (c) identifying and describing plant tissue systems; and (d) describing the role of anatomy in the process of wound healing in woody plant material.

The above proposed revised course description should be brought to the next Biology Discipline meeting for action.

2) The majority of instructors for BIO 2630 who responded expressed a desire for the number of credit hours to increase from its current 4 to either 5 or 6. None had any issues with the text of the description.

Finally, the online catalog, which lists "all courses currently active at Oakland Community College," contains courses that are not listed in the print catalog. These courses seem to belong in three categories—courses not taught recently, 1000-level courses that have been replaced by 2000-level courses, and duplicate courses.

Courses not taught recently

5 years to be removed

- **BIO 1010** **Credits:** 2 **Title:** Wildflowers of North America — Not in Catalogue — put up 1500/1530
- **BIO 2500** **Credits:** 4 **Title:** Ecology and Field Biology — In catalogue
- **BIO 2510** **Credits:** 4 **Title:** Invertebrate Zoology — In catalogue — " " 2540 Zoology
- **BIO 2550** **Credits:** 4 **Title:** General Botany — " " 1530
- **BIO 2810** **Credits:** 4 **Title:** Parasitology — " " 2540

Replaced courses

- **BIO 1540** **Credits:** 4 **Title:** General Zoology (Replaced by BIO 2540) — yes 2630
- **BIO 1630** **Credits:** 4 **Title:** Human Anatomy and Physiology I (Replaced by BIO 2540) — yes
- **BIO 1640** **Credits:** 4 **Title:** Human Anatomy and Physiology II (Replaced by BIO 2540) — 2640

?

Duplicate courses

not in catalogue

- **BIO 2250** **Credits:** 3 **Title:** Pathophysiology (Duplicate of BIO 2660)

The discrepancies between the online catalog and the print catalog might be confusing for students. yes

While all of the above problems should be addressed, they are relatively minor and do not reflect negatively on the educational value of the Biology Discipline's courses.

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DATA ANALYSIS

CORE REVIEW

B. SYLLABUS REVIEW, *(CONTINUED)*

Coordinator: After reviewing the Data Analysis forms on all the courses in the Discipline/Program, please summarize your analysis of whether or not there are course syllabi in your Discipline/Program that need revision due to inconsistencies or omissions, or other issues.

SYLLABUS REVIEW SUMMARY:

FT & PT?

This review is based upon 25 syllabi, 24 from Winter 2009 and one from Fall 2008. Of these, only ten included all four items required by Federal Law and the Faculty Master Agreement (FMA). Eleven, both from full-time and adjunct instructors, were missing course goals. One from an adjunct lacked an ADA notification. Another failed to include the tentative schedule of assignments and tests, although that could have been an oversight in appending files, as the same instructor sent a schedule for a class as a separate file. All included grading standards and practices.

Among the items recommended by the Campus-wide Academic Senate, nearly all syllabi included most of the items. The notable exceptions are the General Education Attributes for the courses that satisfy the General Education requirements, safety instructions, and a disclaimer allowing for reasonable revisions. The most glaring would be the lack of the reasonable revisions disclaimer, which was missing from 13 of the 25 syllabi submitted. Next would be the General Education Attributes, which are missing from six of the thirteen syllabi submitted for classes that satisfy the General Education requirements. While many syllabi lack safety instructions, most of these are laboratory classes in which the laboratory safety rules are passed out in the laboratory meetings and which are separate from the syllabi, so this is not a glaring omission; the students do see the rules. are dependent on syllabi

One item that appeared in several syllabi was a FERPA privacy statement, which informed the students of the college's policy about discussion of grades and scores. I found this to be a valuable item that might be listed among "optional items" in future syllabus reviews.

now required passed by Senate

For those courses for which multiple faculty members submitted syllabi, there is remarkable similarity in course structure and content. Consistency among instructors and campuses in these criteria therefore appears not to be an issue.

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DATA ANALYSIS

CORE REVIEW

C. ENROLLMENT TRENDS AND STUDENT RETENTION

Coordinator: The Dashboard report on your Discipline/Program will collect the necessary data in regard to Enrollment Trends and Student Retention. Use this form to review that data in the following areas. Please also attach Dashboard Data.

Enrollment (Use the Dashboard data on Average Section Size, Sections Filled to Capacity, Percent of Completed Sections, Percent Change in Headcount, and Percent Change in Credit Hours to discuss this area.)

The Biology Discipline has consistently performed well above the college-wide average in filling sections to capacity, filling 93.7% of sections during the 2007-2008 academic year, while the college-wide average is 85.6%. This performance exceeded the Dashboard target, achieving a score of 104%. There has been a slight trend of declining percentages of sections filling during the past three years, as 95.0% of all sections filled during the 2005-2006 academic year. At least in part, this decline can be explained by several new courses being introduced during this time span—BIO 1580, BIO 2560, BIO 2830, and BIO 2840—that have not yet achieved full enrollment and some sections of which were "designated full" sections so that they could go ahead in the face of low enrollment while they were being introduced. Therefore, the slight decline in full sections should not be a source of concern at the present time. Should the decline continue once the new courses become established, then it might become a source of concern.

The Biology Discipline has also consistently performed above the college-wide average in completing sections. During the same period when the ~~when the~~ number of full sections declined slightly, the percentage of cancelled sections declined markedly, dropping from 8.7% during the 2005-2006 academic year to 4.7% during the 2007-2008 academic year. This was less than half the college-wide average of 9.7% during the 2007-2008 academic year and met 95% of the Dashboard target.

The percentage change in credit hours shows that the Biology Discipline has achieved spectacular growth during the past decade. During the past five years, the number of credit hours has increased 29.7% while the college-wide increase has been 5.8%. During the past ten years, the number of credit hours has increased 73.2% while the college-wide increase has been 17.4%. Much of this increase has been due to students taking Biology courses so that they can enter Nursing and Allied Health programs, as health-related careers have enjoyed steady growth while employment in other sectors of the local economy have declined or remained stagnant during the past decade.

yes – does this meet student needs ↑ or ↓ or stay the same

Minority Students (Use the Dashboard data on Minority Students to discuss this area.)

The number of minority students enrolled in Biology courses has consistently exceeded that for the college as a whole, consisting of 30.6% of the total enrollment, exceeding both the college-wide average of 28.7% and the Dashboard target, meeting more 149% of the target. Furthermore, the minority enrollment has been steadily increasing during the post three years, rising from 29.6% during the 2005-2006 academic year.

Student and Course Success (Use the Dashboard data on Percent of Withdrawals, Percent of Incompletes, and Student Course Completion Rate to discuss this area.)

The Dashboard statistics have flagged student success as the one problem area in the discipline. The percentage of withdrawals has been steadily rising from 17.3% in 2005-2006 and 15.5% before that in 2004-2005 to 19.3% during 2007-2008, well above both the college-wide average of 18.4% and the Dashboard trouble score of 15%. Withdrawals have been the major contributor to the student course completion rate steadily falling from 68.7% during 2004-2005 to 66.5% during 2007-2008, as incompletes have held steady at 0.3% during this entire time, well below the college-wide rate of 1.5%.

20% W
Why?

Various factors could be contributing to the high withdrawal rate, including economic stress (the college-wide withdrawal rate is also above the Dashboard target of 15%), more students entering the college in general and the discipline in particular with less academic preparation. The solution to this is not to accept the situation, but to offer more support and guidance to the students. On the support side, several faculty have suggested making models available to students in a library or study center, as well as working more closely with the ASC and ACCESS offices for study group leaders and tutors. As part of guidance, the Biology Discipline has instituted a placement test for BIO 1570 and BIO 2630; students have to pass this test by the second attempt or take BIO 1511 before enrolling in either of these courses. More sections of BIO 1511 are likely to be offered. Another possibility is to require students to pass a reading or math test or course before enrolling in biology courses.

too early

the prereqs needed

* what is it as student prepare for fall 09

ENROLLMENT TRENDS AND STUDENT RETENTION REVIEW SUMMARY:

Enrollment trends have been very positive for the discipline, while retention trends are an issue. In the face of rising student demand, the challenge for the Biology Discipline lies in increasing support to students and properly guiding them so that they can maximize success.

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DATA ANALYSIS

CORE REVIEW

D. DISCIPLINE/PROGRAM NEEDS AND RESOURCES

Coordinator: Please summarize the needs, resources, and curriculum actions indicated on the Data Collection forms.

What resources or services does your Discipline/Program need?

Four faculty members responded with the needs of BIO 2630 and BIO 2640. Two of them believed that models and slides should be made available for the students to examine outside of class hours in the ASC, library, or study center. This is the practice at other institutions. Henry Ford Community College has models in a room of the library and Lansing Community College has models, slides, and a microscope available in a study center. One of the above also thought a dedicated testing center would be helpful.

A third faculty member noted that many of the labs had outdated lab space, storage, and furniture design. The labs in which dissections take place need adequate ventilation that brought in fresh air. Finally, more new models need to be purchased for the anatomy labs. The proposed solutions include making capital funds available for building and classroom renovations, having academic requests compete only against each other, not against capital improvements or non-academic requests, and increasing the maximum purchase price for non-capital items from $1000, where it has remained for at least 15 years.

What curriculum revisions or development does your Discipline/Program see as beneficial to instruction?

Three faculty members also responded with the needs for BIO 2630 and 2640. Two expressed a desire for a common syllabus and a common, well-organized and thought-out list of objectives and topics for both classes. These could be devised by the full-time faculty teaching the anatomy and physiology classes and distributed to all the adjuncts. This would improve consistency across the college for a two-semester course in which knowledge from the first semester is critical for success in the second semester.

One of the above believed that the nursing and allied health curricula should concentrate on subjects more directly associated with the fields—more biology and less math for the nursing students, for example.

The third faculty member expressed a desire for science developmental courses and for more prerequisites for advanced courses.

DISCIPLINE/PROGRAM NEEDS AND RESOURCES REVIEW SUMMARY:

BIO 2630 and 2640 are the most demanded and transferrable courses in the Biology Discipline. They need more support for renovating labs, obtaining up-to-date models, and availability of models outside of class. The faculty members teaching these classes also see a need for more rigor and consistency in the curriculum for these courses, as well as support and guidance for the students.

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PART II-DISCIPLINE REVIEW

Coordinator: ***Data Collection and Data Analysis forms for the following review areas are attached.***

E. INTERDISCIPLINARY INTERACTIONS

- Collect information from Disciplines/Programs that are using your courses as part of their required or recommended coursework.
- Analyze whether or not the use of your courses by Disciplines/ Programs is effective.

F. COMPARABLE COURSES AND TRANSFERABILITY

- Contact Counseling transfer experts to get information about the transfer of courses in your Discipline and about pertinent articulation agreements.
- Analyze the comparability and transfer of the courses in your Discipline.

G. GENERAL EDUCATION/OUTCOMES ASSESSMENT

- Collect information on how the General Education Attributes are integrated into the instruction of the courses in your Discipline by distributing the Data Collection form to all full and adjunct faculty teaching courses with General Education Attributes indicated in the catalog.
- Analyze the coverage of General Education Attributes in the courses in your Discipline and discuss any findings from SAGE that pertain to instruction in your courses.

DISCIPLINE REVIEW

E. INTERDISCIPLINARY INTERACTIONS

Coordinator: Please use the data from the Interdisciplinary Interactions Data Collection forms to answer the following questions:

4. Describe the use of your courses by other disciplines/programs. Discuss the effectiveness of support and prerequisite courses your discipline offers in their areas.

Twenty-seven degree and certificate programs require biology courses as prerequisite and support courses. Of these, nineteen are in health care and require one or more of BIO 1570, BIO 1600, BIO 2630, BIO 2640, BIO 2660, and BIO 2710. These courses are absolutely essential to prepare students for coursework in fields such as nursing, medical imaging, physical therapy, emergency medical treatment, and even health care administration. Many of the same courses required for health care programs are also required for criminal justice and exercise science. BIO 1320, BIO 1500, and BIO 1530 are also used for landscape horticulture. BIO 1500 is also one of the support courses for the global studies program. Finally, courses such as BIO 1500, BIO 1511, and BIO 1530 are also used for the Liberal Arts and Applied Sciences degrees.

7. changed 2008

5. Describe interdisciplinary initiatives by your discipline/program (e.g. interdisciplinary courses, learning communities).

There is a molecular biotechnology program that has been started by a member of the discipline, which requires very intensive preparation in biology. This class will prepare students to work in the growing biotechnology field.

DATA ANALYSIS

DISCIPLINE REVIEW

F. COMPARABLE COURSES AND TRANSFERABILITY

Coordinator: Please use the data from the Comparable Courses/Programs and Transfer Data Collection form to answer the following questions:

1. Discuss whether or not the courses in your discipline are comparable to those offered at other institutions, and if they are not comparable, discuss how they serve our students.

   All of the courses in the Biology Discipline are comparable to courses offered at other institutions, even the biotechnology courses, which are comparable to courses offered at Lansing Community College.

2. Describe the extent to which your course offerings will transfer to other institutions.

   Nearly all the courses transfer to other institutions in Michigan. The most transferrable are BIO 2630, BIO 2640, BIO 2710, and BIO 1530, which transfer as specific comparable courses to nearly all institutions that are part of MACRAO.

COMPARABLE COURSES AND TRANSFERABILITY REVIEW SUMMARY:

For a complete table of transferability, see the accompanying Excel chart.

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DATA ANALYSIS

DISCIPLINE REVIEW

G. GENERAL EDUCATION/OUTCOMES ASSESSMENT

Coordinator: Complete this form after reviewing the General Education Data Collection forms filled in by the members of your Discipline on all the courses in the catalog which have GE Attributes indicated in the Catalog.

Course Number	*% of Faculty Teaching*	*% of Faculty Assessing GE Attributes*	*% of Faculty information to improve instruction*
1500	0	0	0
1511	17%	17%	17%
1530	0	0	0
1560 (2+7)	0	0	0
? 1570			

GENERAL EDUCATION/OUTCOMES ASSESSMENT REVIEW SUMMARY:

Coordinator: Comment on the above data as well as on any SAGE findings that apply to the instruction in your Discipline.

Susie SAGE outcome? V w data

College Curriculum
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Faculty Sign-Off Form*

For Curriculum Review of Discipline:

I approve the Curriculum Review Report as written by the Faculty Program Review Coordinator.

Yes _____ No _____

Comments: (Attach additional sheets if necessary)

Name (printed) _____

Signature _____

Date _____

* This form is to be copied by and distributed to all faculty within the Discipline to ensure awareness and participation.

	Central Mich.	C.Creative St	Concordia AA	Davenport	Delta Coll,	Eastern Mich.	Ferris St.	Finlandia	G.V.S.U.	Henry Ford	Jackson CC	Kalamazoo V.	Kellogg CC	Lawrence Tec	Macomb CC	Michigan St.	Michigan Tech	Monroe CCC
1010	2					1			4						4		2	
1020						1			4						2	4		
1320	2	1			2				4			4			2	1	2	
1500	2			3	1	1	1		1			1	1	3	1	1	2	1
1511	2		1	3	2	1	1		1	2			1		1	1		
1530	2			1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1540	2			3			1		1		1	1	1		2		1	
1550									4			1	1		2	4		
1560	2					1			1							4		1
1570	2			1	1		1		4	1		1			2	1		
1580				3														1
1600	1		1	1	1	4	2		4	2	5				2	4	2	1
2250						1			4						2			
2500	2					1	1		1			1	1		2			
2510	2					1	1		1							1	2	1
2540	1			3	2	1	2		4									
2550	1					1	2		1									
2560	1			1		1	2		1							4	1	
2601-9	2			3	1	4	1											
2630	1	1	1	1	1	1	1	1	1	1		1	1	3	1	1	1	1
2640	1	1	1	1	1	1	1	1	1	1		1	1		1	1	1	1
2660				3		1	1	5	4									
2710	1			1	1	1	1	1	1	1	1	1	1		1	1	1	1
2810	2								1							2		
2830				3														
2840				3														

Mott	North.Mich.	N.W. Mich.	Northwood	Oakland U.	Saginaw V.S.U	Schoolcraft	St. Clair CC	Siena Hgts.	U. Detroit	UM-Dearborn	UM-Flint	Washtenaw	Wayne CCC	Wayne St.	Westshore CC	West. Mich. U.
	4	3								4						4
	4			2	4						2		3			4
	2	1		2	3	2				4	2					4
1	3	1	1	2	1	2	1			1	1		1	1		1
	3	1	3	2	3	2	2	1		1	3		1	1		1
	1	1		2	1	1	1		1		1		1	1		1
	1	3		1		1				3	2	1	1	2		4
	1					1								2		1
				1	3					4				1		1
1	2	1		2	4	2	1		1		2		2	2		4
				2						4						1
1	3	1			1	1	2				2	1	2	2		4
1	4						1			4	1	1		2		4
					4					4	2			2		1
	1				4					3						1
1				1	1		1							2		4
					1									2		1
	1			1	4							1		1		1
	2			2	4						2					4
1	1	2		1	3	1	1	1	1	1	1	1	1	2	1	1
1	1	2		1	1	1	1	1	1	1	1			2		1
					4						1			1		4
1	1	1		2	1		1	1	1	3	1	1	1	1	1	
1					4					3				2		
				2												4
				2												4