Innovative Programmes - Engineering New Degrees

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Historical Context

- Structure of undergraduate degrees in UCL Civil Engineering had undergone only incremental change over 30 years
- Applicants' qualifications were just "off the pace", with UCL often seen as an insurance if applicants failed to get a place at Imperial College or Oxbridge
- School heads told us that many good students prefer degrees with a broad curriculum and avoid the straight jacket suggested by a vocational degree
- Industry emphasized the need for free-thinking and adaptable graduates with well-developed problem-solving skills

Context

- Young Civil Engineering researchers offered a student view that traditional engineering degrees are not exciting and do not provide appropriate education
- Students seen to lose motivation
- Too much teaching, with little time to think and apply knowledge
- Staff frustrated by perceived imbalance of workload
- Staff frustrated by conflict in timetable between project work and lecture-based teaching

Here we explain what has been done to address some of these issues ….

Aims of the new degree programmes

- To attract the brightest students into an engineering education
- To produce graduates capable of clear thinking, good communication skills and managing large-scale engineering projects, comfortable with complex inter-disciplinary issues, not afraid to innovate, and equipped to take on challenges beyond the vocational boundaries traditionally associated with engineering degrees
- To offer degree programmes radically different in structure and content from those of our competitors

The changes ….

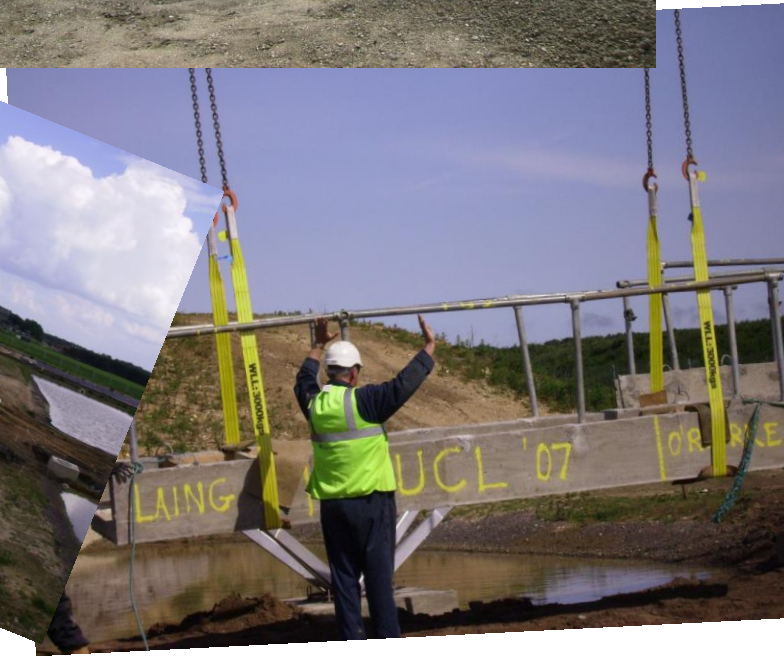
- Simplified the choice of undergraduate degrees offered
- Admissions criteria raised
- Interview procedures modernised and streamlined

- Academic year re-shaped around major projects
- New roles found for research-focused academic staff

- Syllabus balanced between analytical methods and the context in which they can be applied
- Emphasis on the “big picture” earlier in degree programmes

- Teaching programme restructured into four cross-cutting “clusters”
- Assessment through a single 4-unit course

- Constructionarium introduced to the curriculum



Constructionarium in action

Old degrees ……. 12 of them

- B.Eng. Civil Engineering
- B.Eng. Civil Engineering (**4 year STEPS programme**)
- B.Eng. Civil **and** Environmental Engineering
- B.Eng. Structural Engineering
- B.Eng. Geoinformatics
- B.Eng. Geospatial and Environmental Information Management
- M.Eng. Civil Engineering
- M.Eng. Civil Engineering (with a year abroad)
- M.Eng. Civil **with** Environmental Engineering
- M.Eng. Structural Engineering
- M.Eng. Geoinformatics
- M.Eng. Geospatial and Environmental Information Management

New degrees …….

- B.Eng. Civil Engineering
- B.Eng. Environmental Engineering
- B.Eng. Geoinformatics
- M.Eng. Civil Engineering
- M.Eng. Civil Engineering (International Programme)
- M.Eng. Environmental Engineering
- M.Eng. Environmental Engineering (International Programme)
- M.Eng. Geoinformatics

Teaching in 1st and 2nd years

- Common 1st year teaching across all programmes
  - broadening student curriculum
  - efficiency of teaching effort
- Common 2nd year teaching in Autumn Term
- Presentations by industry in November to inform students of the career choices available to them, with a final choice of degree to be made by end of the Autumn Term in 2nd year
- Specialist teaching in 2nd year Spring Term
- Specialist diets for 3rd and 4th years, with courses generally offered to more than one programme (including MSc programmes)

An Uncommon Timetable – Quarters & Scenarios

- Teaching year (Autumn and Spring terms) is divided into four “Quarters” each lasting 5 weeks
- Quarters have four weeks of teaching and a major one-week group project known as a “Scenario”
- Teaching in the four weeks is based around lectures, seminars, laboratory classes, and visits
- There is no formal teaching during Scenario weeks, but staff are available for consultation to guide student groups towards their goals

From silos to frameworks ….

- Syllabus for 1st and 2nd years of old degrees
  (taught in eight half-unit courses):
  Structures, Soils, Fluids, Materials, Design, Mathematics, Geology, Measurement, Society

- Syllabus for 1st and 2nd years of new degrees re-mapped to clusters
  (administered as a single 4-unit course):
  Context, **Change**, **Mechanisms**, **Tools**

- Achieved by asking all staff to list core **"Learning Outcomes"** for their subject and to mark each as Context, Change, Mechanisms or Tools

- Learning Outcomes timetabled to mesh with the requirements of the multi-disciplinary Scenarios

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YEAR 1 **2007-2008 TIMETABLE** **TERM 1**

Week no.		0	1	2	3	4	5	6	7	8	9	10	11
Week start		**24-Sep**	**01-Oct**	**08-Oct**	**15-Oct**	**22-Oct**	**29-Oct**	**05-Nov**	**12-Nov**	**19-Nov**	**26-Nov**	**03-Dec**	**10-Dec**
Week end		**28-Sep**	**05-Oct**	**12-Oct**	**19-Oct**	**26-Oct**	**02-Nov**	**09-Nov**	**16-Nov**	**23-Nov**	**30-Nov**	**07-Dec**	**14-Dec**
		Induction Week	QUARTER 1					Reading Week	QUARTER 2				
Monday	09:00-10:00	See separate induction week schedule	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	Scenario 1 (G.08)		Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	
	10:00-11:00		Structures (DLT)	Structures (DLT)	Structures (DLT)	Structures (DLT)			Structures (DLT)	Structures (DLT)	Structures (DLT)	Structures (DLT)	Scenario 2 (G.08)
	11:00-12:00		Fluids (DLT)	Fluids (DLT)	Fluids (DLT)	Fluids (DLT)			Fluids (DLT)	Fluids (DLT)	Fluids (DLT)	Fluids (DLT)	
	12:00-13:00		P/Tutorial 1	P/Tutorial 1	P/Tutorial 1	P/Tutorial 1			P/Tutorial 1	P/Tutorial 1	P/Tutorial 1	P/Tutorial 1	
	13:00-14:00										See Lab Timetable	See Lab Timetable	
	14:00-15:00		Context (26 Bedford Way--LG04)	Context (26 Bedford Way--LG04)	Context (26 Bedford Way--LG04)	Context (26 Bedford Way--LG04)			Scenario 1 Feedback (G.08)	Scenario 2 Introductory Lecture (G.08)			
	15:00-16:00												
	16:00-17:00												
Tuesday	09:00-10:00	See separate induction week schedule	Materials (G.08)	Materials (G.08)	Materials (G.08)	Materials (Roberts G.08 Davies LT)	Scenario 1 (G.08)		See Lab Timetable	See Lab Timetable	See Lab Timetable	See Lab Timetable	
	10:00-11:00												Scenario (G.08)
	11:00-12:00				Materials (G.08)								
	12:00-13:00												
	13:00-14:00												
	14:00-15:00		Materials (G.08)	Materials (G.08)	Materials (G.08)				Materials (G.08)				
	15:00-16:00												
	16:00-17:00												
Wednesday	09:00-10:00	See separate induction week schedule			Systems (G.08)		Scenario (G.08)						
	10:00-11:00		Sc 1 Intro (G.08)						Design (G.08)	Design (G.08)	Design (G.08)		Scenario (G.08)
	11:00-12:00		Maths (JZ Young)	Maths (JZ Young)	Maths (JZ Young)	Maths (JZ Young)			Maths (JZ Young)	Maths (JZ Young)	Maths (JZ Young)	Maths (JZ Young)	
	12:00-13:00		Fluids (B.05)	Soils (B.05)	Fluids (B.05)	Soils (B.05)			Fluids (B.05)	Soils (B.05)	Fluids (B.05)	Soils (B.05)	
	13:00-14:00												
	14:00-15:00												
	15:00-16:00												
	16:00-17:00												
Thursday	09:00-10:00	See separate induction week schedule					Scenario 1 (G.08)						
	10:00-11:00		Env Eng (WH)	Env Eng (WH)	Env Eng (WH)	Env Eng (WH)			Env Eng (WH)	Env Eng (WH)	Env Eng (WH)	Env Eng (WH)	Scenario (G.08)
	11:00-12:00		Structures (WH)		Structures (WH)				Structures (WH)		Structures (WH)		
	12:00-13:00		Maths (JZ Young)	Maths (JZ Young)	Maths (JZ Young)	Maths (JZ Young)			Maths (JZ Young)	Maths (JZ Young)	Maths (JZ Young)	Maths (JZ Young)	
	13:00-14:00												
	14:00-15:00		Context (G.08)	Context (G.08)	Context (G.08)	Context (Ramsay LT, Chemistry Bldg)			Context (G.08)	Context (G.08)	Context (G.08)	Context (Ramsay LT, Chemistry Bldg)	
	15:00-16:00												
	16:00-17:00												
Friday	09:00-10:00	See separate induction week schedule				Design testing (G.04)	Scenario 1 (G.08)						
	10:00-11:00		Maths (B.05)	Maths (B.05)	Maths (B.05)				Maths (B.05)	Maths (B.05)	Maths (B.05)	Maths (B.05)	Scenario (G.08)
	11:00-12:00		Soils (B.05)	Soils (B.05)	Soils (B.05)				Soils (B.05)	Soils (B.05)	Soils (B.05)	Soils (B.05)	
	12:00-13:00		P/Tutorial 2	P/Tutorial 2	P/Tutorial 2	P/Tutorial 2			P/Tutorial 2	P/Tutorial 2	P/Tutorial 2	P/Tutorial 2	
	13:00-14:00												
	14:00-15:00	Design (G.08)	Systems (G.08)	Geomatics (G.08)	Design (G.08)	Maths (B.05)			Materials (G.08)	Geomatics (G.08)	Scenario 2 Workshop (G.08)	Design (B.05)	
	15:00-16:00					Soils (B.05)							
	16:00-17:00		Design (G.08)	Design (G.08)		Design (B.05)				Design (G.08)			

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YEAR 1 **2007-2008 TIMETABLE** **TERM 2**

Week no.		12	13	14	15	16	17	18	19	20	21	22
Week start		**07-Jan**	**14-Jan**	**21-Jan**	**28-Jan**	**04-Feb**	**11-Feb**	**18-Feb**	**25-Feb**	**03-Mar**	**10-Mar**	**17-Mar**
Week end		**11-Jan**	**18-Jan**	**25-Jan**	**01-Feb**	**08-Feb**	**15-Feb**	**22-Feb**	**29-Feb**	**07-Mar**	**14-Mar**	**21-Mar**
							Reading Week					
Monday	09:00-10:00	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)			Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	
	10:00-11:00	Structures (MP)	Structures (MP)	Structures (MP)	Structures (MP)	Scenario 3 (G.08)		Structures (MP)	Structures (MP)	Structures (MP)	Structures (MP)	Scenario 4 (G.08)
	11:00-12:00	Fluids (MP)	Fluids (MP)	Fluids (MP)	Fluids (MP)			Fluids (MP)	Fluids (MP)	Fluids (MP)	Fluids (MP)	
	12:00-13:00	P/Tutorial 1	P/Tutorial 1	P/Tutorial 1	P/Tutorial 1			P/Tutorial 1	P/Tutorial 1	P/Tutorial 1	P/Tutorial 1	
	13:00-14:00	See Lab Timetable		See Lab Timetable	See Lab Timetable							
	14:00-15:00		Scenario 3 Introductory Lecture (G.08)					Scenario 3 Feedback (G.08)	Scenario 4 Introductory Lecture (G.08)			
	15:00-16:00											
	16:00-17:00											
Tuesday	09:00-10:00		See Lab Timetable	See Lab Timetable	See Lab Timetable			See Lab Timetable	See Lab Timetable			
	10:00-11:00					Scenario (G.08)						Scenario (G.08)
	11:00-12:00											
	12:00-13:00										Soils (B.05)	
	13:00-14:00	See Lab Timetable										
	14:00-15:00			Tools (B.05)						Tools (G.08)	Env Eng (B.05)	
	15:00-16:00											
	16:00-17:00											
Wednesday	09:00-10:00											
	10:00-11:00	Fluids (AV Hill)	Soils (AV Hill)	Fluids (AV Hill)	Soils (AV Hill)	Scenario (G.08)		Fluids (AV Hill)	Soils (AV Hill)	Fluids (AV Hill)	Soils (AV Hill)	Scenario (G.08)
	11:00-12:00	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)			Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	
	12:00-13:00											
	13:00-14:00											
	14:00-15:00											
	15:00-16:00											
	16:00-17:00											
Thursday	09:00-10:00											
	10:00-11:00	Env Eng (Anat.)	Env Eng (Anat.)	Env Eng (Anat.)	Env Eng (Anat.)	Scenario (G.08)		Env Eng (Anat.)	Env Eng (Anat.)	Env Eng (Anat.)	Scenario 4 (Structures Lab)	
	11:00-12:00	Structures (Anat.)		Structures (Anat.)				Structures (Anat.)		Structures (Anat.)		
	12:00-13:00	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)			Maths (AV Hill)	Maths (AV Hill)	Maths (AV Hill)		
	13:00-14:00											
	14:00-15:00	Scenario 2 Feedback (G.08)	Context (ICE & careers) (G.08)					Context (industrial speaker) (G.08)	Context (industrial speaker) (G.08)	Context (industrial speaker) (G.08)		
	15:00-16:00											
	16:00-17:00											
Friday	09:00-10:00											
	10:00-11:00	P/Tutorial 2	P/Tutorial 2	P/Tutorial 2	P/Tutorial 2	Scenario (G.08)		P/Tutorial 2	P/Tutorial 2	P/Tutorial 2	Scenario (Structures Lab)	
	11:00-12:00	Soils (B.05)	Soils (B.05)	Soils (B.05)	Soils (B.05)			Soils (B.05)	Soils (B.05)	Soils (B.05)		
	12:00-13:00	Maths (B.05)	Maths (B.05)	Maths (B.05)	Maths (B.05)			Maths (B.05)	Maths (B.05)	Maths (B.05)		
	13:00-14:00											
	14:00-15:00		Geomatics (CL2)	Design (CL2)	See Lab Timetable (Ingold Cluster)			See Lab Timetable (Ingold Cluster)	Geomatics (G.08)			
	15:00-16:00											
	16:00-17:00		Design (CL2)									

Clusters

Context:

Offers an appreciation of the technical, political, and cultural contexts of engineering and interactions with the environment. Focus on clients, planning, regulation, legislation, economics and history.

Change:

Builds on the understanding and skills gained in other parts of the syllabus to plan and realise an outcome. Focus on design skills, systems, management of projects and creativity development.

Clusters

Mechanisms:

Develops an understanding of the theories underpinning engineering processes, where and why they are similar in different fields and where and why they are different.

Tools:

Helps to develop a variety of skills, in mathematics, communications, land surveying, computing and drawing

Scenarios -
the essential ingredient of our new degree programmes

- One-week multi-disciplinary projects to apply taught material and identify need for future study
- Students work in groups – different size, membership and roles for each project
- Assessment against different criteria for each project
- Each scenario run by two academics:

  - one to link curriculum to the project,
  - the other to organise the project logistics

Scenarios -
the essential ingredient of our new degree programmes

Year 1:

- Traffic and pollution in St Albans – concepts
- Bridge design
- Shrimp farm in the Thames Estuary
- St Albans ii - detail

Year 2:

- Community Centre
- Offshore wind farm
- Airport expansion
- Drought in SE England

Scenarios -
the essential ingredient of our new degree programmes

- Major task for staff to prepare a Scenario and make contact with relevant industrial advisors
- Major staff commitment during Scenario week
- Major task to arrange marking of group and individual work and subsequent feedback
- Offers an opportunity for staff whose research interests are not part of the traditional 1st or 2nd year curriculum to play an active role in teaching

Students briefing by staff in St Albans

Site survey in St Albans

The group-thinking stage ....

Waiting for questions …

Review by Chief Engineer, Atkins

Reduction in report-writing

- As in the old degree programmes, students are required to carry out laboratory experiments to underpin lecture-based teaching
- Understanding of the mechanisms being demonstrated in the experiments is assessed by short reports, by examination and in scenarios
- Full reports are required for only a few of the experiments, specifically to develop and test technical writing skills

Assessment structure – 1st and 2nd years

- Assessment for each year is managed within a single 4-unit course
- This gives flexibility to introduce small components into the curriculum without a need to create incoherent and disjointed half-units
- Marks spreadsheet gives overall performance during the year and alerts staff to poor performance in Scenarios and other coursework

TITLE	FIRST NAME	LAST NAME	Prog	Cand#	CL. 1 (Context) Exam 1	Exam 2	CW (Helena)	CW (Nick)	Profession Visit Report	CV	CLUSTER 2 (Change) Sc. 1	Sc. 2**	Sc. 3	Sc. 4	Design	Tension & Comp.	Seepage	Pin-joint Frmewrk	Pressure Cylinder	Pipe Flow	Shear Box	CL. 3 Exam A	Exam B	CLUSTER 4 (Tools) Math Final	Math Test1	Math Test2	CW 1 (autocad)	CW 2 (autocad)	GIS	Drawing 1	Drawing 2	Drawing 3	Drawing 4	Comm. Essay	Cl 1 Context	Cl 2 Change	Cl 3 Mechanisms	Cl 4 Tools	TOTAL	Grade	Overall rank:	A-levels	Points	Cl 1 Context	Cl 2 Change	Cl 3 Mechanisms	Cl 4 Tools	TOTAL	Cluster fails	Grade	Rank
					40%	40%	5%	5%	5%	5%	20%	20%	20%	20%	5%	5%	5%	5%	5%	5%	5%	50%	50%	50%	5.0%	5.0%	5.0%	5.0%	5.0%	6.0%	4.6%	2.0%	7.4%	5.0%	25%	25%	25%	25%						20%	0%	20%	0%				
Miss	Judith Pauline	Smith-Jones	H225	CQZG0	69	64	73	75	85	85	70	84	70	68	78	90	87	57				92	78	98	97	78	100	65	100	90	95	89	81	75	69	74	85	92	80	A	1	EB (88%	30	83	74	102	92	88		A	1
Mr	Keyvan	Smith-Jones	H202	BWVC3	64	66	72	65	70	80	56	63	75	73	70	70		70	90			79	73	79	78	83	100	85	100	90	95	71	87	75	66	68	76	83	73	A	2	AAB	28	79	68	91	83	81		A	2
Miss	Maria	Smith-Jones	H200	DDPC6	60	60	58	75	0	75	60	82	74	72	65			57		90	70	76	67	93	80	80	100	85	100	88	83	67	67	80	59	72	72	88	72	A	3	ACBBA	26	70	72	86	88	79		A	3
Miss	Nuha	Smith-Jones	H205	CTBR0	73	70	80	75	80	90	60	62	54	59	53	60	64				72	78	63	86	88	88	100	65	100	82	87	48	51	80	74	59	71	83	72	A	4	ABAb	28	88	59	85	83	79		A	4
Mr	Jonathan David William	Smith-Jones	H202	FDTZ7	57	66	76	85	65	70	60	79	69	72	96	80		68		65		66	78	82	45	70	100	85	100	74	86	41	67	68	64	71	72	79	72	A	5	BBB	24	77	71	86	79	78		A	5
Mr	Paul	Smith-Jones	H202	BCZS3	69	56	75	85	80	80	70	78	58	62	90	80				80	60	57	75	68	57	82	100	85	100	85	95	77	74	80	66	69	66	76	69	B	6	AAAA	30	79	69	79	76	76		A	6
Miss	Anna Bodil Charlotte	Smith-Jones	H202	CVLB4	43	58	69	65	60	90	65	77	63	58	70		82			80	74	77	65	70	57	87	100	85	100	82	90	95	97	65	54	68	71	78	68	B	8	Swedish	26	65	68	85	78	74		A	7
Mr	Mohammad Mehdi	Smith-Jones	H205	CDMZ7	40	39	62	58	70	70	60	77	58	58	78	90	82			55		62	81	91	92	90	100	85	100	90	92	91	80	65	45	66	72	90	68	B	7	AAAb	30	54	66	86	90	74		A	8
Ms	Aimalohi	Smith-Jones	H205	BVYN0	53	70	61	62	80	80	65	82	44	71	60	60		68			50	82	53	69	63	87	100	85	100	60	49	53	53	80	64	64	68	71	67	B	9	BB+US c	26	76	64	81	71	73		A	9
Mr	Fabio	Smith-Jones	H202	CDWJ3	47	59	75	68	0	57	60	54	67	62	49	80				70	50	78	81	69	53	78	100	85	100	66	76		43	80	52	61	80	70	66	B	12	AAAA	30	63	61	95	70	72		A	10
Miss	Christiana	Smith-Jones	H200	BMYK2	61	66	68	75	60	70	49	55	71	66	60	50			70		65	52	58	97	67	67	100	85	100	70	69	41	45	68	65	60	55	84	66	B	10	ABBA	28	78	60	66	84	72		A	11
Mr	Daniel Martin	Smith-Jones	H200	BXZF5	48	58	56	65	80	60	56	79	67	65	47	80		62		65		72	59	87		78	100	85	100	64	49	31	56	75	55	66	66	76	66	B	11	ABA	28	66	66	79	76	72		A	12
Miss	Alyona Ellen	Smith-Jones	H205	CKBW4	53	62	68	0	85	0	49	59	68	76	69	90		65			65	64	65	89	27	80	100	85	100	79			53	62	54	65	65	76	65	B	14	ABB	26	65	65	77	76	71		A	13
Miss	Dalila Alake	Smith-Jones	H202	CHVM7	48	63	67	65	70	70	60	54	60	66	70	80				80	50	60	42	96	78	60	100	65	100	89	92	47	86	90	58	62	51	89	65	B	13	AAB	28	70	62	61	89	71		A	14
Miss	Mahmuda Akhtar	Smith-Jones	H202	BNLB3	53	65	68	68	80	80	60	70	47	58	50		63	70		65		62	65	71	72	80	100	65	100	72	43	52	46	65	62	59	64	70	64	B	15	ABA	28	74	59	76	70	70		A	15
Mr	Herman	Smith-Jones	H202	BSMS0	49	51	61	62	70	70	70	62	64	71	50	80		70			55	75	58	58	38	72	100	85	100	88	85	91	74	68	53	66	67	69	64	B	16	AAA	30	64	66	80	69	70		A	16
Mr	Daniel Hock Wah	Smith-Jones	H200	BSJM9	48	54	46	0	0	65	35	48	56	54	40	60	43			65		87	72	87	90	85	100	85	100	50			27	48	46	49	80	74	62	B	18	ACCB	24	56	49	95	74	68		B	17
Mr	Joel Aaron	Smith-Jones	H202	BPBD9	49	63	69	55	80	75	60	78	58	51	60	60	43	65				57	54	77	62	70	100	65	100	70	55	45	49	80	59	61	56	74	62	B	17	ABA	28	71	61	67	74	68		B	18
Mr	Sebastien	Smith-Jones	H225	DXHG0	60	52	75	68	85	65	60	54	49	66	50					60		60	62	73	40	80	100	65	100	64	55	32	40	90	59	51	61	70	60	B	19	FB (14)	24	71	51	73	70	66		B	19
Miss	Sabeya Begum	Smith-Jones	F891	CQGZ0	55	59	61	65	0	70	60	84	65	60	70	70				45	72	45	51	64	57	80	100	65	100	84	83	61	60	90	55	67	48	71	60	B	20	BeBC	22	66	67	58	71	65		B	20
Mr	Kadar	Smith-Jones	H202	DPSS5	43	51	53	75	75	70	65	52	61	50	48		46	57			65	49	52	86	75	83	100	65	100	70	84	60	78	58	51	56	51	82	60	B	21	ACB	24	61	56	61	82	65		B	21
Mr	Ramesh Kanna	Smith-Jones	H200	DXMX8	48	57	48	55	62	65	60	40	50	56	67				60	30	43	63	56	80	77	85	100			78	83	75	40	62	54	51	60	69	58	C	23	FB (10.8	26	64	51	71	69	64		B	22
Mr	Kiran	Smith-Jones	H202	BMZK1	45	50	72	68	0	60	49	43	57	63	65	80		72			55	67	46	76	57	77	100	65	100	86	74	22	45	75	48	56	57	74	59	C	22	ABBB	26	58	56	68	74	64		B	23
Miss	Tanya Sanchez	Smith-Jones	F891	BCDM1	67	61	68	0	67	65	60	48	71	66	49	60				65	55	39	49	56	58	68	100	85	100	83	59	39	75	75	61	60	44	67	58	C	24	IB (34)	26	73	60	53	67	63		B	24
Mr	Miles Douglas Elliott	Smith-Jones	H205	CDYF5	49	68	52	65	85	50	49	43	58	71	70	60				55	65	67	50	50	65	60	100	65		68	40		46	80	60	57	59	53	57	C	25	AACc	26	71	57	70	53	63		B	25
Mr	George Thomas	Smith-Jones	F892	CYQP2	57	62	70	65	0	67	55	43	56	45	0	60				65	65	59	55	56	50	67	100	65	100	78	9	62	57	58	58	49	57	61	56	C	26	BAAA	30	69	49	68	61	62		B	26
Mr	Tariq Nassar	Smith-Jones	H200	DPPF1	43	55	61	68	65	0	60	54	66	65	45	50				55	65	55	56	60	55	60		65	100	65	50	23	59	58	49	60	56	58	56	C	28	ABC	24	59	60	67	58	61		B	27
Mr	Kin-To Kendall	Smith-Jones	H202	DMHV6	40	58	65	55	85	85	65	46	53	48	50	60				65	71	43	43	79	80	70	100	65	100	40	54		40	55	54	55	43	71	56	C	27	ADAA	30	65	55	52	71	60		B	28
Mr	Waihang	Smith-Jones	H200	CTMD3	36	42	41	0	0	0	40	48	69	47	40	70			65		45	61	65	81	65	42	100	85	100	64	64	25	33	68	33	52	63	73	55	C	29	ABA	28	40	52	76	73	60		B	29
Miss	Nushrath	Smith-Jones	F891	CXDB0	45	66	64	65	0	50	56	54	66	63	68	60	56			40		52	32	74	72	70			100	90	87	22	49	68	54	59	42	66	55	C	30	ACCd	22	64	59	50	66	60		B	30
Mr	Janis	Smith-Jones	H200	BQDP4	47	55	66	68	0	65	62	54	61	70	60	70	68	57				42	57	46	43	45	100	65	100	81	83	41	52	58	50	62	50	57	55	C	33	HSD Ont	26	61	62	59	57	60		B	31
Mr	Kasra	Smith-Jones	H200	CLMJ5	51	40	62	58	60	70	60	70	60	63	48	60		60		45		37	50	64	45	48	100	85	100	79	79	61	55	42	49	61	44	66	55	C	31	BCA	24	59	61	52	66	60		B	32
Mr	Mohamad	Smith-Jones	H200	BVBZ1	47	52	58	0	60	0	62	17	64	45	52		82			45	60	49	46	86	58	78	100		100	75	77	61	58	68	46	50	48	77	55	C	32	FB (16)	26	55	50	57	77	60		B	33
Mr	Ismail	Smith-Jones	H200	DBSS9	51	65	68	65	0	85	60	59	52	69	55	60		52		55		49	27	37	42	68	100	85	100	67	68	12	55	75	57	59	38	54	52	C	34	BBA	26	69	59	46	54	57		C	34
Mr	Qin	Smith-Jones	H200	DTBQ0	33	43	49	55	65	70	60	46	49	58	50	60				60	50	54	45	80	32	80			100	69	37	11	33	58	42	54	50	62	52	C	35	ACC	22	51	54	59	62	56		C	35
Ms	Germaine Tze Mun	Smith-Jones	H224	CPXB8	29	34	51	65	65	85	70	63	53	75	58	50		53		80		33	35	68	78	72	100	85	100	77	40	24	62	65	39	64	34	70	52	C	36	HSD Car	26	46	64	41	70	55		C	36
Mr	Demos	Smith-Jones	H200	CNDS3	31	45	59	55	0	60	65	55	40	56	55	70						46	19	92	90	87	100	65	100	72	69	47	57	48	39	49	33	83	51	C	37	apolytiric	24	47	49	39	83	55	1	C	37
Mr	Iason Ioannis	Smith-Jones	H200	DDSH8	37	57	65	68	0	60	56	48	69	61	45	70					50	30	42	69	30	58	100		100	59	39	6	38	80	48	55	36	61	50	C	38	IB (32)	24	57	55	43	61	54		C	38
Miss	Sian	Smith-Jones	H202	BHKD8	59	52	69	0	85	67	62	48	61	66	94	70				55	50	36	24	21	50	60	100	65	100	66	68	47	42	75	55	61	30	44	48	D	41	ABB	26	66	61	36	44	52	1	C	39
Mr	Alexios	Smith-Jones	H200	DZSF8	37	45	57	62	60	0	63	48	60	56	64			47			65	38	34	45	45	65	100	85	100	85	81	53	54	75	42	54	36	60	48	D	39	IB (32)	24	50	54	43	60	52		C	40
Mr	Sungmin	Smith-Jones	H220	CJVD4	36	36	52	52	85	58	40	47	55	58	40	60	35		65			22	40	66	53	73	100	65	100	87	50	57	53	65	41	50	31	69	48	D	40	Transfer	15	49	50	37	69	51	1	C	41
Miss	Qian (Sunny)	Smith-Jones	H200	BMBY1	28	42	0	55	60	60	70	40	48	70	0	60		57			55	38	33	71	50	38	100	65	100	40	29	10	22		37	54	36	59	46	D	43	ABB	26	44	54	43	59	50		C	42
Mr	Yuming (Charles)	Smith-Jones	H202	DPSV2	17	37	61	65	0	65	70	40	62	48	42	80	63	53				23	43	83	68	78		65	100	62	28	20	21	48	31	56	33	66	47	D	42	ACB	24	37	56	40	66	50	1	C	43
Mr	Tomasz Daniel	Smith-Jones	H200	CHRN0	45	55	55	0	0	40	70	49	40	54	0	60		42				36	34	54	43	53	100	85	100		35	49	43	80	45	48	35	56	46	D	44	ABC	24	54	48	42	56	50		C	44
Mr	Vivek	Smith-Jones	F891	BMKS8	59	61	55	68	65	70	63	33	69	61	45	50				60	50	19	22	14	18	50	100	90	100	53	54	17	66	75	61	55	21	40	44	D	45	BBDe	20	73	55	25	40	48	1	D	45
Miss	Ying	Smith-Jones	H202	CPTP8	25	40	52	52	85	67	35	40	53	61	0	60		50			60	22	24	59	57	77	100	65	100	63	29	9	18	42	39	46	23	58	42	D	46	AECA	26	47	46	28	58	45	1	D	46
Mr	Chenghao	Smith-Jones	H220	DFPT7	28	40	53	62	60	53	35	40	40	46	0	40		40		40		28	32	84	23	77	100	65					0	42	39	38	30	57	41	D	48	AcBA	28	46	38	36	57	44	2	D	47
Mr	Tony	Smith-Jones	H200	FDJY8	23	24	55	55	55	50	40	40	49	48	55	60	41			80		30	28	59	48	58	100		100	87	53	40	40	48	29	47	29	59	41	D	47	ACB	24	35	47	35	59	44	2	D	48
Mr	Hiten	Smith-Jones	F891	BPYF4	31	56	62	58	0	0	62	33	58	45	0	60				45	55	27	28	29	33	48	100	65	100	49			30	68	41	48	28	41	39	E	49	BCeB	22	49	48	33	41	42	1	D	49
Mr	Haibo	Smith-Jones	H202	BSGY0	28	45	56	62	0	62	60	40	43	61	0							32	42	49	5	57	100						0	48	38	41	37	35	38	E	50	ABBB	26	46	41	44	35	42	1	D	50
Mr	Sayed Junaid	Smith-Jones	H205	BDQC7	60	56	64	0	0	0	60	52	57	47	58						50	11	10	15	17	25	100	85	100	54			0	75	50	49	11	31	35	E	51	BBAe	26	60	49	13	31	38	2	E	51
Mr	Haider	Smith-Jones	H200	CFLR4	25	51	52	65	60	0	49	40	54	33	48	60		50			55	12	17	21			100	85	100	48	36	31	33	62	39	46	15	36	34	F	52	RHUL-U	15	47	46	17	36	37	2	E	52
Mr	Elidon	Smith-Jones	H200	BWTX4	28	35	51	62	65	50	35	49	40	51	0	50		57		65		19	17	32	17	30		85	100	64			40	45	37	44	18	37	34	F	53	QMUL-S	15	44	44	22	37	36	2	E	53
Mr	Henry	Smith-Jones	F891	DMBH6	43	51	67	0	55	55	45	40	63	52	42							35	10	4	7	3	100	65		51	37	27	18	65	46	42	23	21	33	F	55	CBC	20	55	42	27	21	36	2	E	54
Miss	Qianni (Karin)	Smith-Jones	H202	BMBQ9	31	25	0	0	0	65	63	40	40	61	0	50				55	54	26	31	40	32	33		85					0	58	26	49	29	30	33	F	54	2/20 pas	15	31	49	34	30	36	3	E	55
Mr	Chi Fung Vincent	Smith-Jones	H202	DVTQ0	27	30	0	65	0	0	60	36	55	64	0	40					53	15	26	31		60			100				0	58	26	48	21	27	30	F	57	???	15	31	48	25	27	32	3	F	56
Mr	Melek	Smith-Jones	H200	CTCJ7	31	17	45	62	60	0	60	40	38	41	46	20		53				16	15	23			100	85	100	54	42	43	28	58	27	42	16	37	30	F	56	RHUL-U	15	33	42	19	37	32	3	F	57
Mr	Xu (Jackie)	Smith-Jones	H200	FBCR4	0	8	57	55	0	40	60	20	53	56	45	40				40		0	2	47	73	33		85	100	56	49	18	10	45	11	44	1	47	26	F	58	ABA	28	13	44	1	47	26	2	F	58
Mr	Sohaib Hassan	Smith-Jones	H200	CKRX7	0	0	69	0	0	55	60	43	42	48	0	50		57				0	0	0			100		100		40	21	28		6	44	0	14	16	F	59	BCBC	22	7	44	0	14	16	3	F	59
Miss	Aye	[Interrupted]	H200	BXQQ3	0	0	64	0	0	0	70	40	0	65	68	50	66					0	0	0		27				72	48	47	50	80	3	44	0	17	16	F	60	ACBBA	28	4	44	0	17	16	3	F	60
Mr	Jiajun	Smith-Jones	H200		0	0	0	45	0	67	60	36	42	0	50							0	0	0	22				100				22	48	6	30	0	10	11	F	61	UPCSE (	15	7	30	0	10	12	4	F	61
Mr	Yong Won	[Left course]	H200		0	0	58	0	0	0	70	47	0	0	0	50						0	0	0						39			29	55	3	26	0	7	9	F	62	ABBA	28	3	26	0	7	9	4	F	62
Mr	Xiaomin	Smith-Jones	H200		11	5	0	0	0	0	56	25	28	0	0							0	1	0	2	2			0				0		6	22	1	0	7	F	63	Chinese	15	8	22	1	0	8	4	F	63
Mr	James Robert	[Left course]	F891		0	0	75	0	0	0	60	40	0	0	0							0	0	0					0				0	68	4	20	0	3	7	F	64	DBC	18	5	20	0	3	7	4	F	64
Mr	Yiran	[restart]	H200		0	0	0	0	0	0	62	20	0	0	0							0	0	0									0		0	16	0	0	4	F	65	AAA	30	0	16	0	0	4	4	F	65
Mr	Jian	[Interrupted]	H200		0	0	0	0	0	0	65	0	0	0	0							0	0	0									0	0	0	13	0	0	3	F	66	ADDB	22	0	13	0	0	3	4	F	66
				Average*:	43	49	58	51	45	54	58	53	56	59	47	63	61	58	70	60	58	46	44	62	55	66	100	76	100	71	62	44	46	66	43	53	41	56	48				Average:	52	53	49	56	52			
				Standard Dev*:	16	16	16	27	35	28	9	16	12	9	26	14	17	9	12	14	9	23	21	26	22	19	0	10	0	14	22	23	23	13	19	13	24	25	19				Standard Dev:	23	13	29	25	21			
	* excluding bottom 6			<40% Count*:	22	12	3	12	22	11	4	5	2	1	11	1	1	0	0	1	0	26	23	12	12	7	0	0	0	0	9	19	18	0	23	7	32	16	18				<40% Count:	14	7	24	16	16			

Assessment structure – 1st and 2nd years

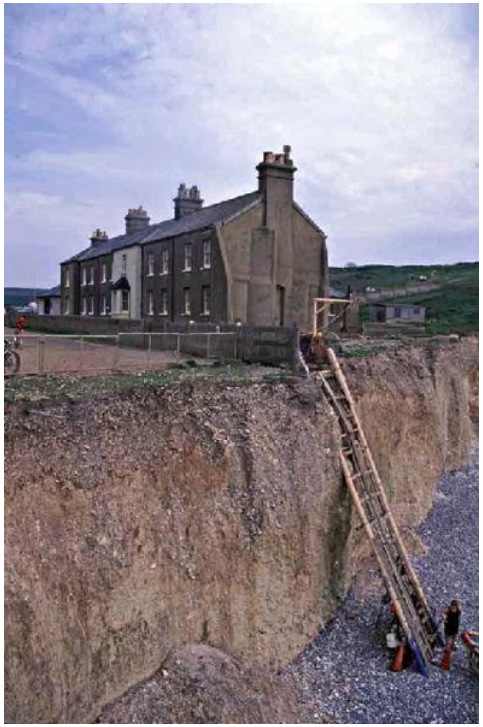
- Students have to achieve an overall pass mark AND have passed all four Clusters to proceed
- Referral tests are held in September for students whose overall mark lies in the referral band 35%-39%
- Referral tests are held in September for students who fail more than one Cluster but have an overall mark of 40% or above
- “Condoned fails” are allowed for students with an overall mark of 40% or above if only one Cluster is failed with a mark 35%-39%
- Record of Achievement also maintained to monitor student performance in “core” engineering disciplines – useful for writing references

Admissions

Criteria are now AAA

No specific requirement for Mathematics, Physics, Chemistry or Biology;

English language requirements need attention



Selection afternoons

- *mini-scenarios*
- *tours of College*
- *special interviews*

The Birling Gap Question

- *to defend or not to defend?*

Accreditation

- Civil and Environmental Engineering degrees are accredited by the Joint Board of Moderators: 2006 report supportive of changes
- CIWEM accredited Environmental Engineering degrees in 2009

The results so far ….

- In the first year of the programmes, marks in Context and Mechanisms had to be weighted to balance average marks across Clusters – successful change introduced to exam format for subsequent years

- Students are far better at managing themselves in group work on the Land Survey Field Course than those of previous years

- Most students near the bottom of the class identified as having a problem with English language – additional remedial classes have reduced this problem

- Far more students are now engaged with Global Citizenship - “International Programmes” and voluntary work overseas

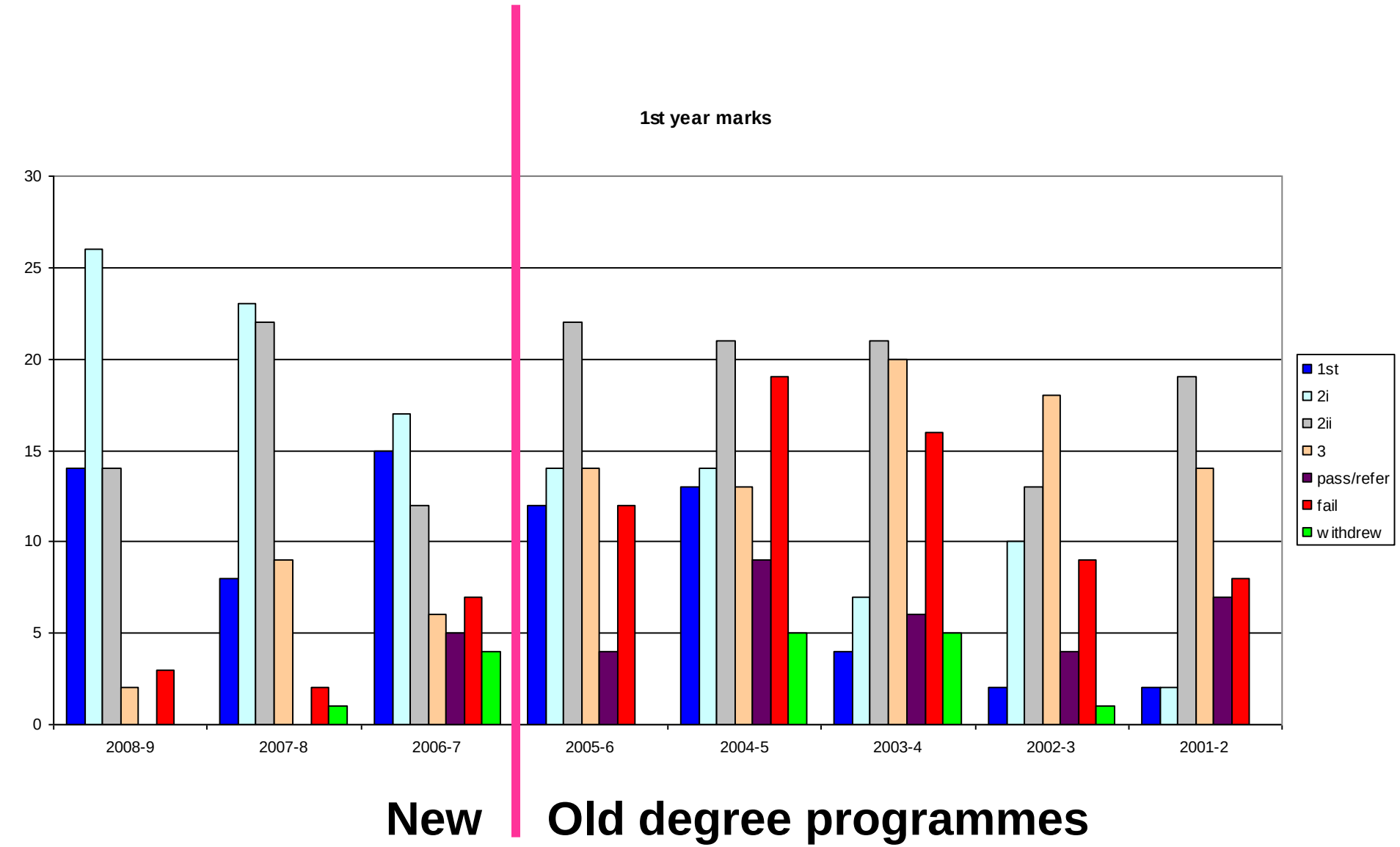
- Very much better performance overall, driven by better motivation

The student view:

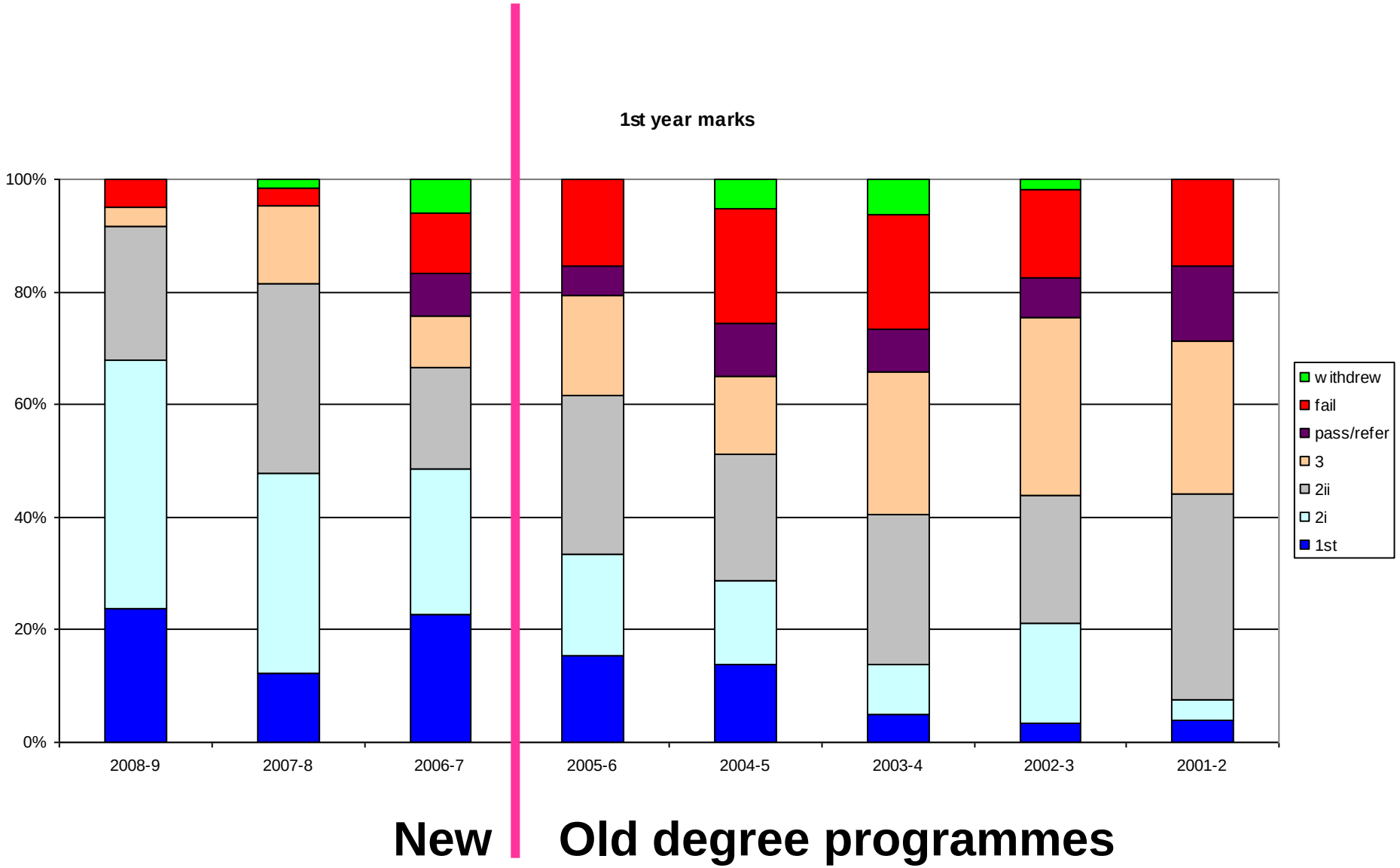
- Very positive about Scenarios – they are stressful, but “good stress”!
- Better guidance is needed to explain initially what is expected of students during each Scenario
- Make-up of groups and poor contributions from weaker or lazy students is seen as a problem
- Teaching sessions lasting three hours were considered too long
- Optional classes are required for maths, chemistry and biology – they would welcome a pre-sessional refresher course

Negative views:

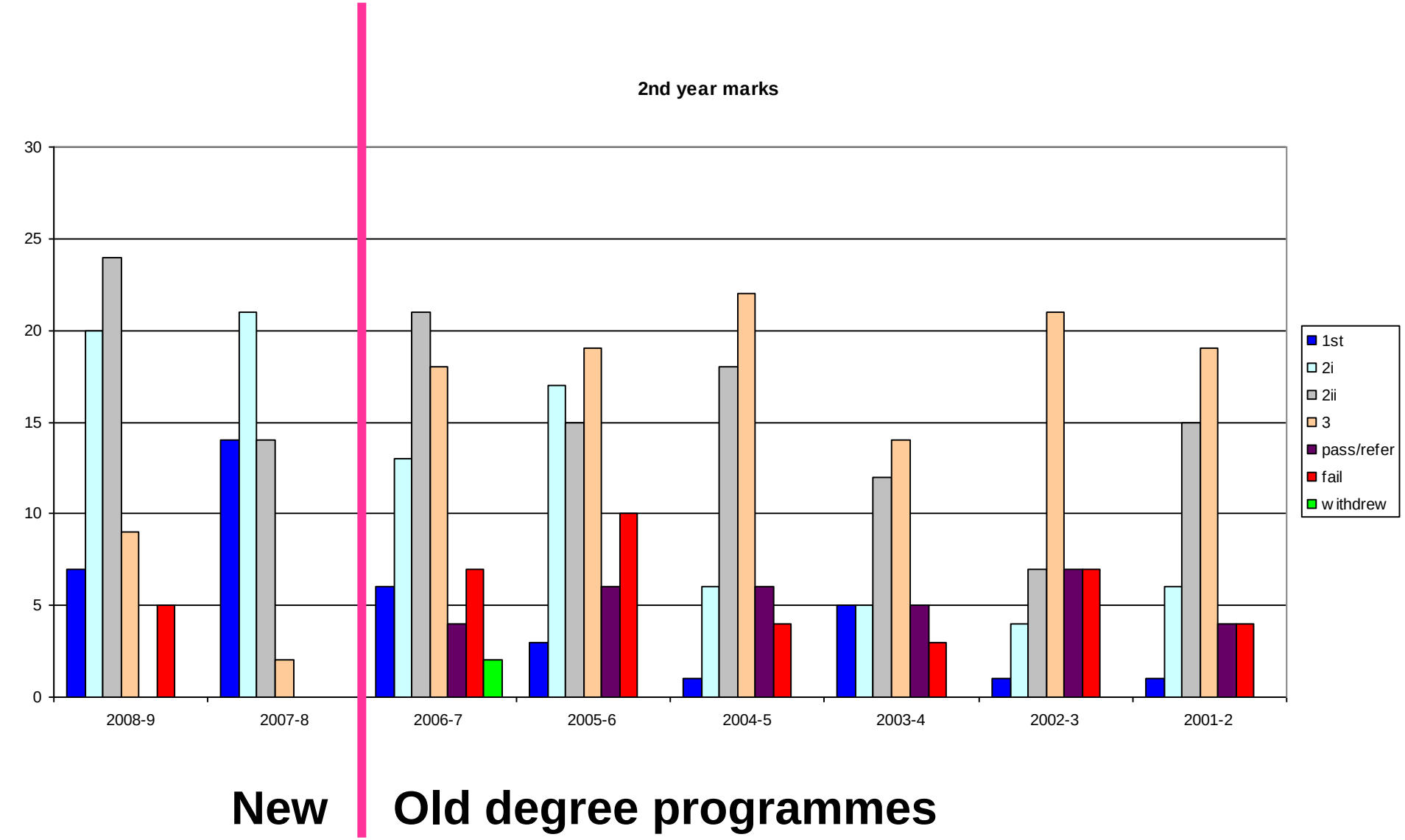
- Excessive workload
- Poor information flow
- Confusion when staff retire or change roles



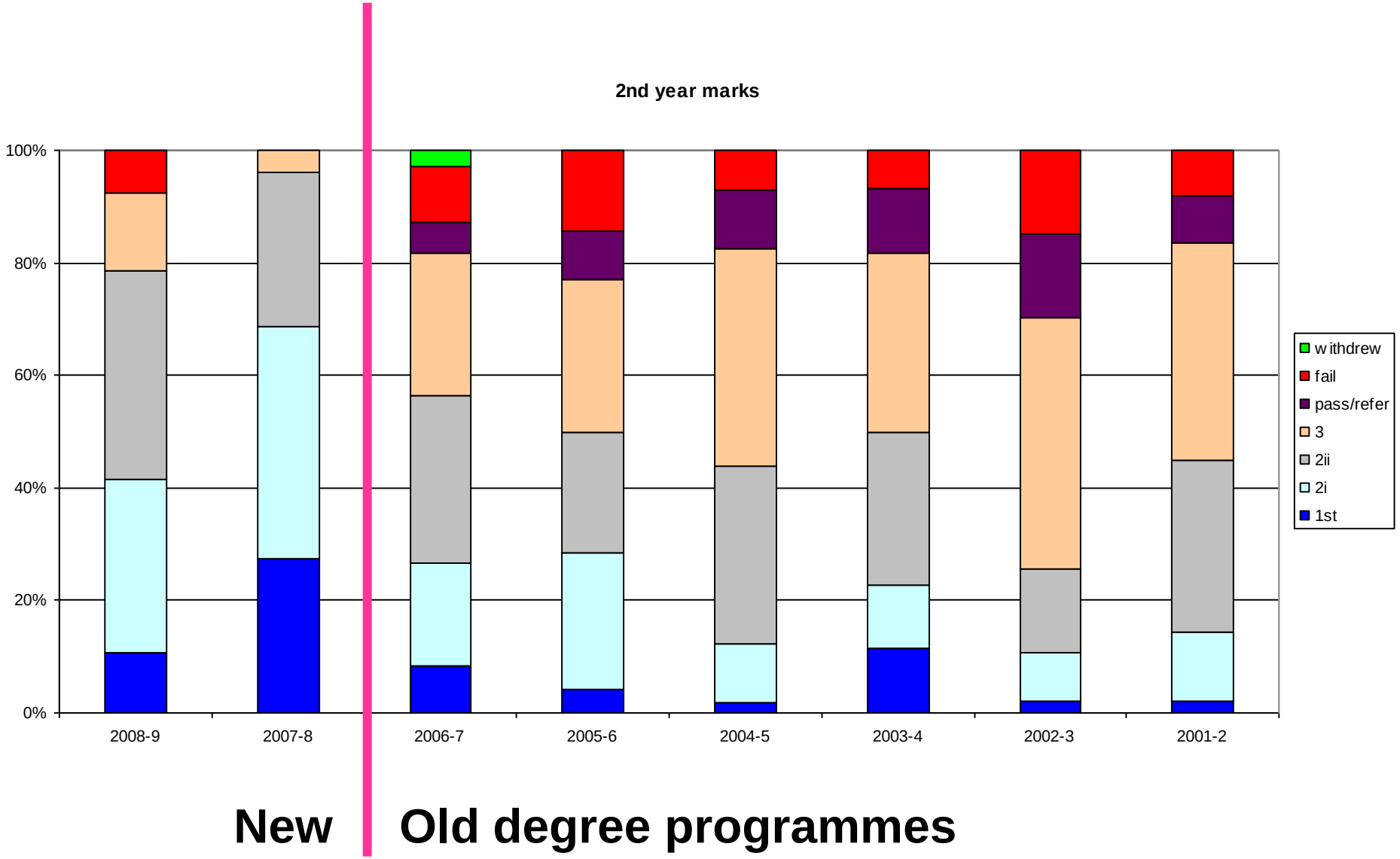
New | **Old degree programmes**



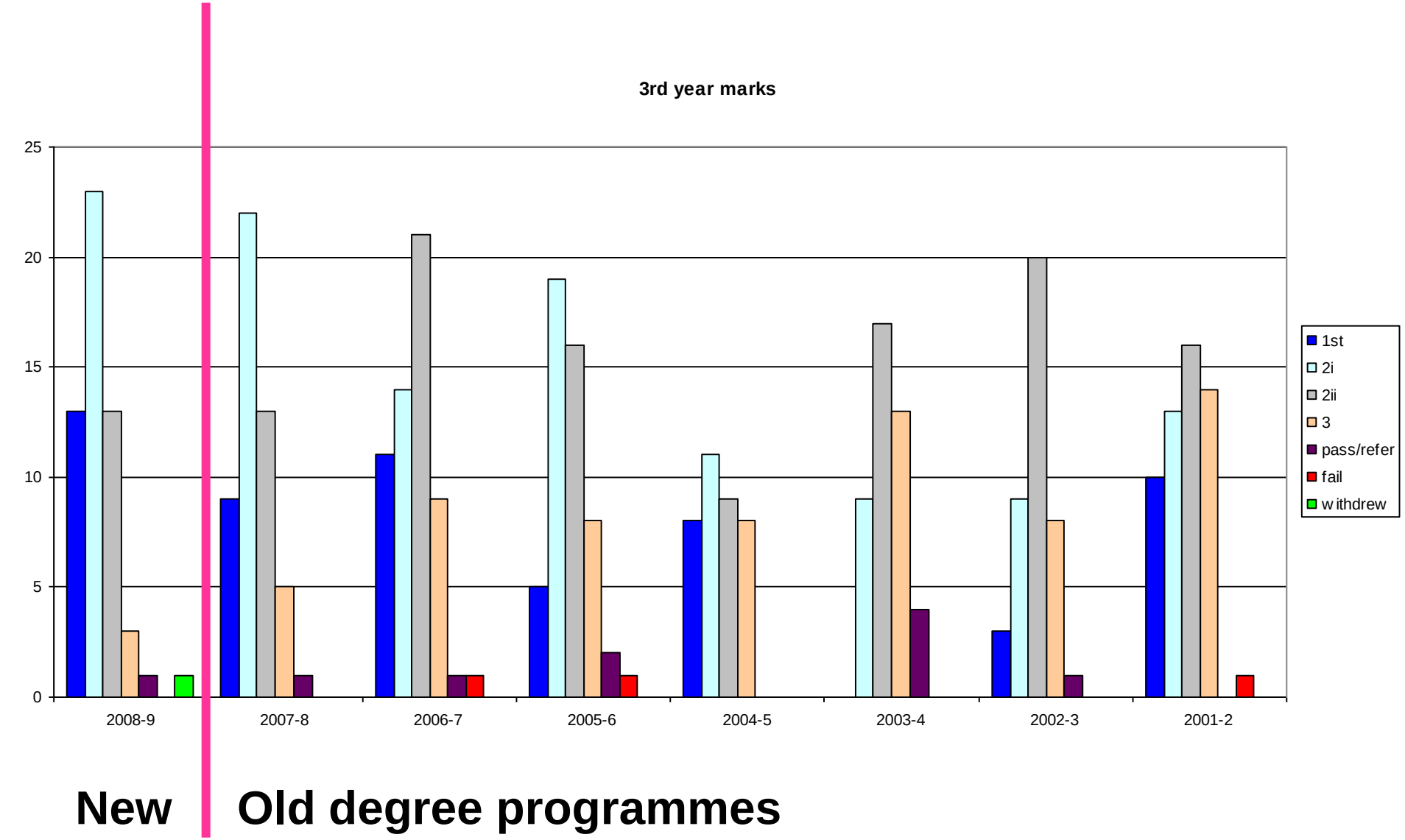
New | **Old degree programmes**



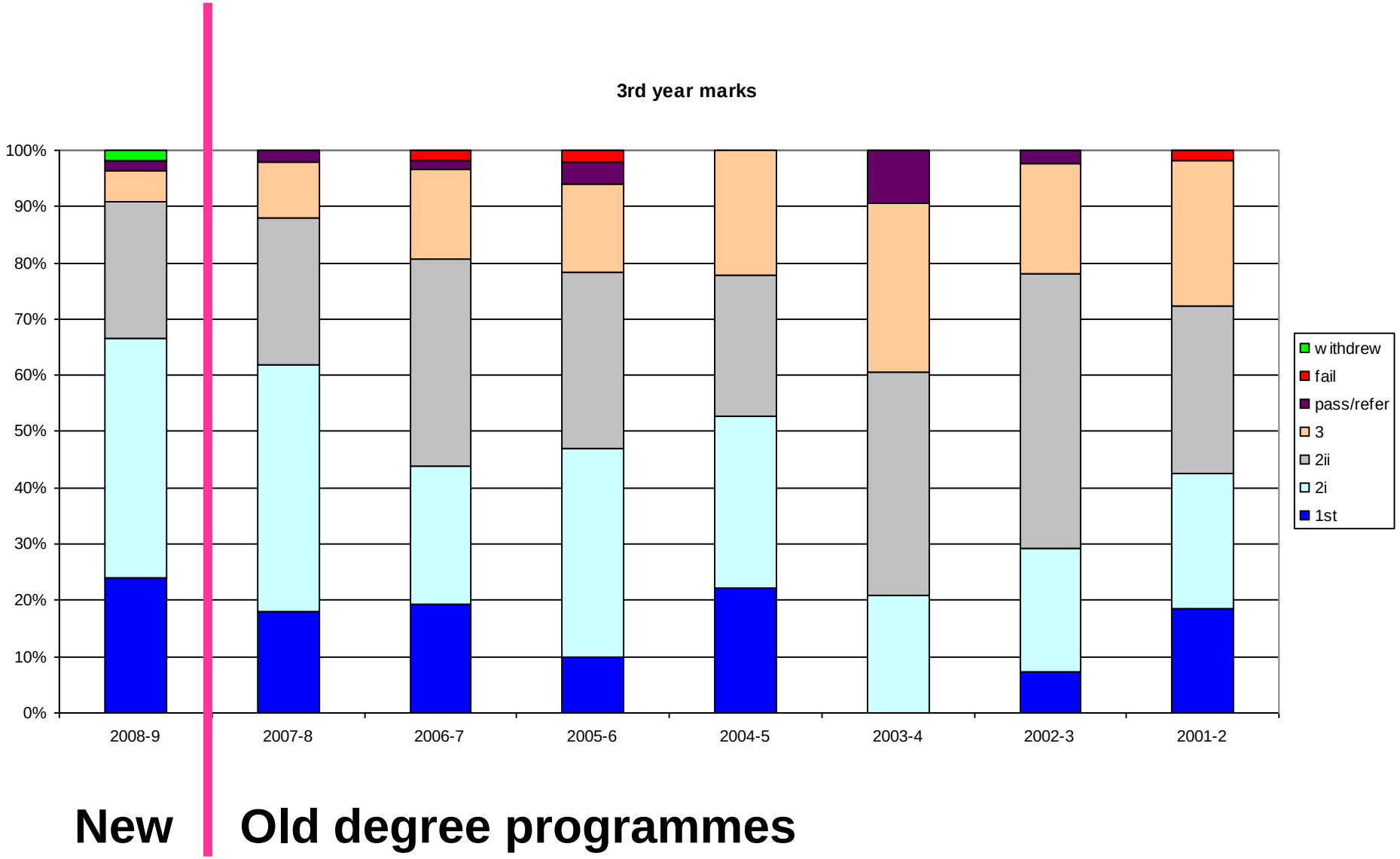
New | **Old degree programmes**



New | **Old degree programmes**



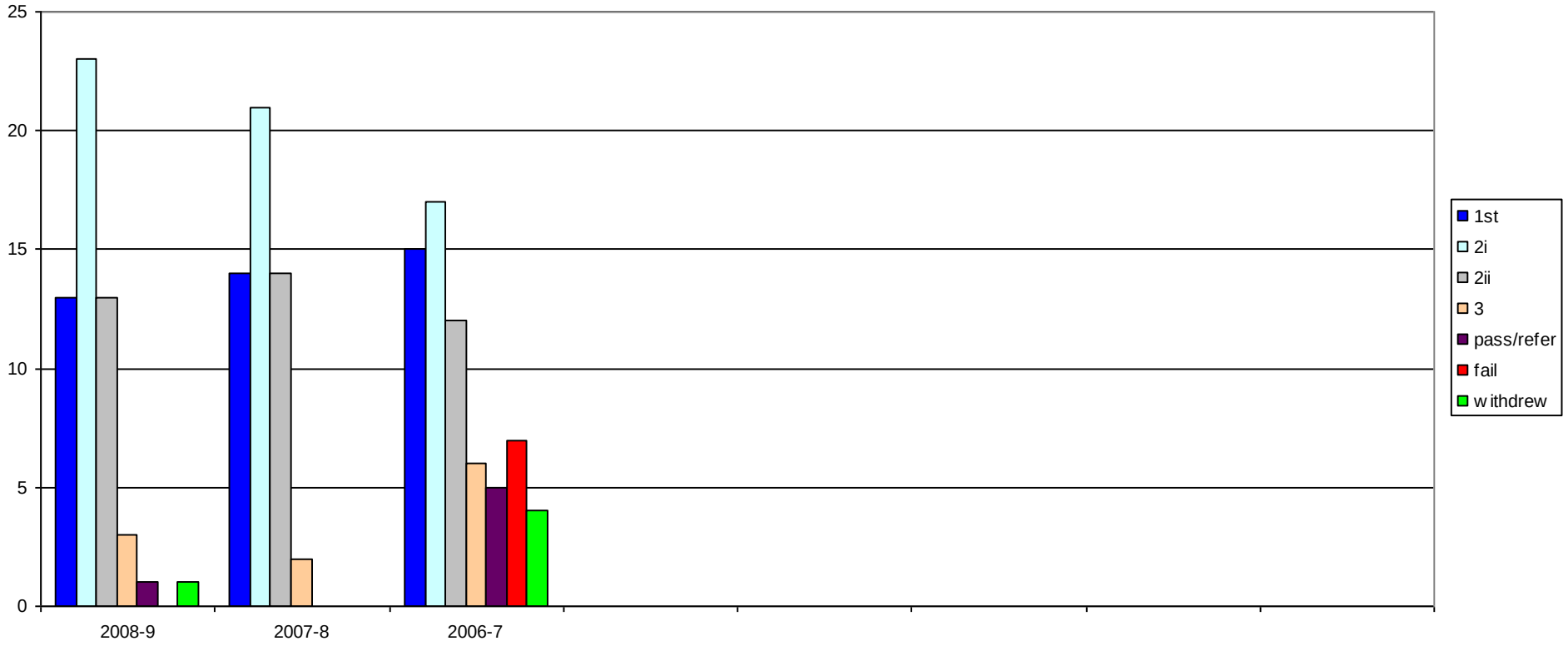
New | **Old degree programmes**



New | **Old degree programmes**

Cohort mains performance across all 3 years

2006 Intake
- comparing their 1st, 2nd and 3rd year marks



Summary

- Three A-grades are now required for entry to the new degrees
- Student performance is consistent across all years of study
- 1st year failure rate has fallen from 20% to under 5%
- 2nd year performance, traditionally weak, has been transformed
- Results from the 3rd year, which follows the traditional degree programme, are also improved
- Around 20% of the cohort choose to take their 3rd year abroad
- Even sceptical staff are positive about the new structure