**Model No.16**

**Annual Course Report: Fluid Mechanics (B)**

**University:** Benha University

**Faculty:** Faculty of Engineering at Shoubra

**Department offering the program:** Mechanical Engineering Department

**Department offering the course:** Mechanical Engineering Department

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| **A- Basic Information** | |  |  |  |  |
| **Course Code:** MPE222 | |  | **Course Title:** Fluid Mechanics (B) | | |
| **Specialization:** Mechanical Power Engineering | |  | **Course Type:** Compulsory |  |  |
| **Teaching Hours:** Lecture: 3 | Tutorial: 1 |  | Practical: 1 |  | Total: 5 |
| **Academic year / level:** 2014-2015 Second Year / Second Semester | | | | | |
| **Department offering the program:** Mechanical Engineering Department | | | | | |
| **Department offering the course:** Mechanical Engineering Department | | | | | |
| **Exam Committee Selection Rule :** | | | | | |
| **External Revision of Examination :** Unavailable | | | | | |
| **Lecturers Number:** 2 | | | | | |

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| **B- Specialized Information** |  |
| **1- Statistics** |  |
| No. of students attending the course: 125 | No. of students completing the course: 120 |
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| **Exam Results** | |
| Passed No.: 112 | Percentage: 93.3% |
| Failed No.: 8 | Percentage: 6.7% |
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| **Grading of successful students:** | |
| Excellent grade percentage: 5% | Very Good grade percentage: 15.8% |
| Good grade percentage: 22.5% | Pass grade percentage: 50% |

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| **2- Course Teaching** | |
| **Week no.** | **Topics** |
| 1 | Pipe flow |
| 2 | Pipe network analysis |
| 3 | Pipe network design |
| 4 | Water Hammer due to sudden valve closure |
| 5 | Differential forms of basic equations (mass conservation and Navier Stokes Equation) |
| 6 | Some exact and approximate solutions- Exact solutions – and integral form solution (Von Karman form) |
| 7 | Blausis Solution |
| 9 | Potential flow theory (Basic) |
| 10 | Potential flow theory (advanced) |
| 11 | Laminar Boundary Layer |
| 12 | Turbulent Boundary Layer |
| 13 | Lift and drag forces |

**- Topics taught as a percentage of the content specified:**>85%

**- Lecturers commitment of the course content:**>85%

**- Coverage of exam topics to course content:**>85%

**- Used Teaching and Learning Methods:**

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| --- | --- |
| Lectures: | ✓ |
| Tutorial problem session | ✓ |
| Class Activity: | ✓ |
| Case Study: | 🗶 |
| Assignments/ Homework: | ✓ |
| Practical training/laboratory: | ✓ |
| Seminar / workshop: | 🗶 |

**- Student Assessment:**

|  |  |  |
| --- | --- | --- |
|  | **Method of Assessment** | **Percentage of total (%)** |
|  | Midterm Examination | 12 |
|  | Final Term Examination | 60 |
|  | Oral Examination | 16 |
|  | Semester Work | 12 |
|  | Other Types of Assessment | 00 |
|  | **Total** | **100** |

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| **3- Facilities and Teaching Materials** | |
| Scientific References: | Available |
| Specific Tools: | Available |
| Supplies and Services: | Available |

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| **4- Administrative Constraints** |
| * Nothing |

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| **5- Student Evaluation Result of the Course (>90%)**  **نقاط القوة كثيرة جدا وهى كالآتى:**   1. تم عرض المستهدف من تدريس المقرر بوضوح فى اول محاضرة. 2. أسلوب التعليم ساعدنى على النقاش والحوار للوصول الى المفاهيم والحقائق بشكل جماعى. 3. أساليب تدريس المقرر تجعلنى فى غير حاجه للدروس الخصوصية. 4. تضمن أسلوب التعليم فى المقرر العديد من الانشطه التى ساعدتنى على اكتساب القدرة على التعلم الذاتى. 5. يلتزم المحاضر بمواعيد المحاضرة المحددة فى الجدول المعلن. 6. يلتزم المحاضر بمحتويات المقرر. 7. لا يهدر المحاضر وقت المحاضرة بما هو خارج. 8. المحاضر يعامل الطلاب باحترام. 9. المحاضر يعلن للطلاب نتائج الامتحانات وأعمال السنة. 10. تواجد المحاضر فى أوقات الساعات المكتبية. 11. المعيد ملتزم بالحضور وفقا لمواعيد الجداول الدراسية. 12. المعيد يعامل الطلاب باحترام. 13. المعيد على قدر عالى من استيعاب المنهج الدراسى. 14. الموارد التعليمية (التجهيزات المعملية/ قاعات المحاضرات وغيرها) المستخدمة للعمل على اكتسابى للمهارات المهنية والعملية كافية. 15. الامكانيات المتاحة لتكنولوجيا المعلومات كافية من وجهة نظرى. 16. تتم فى المقررات الدراسية تكليفات تعليمية للاستفادة من امكانيات تكنولوجيا التعليم المتاحة وتساعدنى فى عملية التعلم الذاتى . 17. أجد أن المراجع العلمية المتاحة (مرجع/كتاب/مذكرة) تساعدنى فى التحصيل والفهم. 18. الوسائل التعليمية المستخدمة فى الشرح والايضاح تساعدنى كثيرا فى متابعة وفهم المادة العلمية. 19. تتنوع أنشطه التقويم للتحقق من قدراتى العملية واستيعابى للمادة العلمية. 20. يتم اطلاعى على أوراق امتحاناتى الفصلية للتعرف على اخطائى والتعلم منها . 21. أجد الدرجات التى حصلت عليها معبرة عن مستواى الفعلى. |

**6- Course Enhancement Suggestions**

1- Provide the student with the evaluation of the midterm exam with model answer.

2- Encourage student for asking and brain storming.

**7- Comments from external evaluator(s) (if exists)**

* There is no external evaluator

**8- What has been implemented of the development suggestions in the previous year?**

* Nothing.

**9- What has not been implemented of the suggestions (give reasons)?**

* Nothing.

**10- Action Plan for Next Academic Year:**

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| **NO.** | **Areas of development** | **Description of development** | **Development date** | **Person responsible** |
| 1 | Course | Course will include modern information's | Next academic year | Lecturer |
| 2 | Instructor | Instructor will encourage students for asking and brain storming | Next academic year | Lecturer |
| 3 | Book | References will be available at suitable time | Next academic year | Lecturer |

**Course Coordinator:** Prof. Dr. Samir Sobhy Ayad & Dr. Mohamed Hassan Shehata

**Head of Department:** Prof. Dr. Osama Ezzat Abdelatif

**Matrix of Final Exam Questions and ILO’s**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Title:** Fluid Mechanics (B) | | | | | |
| **Course Code:** MPE222 |  |  | |  |  |
| **Teaching Hours:** Lecture: 3 |  | Tutorial/Practical: 2 | Total: 5 |  |  |
| **Major or minor element of program:** Major | | |  |  |  |
| **Program on which the course is given:** B.Sc. Mechanical Power Engineering | | | |  |  |
| **Department offering the program:** Mechanical Engineering Department | | | |  |  |
| **Department offering the course:** Mechanical Engineering Department | | | |  |  |
| **Academic year / level:** 2014-2015 Second Year / Second Semester | | | |  |  |
| **Date of specifications approval:** 16/3/2010 | | | |  |  |

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| **Exam questions** | **a1** | **a2** | **a3** | **b1** | **b2** | **b3** |
| Q1 | ✓ |  |  |  |  | ✓ |
| Q2 |  |  | ✓ |  | ✓ | ✓ |
| Q3 |  |  | ✓ |  |  | ✓ |
| Q4 |  |  | ✓ |  |  | ✓ |
| Q5 | ✓ |  |  |  |  |  |
| Q6 |  | ✓ |  |  | ✓ |  |
| Q7 |  |  |  | ✓ |  |  |

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**Matrix of Teaching Assessment Methods and ILO’s**

|  |  |  |  |  |  |
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| **Teaching assessment method** | **a1** | **a2** | **a3** | **b1** | **b2** | **b3** | **c1** | **c2** | **c3** | **d1** | **d2** | **d3** |
| Assignments | ✓ | ✓ | ✓ | ✓ |  | ✓ | ✓ |  |  |  |  | ✓ |
| Quiz |  | ✓ | ✓ | ✓ | ✓ | ✓ |  | ✓ |  | ✓ | ✓ | ✓ |
| Midterm exam | ✓ | ✓ |  |  | ✓ | ✓ |  | ✓ | ✓ |  |  |  |
| Oral exam |  |  | ✓ |  |  |  | ✓ | ✓ |  |  |  |  |
| Final exam | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |  |  |  |  |  |  |

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