審査意見への対応を記載した書類（６月）

（目次）医歯学総合研究科
東京医科歯科大学・マヒドン大学国際連携医学系専攻（国際連携専攻）（Ｄ）

【教育課程等】

１．＜日本の学生に向けた適切な周知の必要性＞

国際連携専攻（JD）の趣旨に鑑み、日本・東京医科歯科大学の学生（医師）の進学意欲・希望を確保できるよう、例えば、タイ王国・マヒドン大学の持つ大規模な臨床データベースや、臨床フィールドワークの機会など、本専攻における日本の学生（医師）にとっての重要性・メリットを、適切かつ十分に周知すること。（改善事項）・・・・・1

２．＜シラバスの記述が不十分＞

シラバス（授業計画）について、「授業内容」の項目の記載が不十分であることで授業内容が不明確な科目が散見されるため、全ての科目のシラバスを確認し、必要に応じて記載を改めること。

また、「日時が明確でない講義については、適宜、担当教員に確認すること。」という記載は不適切なため改めること。

さらに、「成績評価の方法」においては、「授業への参加状況」など、授業等に参加したことだけをもって評価されるような記述の科目が散見されるが、成績評価の方法としては不適切であるため、併せて記載を改めること。

なお、本専攻においては全ての授業科目を英語で行う計画であることから、英語によるシラバスを添付すること。（是正事項）・・・・・・・・・・・・・・・・・・・・・・・3

（改善事項）医歯学総合研究科 東京医科歯科大学・マヒドン大学国際連携医学系専攻（国際連携専攻）（Ｄ）

【教育課程等】

１．＜日本の学生に向けた適切な周知の必要性＞ 国際連携専攻（JD）の趣旨に鑑み、日本・東京医科歯科大学の学生（医師）の進学意欲・希望を確保できるよう、例えば、タイ王国・マヒドン大学の持つ大規模な臨床データベースや、臨床フィールドワークの機会など、本専攻における日本の学生（医師）にとっての重要性・メリットを、適切かつ十分に周知すること。

（対応）

特に日本・東京医科歯科大学の学生（医師）の進学意欲・希望を確保できるよう、本専攻の特色である大規模な臨床データベースへのアクセスや、臨床フィールドワーク等、日本のみでは得難い機会を得られることを記載する。また、本専攻がグローバルな視点を持つ国際性豊かなプログラムであることについても大学院入試説明会をはじめ、さまざまな機会において周知する旨を記載する。

（新旧対照表）設置の趣旨を記載した書類（３８～３９ページ）

新	旧
９．入学者選抜の概要 **（４）周知方法等** 本専攻への進学検討者を増やし且つ進学意欲を高めるために、取得できる学位、修了要件、教育内容や教育方法、アカデミック・カレンダー、授業料等、本専攻に関する基本的情報を、両大学のホームページに掲載するとともに、ポスター等を用いて周知に努める。また、それぞれの大学における奨学金や福利厚生等の学生支援についても、それぞれの大学のホームページにて情報提供を行う。 本学においては、大学院入試説明会、初期研修医説明会、後期研修医説明会等の機会を積極的に活用し、マヒドン大学の持つ大規模な臨床データベースへのアクセスや日本のみでは経験することのできないタイおよび ASEAN 地域での臨床フィール	**９．入学者選抜の概要** **（４）周知方法等** 本専攻に入学を希望する者に対し、取得する学位、修了要件、教育内容や方法、アカデミックカレンダー、授業料、１ 単位当たりの授業時間、奨学金や福利厚生等の学生支援等について、募集要項や両大学のホームページに掲載し、十分な情報を事前に周知する。 ＜追加＞

ドワークの機会を得られること、国際的な教育研究又は臨床の場における指導的能力を醸成しうること、及び国際的なネットワークを構築しうることを説明し、本専攻のようなジョイント・ディグリー・プログラムが、グローバルな視点をもつ国際性豊かな医療人の育成を目指すメリットの大きなプログラムであることを周知する。 　他方、タイにおいては、マヒドン大学において大学院説明会の開催を行うとともに、タイならびに ASEAN 地域で開催される外科系学会において本専攻についての説明ブースを設け、がん研究・診療における集学的治療を牽引する医療人材の養成を目指すプログラムであることの周知に努める。	

（是正事項）医歯学総合研究科 東京医科歯科大学・マヒドン大学国際連携医学系専攻
（国際連携専攻）（Ｄ）

【教育課程等】

２．＜シラバスの記述が不十分＞
シラバス（授業計画）について、「授業内容」の項目の記載が不十分であることで授業内容が不明確な科目が散見されるため、全ての科目のシラバスを確認し、必要に応じて記載を改めること。
また、「日時が明確でない講義については、適宜、担当教員に確認すること。」という記載は不適切なため改めること。
さらに、「成績評価の方法」においては、「授業への参加状況」など、授業等に参加したことだけをもって評価されるような記述の科目が散見されるが、成績評価の方法としては不適切であるため、併せて記載を改めること。
なお、本専攻においては全ての授業科目を英語で行う計画であることから、英語によるシラバスを添付すること。

（対応）
授業内容の記載が明確になるよう記載内容をより詳細に修正する。ただし、以下の 13 科目については一般的な講義中心の科目とは性質が異なることから、それぞれ科目ごとに授業内容を項目立てて記載できない理由を以下に明記する。
また、シラバスにおける「日時が明確でない講義については、適宜、担当教員に確認すること。」という記載は適切な記載に改める。
さらに「成績評価の方法」については、全てのシラバスの成績評価方法について見直し、各評価項目の評価割合を記載し、明確化する。
英語のシラバスについては別紙のとおり添付する。（25～82 ページ参照）

（１）臨床基幹科目
①【臨床基幹科目Ⅰ】、②【臨床基幹科目Ⅱ】
「臨床基幹科目Ⅰ」及び「臨床基幹科目Ⅱ」は、外科系の専門知識、手技を学ぶ実践的な授業であり、その時期に遭遇する症例によって内容が構成されるため、各回それぞれの授業内容をあらかじめ記載することはできない。

（２）研究基幹科目
③【総合外科学特論】、④【消化管外科学特論】、⑤【肝胆膵外科学特論(TMDU)】、
⑥【頭頸部外科学特論】、⑦【腎泌尿器科外科学特論(TMDU)】、⑧【幹細胞制御特論】、
⑨【臨床解剖学特論】、⑩【発生再生生物学特論】、⑪【バイオメカニクス特論】、
⑫【臨床腫瘍学特論】
研究基幹科目は、講義、カンファレンス、演習、研究実習等、授業方法がほぼ統一さ

れている。しかし、この授業では、最新の論文の抄読会や、研究の進捗に合わせた発表等を通じて討論を行いながら進めるといった、実践的かつ先端的な内容を扱うため、年間を通じて各回それぞれの授業内容をあらかじめ記載することはできない。

（３）⑬【研究実践と論文作成】

学生の研究テーマや進捗に合わせて実施する科目であるため、それぞれの授業内容をあらかじめ記載することはできない。

（新旧対照表）シラバス

新	旧
臨床基幹科目Ⅰ(TMDU) ７．成績評価の方法 3分の2以上授業に参加した大学院生を成績評価対象者とし、カンファレンスでの担当症例のプレゼンテーション（50%）、経験症例に対する質疑応答、課題レポート（50%）を総合的に評価する。	臨床基幹科目Ⅰ(TMDU) ７．成績評価の方法 成績評価は、参加状況（５０%）と課題レポート内容やカンファレンスでのプレゼンテーション（５０%）を総合して評価する。
臨床基幹科目Ⅰ(TMDU)の英語のシラバス 別紙参照	＜追加＞
臨床基幹科目Ⅱ ７．成績評価の方法 3分の2以上授業に参加した大学院生を成績評価対象者とし、カンファレンスでの担当症例のプレゼンテーション（50%）、経験症例に対する質疑応答、課題レポート（50%）を総合的に評価する。	臨床基幹科目Ⅱ ７．成績評価の方法 成績評価は、参加状況（５０%）と課題レポート内容やカンファレンスでのプレゼンテーション（５０%）を総合して評価する。
臨床基幹科目Ⅱの英語のシラバス 別紙参照	＜追加＞
疾患予防パブリックヘルス医学概論 ６．授業内容 1 グローバルヘルスにおける実装医科学総論（１） 2 グローバルヘルスにおける実装医科学総論（２） 3 ヘルスプロモーションとは（１）	疾患予防パブリックヘルス医学概論 ６．授業内容 ・ グローバルヘルスにおける実装医科学総論 ・ 熱帯病予防

4 ヘルスプロモーションとは（２） 5 熱帯病における予防と診断（１） 6 熱帯病における予防と診断（２） 7 感染症における疫学と予防（１） 8 感染症における疫学と予防（２） 9 国際医学研究における研究倫理について（１） 10 国際医学研究における研究倫理について（２） 11 最新のがん疫学とがん予防（１） 12 最新のがん疫学とがん予防（２） 13 生活習慣病予防と実装科学（１） 14 生活習慣病予防と実装科学（２） 15 疾患予防の研究、データサイエンス医学、実装医科学、診療、地域実践、政策領域における国際的なリーダーシップの発揮について（１） 16 疾患予防の研究、データサイエンス医学、実装医科学、診療、地域実践、政策領域における国際的なリーダーシップの発揮について（２）	・ 感染症予防 ・ ヘルスプロモーション ・ がん予防 ・ 生活習慣病予防 ・ 医学研究倫理 ・ リーダーシップ
７．成績評価の方法 対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）（30%）、小テスト（30%）、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴)により学修を行った場合は、視聴後に授業内容の理解度を計るため、ビデオ視聴によるElearningで確認テストを行い、合格したものを出席とみなす。授業で行われた討論に対するレポート（30%）、小テスト（30%）、課題レポート（40%）により総合的に評価する。	７．成績評価の方法 授業への参加状況、グループワークにおける参加状況、およびレポートに基づいて総合的に評価を行う。

疾患予防パブリックヘルス医学概論の英語のシラバス 別紙参照	＜追加＞
疫学 ６．授業内容 1 講義「疫学のアプローチと進化、疾患発生の頻度の測定」（１） 2 講義「疫学のアプローチと進化、疾患発生の頻度の測定」（２） 3 ケーススタディとグループアクティビティ「疫学のアプローチと進化、疾患発生頻度の測定」（１） 4 ケーススタディとグループアクティビティ「疫学のアプローチと進化、疾患発生頻度の測定」（２） 5 講義「疫学研究の種類、人を対象とする医学系研究に関する倫理指針」（１） 6 講義「疫学研究の種類、人を対象とする医学系研究に関する倫理指針」（２） 7 ケーススタディとグループアクティビティ「疫学研究の種類、人を対象とする医学系研究に関する倫理指針」（１） 8 ケーススタディとグループアクティビティ「疫学研究の種類、人を対象とする医学系研究に関する倫理指針」（２） 9 講義「効果の測定と因果推論」（１） 10 講義「効果の測定と因果推論」（２） 11 ケーススタディとグループアクティビティ「効果の測定と因果推論」（１） 12 ケーススタディとグループアクティビティ「効果の測定と因果推論」（２） 13 講義「健康政策の評価、スクリーニング検査、感染症疫学、遺伝疫学」（１） 14 講義「健康政策の評価、スクリーニング検査、感染症疫学、遺伝疫学」（２） 15 ケーススタディとグループアクティビティ「健康政策の評価、スクリーニング検	疫学 ６．授業内容 ・ 講義：疫学のアプローチと進化、疾患発生の頻度の測定 ・ ケーススタディとグループアクティビティ：疫学のアプローチと進化、疾患発生頻度の測定 ・ 講義：疫学研究の種類、人を対象とする医学系研究に関する倫理指針 ・ ケーススタディとグループアクティビティ：疫学研究の種類、人を対象とする医学系研究に関する倫理指針 ・ 講義：効果の測定と因果推論 ・ ケーススタディとグループアクティビティ：効果の測定と因果推論 ・ 講義：健康政策の評価、スクリーニング検査、感染症疫学、遺伝疫学 ・ ケーススタディとグループアクティビティ：健康政策の評価、スクリーニング検

査、感染症疫学、遺伝疫学」（１） 16 ケーススタディとグループアクティビティ「健康政策の評価、スクリーニング検査、感染症疫学、遺伝疫学」（２） ７．成績評価の方法 対面講義（一部ライブ配信も含む）では、3 分の 2 以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）（30%）、小テスト（30%）、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴）により学修を行った場合は、視聴後に授業内容の理解度を計るため、ビデオ視聴による Elearning で確認テストを行い、合格したものを出席とみなす。授業で行われた討論に対するレポート（30%）、小テスト（30%）、課題レポート（40%）により総合的に評価する。	査、感染症疫学、遺伝疫学 ７．成績評価の方法 授業への参加状況、小テスト、レポートに基づいて評価する。 ・授業への参加状況　20% ・小テスト　30% ・レポート　50%
疫学の英語のシラバス 別紙参照	＜追加＞
臨床・遺伝統計学 ６．授業内容 1 講義「データの示し方、数値データの集計方法」（１） 2 講義「データの示し方、数値データの集計方法」（２） 3 講義「確率と診断テスト、理論的確率分布」（１） 4 講義「確率と診断テスト、理論的確率分布」（２） 5 講義「平均値のサンプリング分布、信頼区間」（１） 6 講義「平均値のサンプリング分布、信頼区間」（２） 7 講義「仮説検定、二つの平均値の比較」	臨床・遺伝統計学 ６．授業内容 ・講義：データの示し方；数値データの集計法 ・講義：確率と診断テスト；理論的確率分布 ・講義：平均値の標本分布；信頼区間 ・演習 ・講義： 仮説検定；2 つの平均値の比較 ・演習 ・講義：分散の分析；ノンパラメトリック手法 ・演習 ・講義：プロポーションに関する推論分割表 2×2 テーブル研究室セッション

（１） 8 講義「仮説検定、二つの平均値の比較」（２） 9 肺癌治療（１） 10 肺癌治療（２） 11 講義「プロポーションに関する推論分割表 2X2 テーブル」（１） 12 講義「プロポーションに関する推論分割表 2X2 テーブル」（２） 13 講義「相関関係、線形回帰（単回帰）分析、多重回帰分析」（１） 14 講義「相関関係、線形回帰（単回帰）分析、多重回帰分析」（２） 15 講義「ロジスティック回帰分析」 16 総合講義 ７．成績評価の方法 対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）（30%）、小テスト（30%）、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴)により学修を行った場合は、視聴後に授業内容の理解度を計るため、ビデオ視聴による Elearning で確認テストを行い、合格したものを出席とみなす。授業で行われた討論に対するレポート（30%）、小テスト（30%）、課題レポート（40%）により総合的に評価する。	・ 講義：相関関係；線形回帰（単回帰）分析；多重回帰分析 ・ 演習 ・ 講義：ロジスティック回帰 ・ 期末試験 ７．成績評価の方法 授業への参加状況、宿題、筆記試験に基づいて評価する。 ・授業への参加状況 20% ・宿題 30% ・筆記試験 50%
臨床・遺伝統計学の英語のシラバス 別紙参照	＜追加＞
がん生物学・解剖学・病理特論 ６．授業内容 1 胸腹部ならびに骨盤部癌の臨床解剖 2 癌の異型度と悪性度 3 癌の化学療法における病理診断の役割	がん生物学・解剖学・病理特論 ６．授業内容 ・ 講義形式による。 ・ 上記目的に応じた生物学、解剖学、病理学の専門家による講義を行う。

4 早期癌と進行癌 5 癌の発生部位と多様性 6 がん細胞の生化学的特徴 7 がんと細胞周期 8 遺伝性がん 9 がん細胞の特性 10 がん遺伝子とがん抑制遺伝子 ７．成績評価の方法 対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）(30%)、小テスト（30%)、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴)により学修を行った場合は、視聴後に授業内容の理解度を計るため、ビデオ視聴によるE-learning で確認テストを行い、合格したものを出席とみなす。授業で行われた討論に対するレポート（30%)、小テスト（30%)、課題レポート（40%）により総合的に評価する。	７．成績評価の方法 討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。
がん生物学・解剖学・病理特論の英語のシラバス 別紙参照	＜追加＞
低侵襲がん治療Ⅰ ６．授業内容 1 大腸疾患（１） 2 大腸疾患（２） 3 肝胆膵癌の低侵襲治療（１） 4 肝胆膵癌の低侵襲治療（２） 5 泌尿器科低侵襲手術（１） 6 泌尿器科低侵襲手術（２） 7 食道癌に対する低侵襲治療（１） 8 食道癌に対する低侵襲治療（２） 9 肺癌治療（１） 10 肺癌治療（２）	低侵襲がん治療Ⅰ ６．授業内容 ・ 講義形式による。 ・ 下記疾患についての外科的低侵襲治療についての講義を行う。 食道疾患 大腸疾患 肝胆膵疾患 呼吸器疾患 泌尿器疾患

７．成績評価の方法 　対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）(30%)、小テスト（30%)、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴)により学修を行った場合は、視聴後に授業内容の理解度を計るため、ビデオ視聴によるE-learningで確認テストを行い、合格したものを出席とみなす。授業で行われた討論に対するレポート（30%)、小テスト（30%)、課題レポート（40%）により総合的に評価する。	７．成績評価の方法 　討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。
低侵襲がん治療Ⅰの英語のシラバス 別紙参照	＜追加＞
低侵襲がん治療Ⅱ ６．授業内容 1 定位照射（１） 2 定位照射（２） 3 大学病院における放射線治療（１） 4 大学病院における放射線治療（２） 5 大腸がんにおける抗癌剤と手術の併用（１） 6 大腸がんにおける抗癌剤と手術の併用（２） 7 陽子線治療（１） 8 陽子線治療（２） 9 子宮がん･前立腺がんの放射線治療(１) 10 子宮がん・前立腺がんの放射線治療（２） ７．成績評価の方法 　対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参	低侵襲がん治療Ⅱ ６．授業内容 ・ 講義形式による。 ・ 下記内容についての講義を行う。 定位照射 陽子線治療 大腸がんにおける薬物療法と手術の併用 前立腺がんにおける放射線治療 放射線治療の実際 ７．成績評価の方法 　討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。

加、プレゼンテーション等）（30%）、小テスト（30%）、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴）により学修を行った場合は、視聴後に授業内容の理解度を計るため、ビデオ視聴によるE-learningで確認テストを行い、合格したものを出席とみなす。授業で行われた討論に対するレポート（30%）、小テスト（30%）、課題レポート（40%）により総合的に評価する。	
低侵襲がん治療Ⅱの英語のシラバス 別紙参照	＜追加＞
臓器別がん ６．授業内容 1 泌尿器癌（１） 2 泌尿器癌（２） 3 婦人科がん（子宮・卵巣）（１） 4 婦人科がん（子宮・卵巣）（２） 5 乳がん（１） 6 乳がん（２） 7 肺癌各論(内科編)（１） 8 肺癌各論(内科編)（２） 9 胃癌（１） 10 胃癌（２） ７．成績評価の方法 対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）（30%）、小テスト（30%）、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴）により学修を行った場合は、視聴後に授業内容の理解度を計るため、ビデオ視聴によるE-learningで確認テストを行い、合格したものを出席とみなす。授業で行われた討論に対するレポー	臓器別がん ６．授業内容 ・ 講義形式による。 ・ 各臓器のがん（食道、胃、乳腺、泌尿器、婦人科）について、診断・治療について概説する。 ・ 小児・希少がん診療の講義と併せて組み立てられている。 ７．成績評価の方法 討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。

ト（30%）、小テスト（30%）、課題レポート（40%）により総合的に評価する。	
臓器別がんの英語のシラバス 別紙参照	＜追加＞
小児・希少がん ６．授業内容 1 小児がん（１） 2 小児がん（２） 3 脳腫瘍（１） 4 脳腫瘍（２） 5 肝胆膵がんについて（１） 6 肝胆膵がんについて（２） 7 頭頸部癌の基礎から応用まで（１） 8 頭頸部癌の基礎から応用まで（２） 9 皮膚悪性腫瘍（１） 10 皮膚悪性腫瘍（２） ７．成績評価の方法 対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）（30%）、小テスト（30%）、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴)により学修を行った場合は､視聴後に授業内容の理解度を計るため、ビデオ視聴によるE-learning で確認テストを行い､合格したものを出席とみなす｡授業で行われた討論に対するレポート（30%）、小テスト（30%）、課題レポート（40%）により総合的に評価する。	小児・希少がん ６．授業内容 ・ 講義形式による。 ・ 小児・希少がん（頭頸部、皮膚、肝胆膵、脳腫瘍）の診断・治療について概説する。 ・ 臓器別がん診療の講義と併せて組み立てられている。 ７．成績評価の方法 討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。
小児・希少がんの英語のシラバス 別紙参照	＜追加＞
臨床腫瘍学 ６．授業内容 1 骨転移の診断、治療、チーム医療の重要	臨床腫瘍学 ６．授業内容 ・ 講義形式による。

性（１） 2 骨転移の診断、治療、チーム医療の重要性（２） 3 大腸癌化学療法の実際～最適な治療を目指して（１） 4 大腸癌化学療法の実際～最適な治療を目指して（２） 5 造血器腫瘍に対する治療の現状（１） 6 造血器腫瘍に対する治療の現状（２） 7 食道癌の診断と治療（１） 8 食道癌の診断と治療（２） 9 緩和腫瘍学概論（１） 10 緩和腫瘍学概論（２） ７．成績評価の方法 対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）(30%)、小テスト（30%)、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴)により学修を行った場合は､視聴後に授業内容の理解度を計るため、ビデオ視聴によるE-learning で確認テストを行い､合格したものを出席とみなす｡授業で行われた討論に対するレポート（30%)、小テスト（30%)、課題レポート（40%）により総合的に評価する。	・ 臓器別がん診療において、特に薬物療法を中心に進歩している分野（肺、大腸、血液、骨軟部腫瘍についての講義を行う。 ・ がんゲノム、臓器別がん診療と併せて受講するとより効果的である。 ７．成績評価の方法 討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。
臨床腫瘍学の英語のシラバス 別紙参照	＜追加＞
がんゲノム ６．授業内容 ・ 下記の内容を中心に講義を行う。 遺伝子・ゲノム変異の基礎 次世代シークエンサーの基礎 NGS 解析データのアノテーションとキュ	がんゲノム ６．授業内容 ・ 講義形式による。 ・ 下記の内容を中心に講義を行う。 遺伝子・ゲノム変異の基礎 次世代シークエンサーの基礎 NGS 解析データのアノテーションとキュ

レーション ゲノム医療実現への現状と課題 1 次世代シークエンサーの基礎（１） 2 次世代シークエンサーの基礎（２） 3 遺伝・ゲノム変異の基礎（１） 4 遺伝・ゲノム変異の基礎（２） 5 がんゲノム医療の基礎（１） 6 がんゲノム医療の基礎（２） 7 がん遺伝子パネル検査におけるデータ解析（１） 8 がん遺伝子パネル検査におけるデータ解析（２） 9 がんゲノムプロファイリング検査の臨床実装について（１） 10 がんゲノムプロファイリング検査の臨床実装について（２） ７．成績評価の方法 対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）(30%)、小テスト（30%)、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴)により学修を行った場合は､視聴後に授業内容の理解度を計るため、ビデオ視聴によるE-learning で確認テストを行い､合格したものを出席とみなす｡授業で行われた討論に対するレポート（30%)、小テスト（30%)、課題レポート（40%）により総合的に評価する。	レーション ゲノム医療実現への現状と課題 ＜追加＞ ７．成績評価の方法 討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。
がんゲノムの英語のシラバス 別紙参照	＜追加＞
緩和ケア・緩和医療学 ６．授業内容 ・ 下記疾患についての緩和医療について	緩和ケア・緩和医療学 ６．授業内容 ・ 講義形式による。 ・ 下記疾患についての緩和医療について

の講義を行う。 緩和医療概論 身体症状のアセスメントとマネジメント がん診療におけるコミュニケーション 1 緩和医療概論（１） 2 緩和医療概論（２） 3 サイコオンコロジー（精神腫瘍学）総論（１） 4 サイコオンコロジー（精神腫瘍学）総論（２） 5 緩和ケア病棟における身体症状へのアプローチ（１） 6 緩和ケア病棟における身体症状へのアプローチ（２） 7 在宅緩和ケア総論（１） 8 在宅緩和ケア総論（２） 9 緩和ケアにおけるコミュニケーション（１） 10 緩和ケアにおけるコミュニケーション（２） ７．成績評価の方法 対面講義(一部ライブ配信も含む)では、3分の2以上授業に参加した大学院生を成績評価対象者とし、受講態度（議論への参加、プレゼンテーション等）(30%)、小テスト（30%)、課題レポート（40%）を総合的に評価する。なお、E-learning（ライブ配信及びビデオ視聴)により学修を行った場合は､視聴後に授業内容の理解度を計るため、ビデオ視聴によるE-learning で確認テストを行い､合格したものを出席とみなす｡授業で行われた討論に対するレポート（30%)、小テスト（30%)、課題レポート（40%）により総合的に評価する。	の講義を行う。 緩和医療概論 身体症状のアセスメントとマネジメント がん診療におけるコミュニケーション ＜追加＞ ７．成績評価の方法 討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。
緩和ケア・緩和医療学の英語のシラバス 別紙参照	＜追加＞

総合外科学特論 ６．授業内容 悪性疾患に対する治療方針の確立に重要である消化器癌の発生機序や進展様式を病理組織学的、分子生物学的に概説する。また、消化器癌に対する手術により生じる機能障害や消化吸収機能の脱落などの発生機序を理解するために必要な知識を解剖学的･生理学的に解説する。さらに、難治である再発癌や切除不能癌に対する有効な治療法を集学的立場から解説する。 なお、症例検討会、カンファレンス、リサーチプログレスミーティング、抄読会、大学院講義、大学院特別講義については、年度当初に発表される日程を確認すること。 ７．成績評価の方法 授業への参加状況(専門分野の知識の理解度や発表および質疑応答の内容)(50%)、及び研究への関与の程度（50%）を総合的に評価する。	総合外科学特論 ６．授業内容 日時が明確でない講義については、適宜、担当教員に確認すること。 悪性疾患に対する治療方針の確立に重要である消化器癌の発生機序や進展様式を病理組織学的、分子生物学的に概説する。また､消化器癌に対する手術により生じる機能障害や消化吸収機能の脱落などの発生機序を理解するために必要な知識を解剖学的・生理学的に解説する。さらに、難治である再発癌や切除不能癌に対する有効な治療法を集学的立場から解説する。 参加可能プログラム 大学院講義 随時 大学院特別講義 随時 大学院セミナー 随時 抄読会、研究発表 診療科による ７．成績評価の方法 １）カンファレンスへの参加状況 ２）研究発表および学会発表内容 ３）論文（英文）の内容 １)、２)、３）から総合的に評価する。
総合外科学特論の英語のシラバス 別紙参照	＜追加＞
消化管外科学特論 ６．授業内容 診断および治療が困難で専門性の高い消化管疾患の診断･治療法を研究開発するとともに､その成果を一般外科学領域の医療現場と社会へ還元し､国民医療の向上を図ることを目的とする。また、消化管外科および一般外科領域の診療に携わる次世代の医師を重点的・積極的に育成するため、関連領域を含め包括的に教育・研究活	消化管外科学特論 ６．授業内容 診断および治療が困難で専門性の高い消化管疾患の診断･治療法を研究開発するとともに､その成果を一般外科学領域の医療現場と社会へ還元し､国民医療の向上を図ることを目的とする。また、消化管外科および一般外科領域の診療に携わる次世代の医師を重点的・積極的に育成するため、関連領域を含め包括的に教育・研究活

動を行う。 具体的な教育内容は、以下のとおりである。 術前・術後カンファレンス 毎週月・木曜日 7：30－8：30 抄読会・研究発表会，講義・セミナー 毎週火曜日 18:00-19：00 なお、大学院講義、大学院特別講義については、年度当初に発表される日程を確認すること。 ７．成績評価の方法 授業への参加状況(専門分野の知識の理解度や発表および質疑応答の内容)(50%)、及び研究への関与の程度（50%）を総合的に評価する。	動を行う。具体的な教育内容は、以下のとおりである。 参加可能プログラム 術前・術後カンファランス 毎週月・木曜日 7：30－8：30 抄読会・研究発表会，講義・セミナー 毎週火曜日 18:00-19：00 ７．成績評価の方法 講義、カンファレンス、演習、研究実習への出席（参加）状況及び研究内容（研究レポートあるいは学会発表の内容等)に基づいて総合的に評価する。
消化管外科学特論の英語のシラバス 別紙参照	＜追加＞
肝胆膵外科学特論(TMDU) ６．授業内容 消化器系臓器、とくに肝、胆、膵の癌の発生、増殖、浸潤、転移に関する分子生物学的機構を解説し分子標的治療への展開を解説する。さらに、その診断と治療についての一般的及び先端的研究について解説する。肝移植の臨床、研究についても解説する。 肝胆膵カンファレンス 毎週月曜日 午後6 時－8 時 抄読会 毎週水曜日 午前 8 時－8 時 45	肝胆膵外科学特論(TMDU) ６．授業内容 日時が明確でない講義については、適宜、担当教員に確認すること。 消化器系臓器、とくに肝、胆、膵の癌の発生、増殖、浸潤、転移に関する分子生物学的機構を解説し分子標的治療への展開を解説する。さらに、その診断と治療についての一般的及び先端的研究について解説する。肝移植の臨床、研究についても解説する。 参加可能プログラム 大学院講義 随時 大学院特別講義 随時 大学院セミナー 随時 肝胆膵カンファレンス 毎週月曜日 午後6 時－8 時 抄読会 毎週水曜日 午前 8 時－8 時 45

分 なお、症例検討会、リサーチプログレスミーティング、大学院講義、大学院特別講義について ては、年度当初に発表される日程を確認すること。 ７．成績評価の方法 授業への参加状況(専門分野の知識の理解度や発表および質疑応答の内容)(50%)、及び研究への関与の程度（50%）を総合的に評価する。	分 ７．成績評価の方法 討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。加えて、研究内容、各種研究や研究会議への関与の程度、学会発表の回数等に基づいて総合的な評価を行う。
肝胆膵外科学特論(TMDU)の英語のシラバス 別紙参照	＜追加＞
頭頸部外科学特論 ６．授業内容 頭頸部外科学の対象は、頭蓋内および眼窩内を除く頭部および頸部の領域の腫瘍である。この領域の各部位に発生する腫瘍の特徴、発生機序について解説する。また、各部位ごとに様々な病態を呈する腫瘍に対する治療法について解説する。 耳鼻咽喉科・頭頸部外科合同カンファレンス 毎週火曜日 7:45～9:00 なお、リサーチプログレスミーティング及び抄読会、大学院講義、大学院特別講義については、年度当初に発表される日程を確認すること。	頭頸部外科学特論 ６．授業内容 日時が明確でない講義については、適宜、担当教員に確認すること。 頭頸部外科学の対象は、頭蓋内および眼窩内を除く頭部および頸部の領域の腫瘍である。この領域の各部位に発生する腫瘍の特徴、発生機序について解説する。また、各部位ごとに様々な病態を呈する腫瘍に対する治療法について解説する。 参加可能プログラム 大学院講義 不定期開催、大学院特別講義 不定期開催 耳鼻咽喉科・頭頸部外科合同カンファレンス 毎週火曜日 7:45～9:00

７．成績評価の方法 　授業への参加状況(専門分野の知識の理解度や発表および質疑応答の内容)(50%)、及び研究への関与の程度（50%）を総合的に評価する。	７．成績評価の方法 　講義への参加状況や発表・発言等といった参加状況を判断して評価する。加えて、研究内容の外部発表（学会、論文）や研究会議への関与の状況等に基づいて総合的な評価を行う。
頭頸部外科学特論の英語のシラバス 別紙参照	＜追加＞
腎泌尿器外科学特論(TMDU) ６．授業内容 　腎・尿路系および精巣・精路系は自律神経、体性神経および内分泌系により巧妙に調節、統合されている。この調節システムについて解説し、さらに同システムの破綻に伴い起こりうる症状・疾患群を系統的に解説する。また、泌尿生殖器腫瘍の発生機序および治療法、特に治療に伴う有害事象を軽減する低侵襲治療法について解説する。 教室検討会 毎週木曜日 17：00－18：00 症例検討会 毎週木曜日 7：00－9：00 なお、抄読会、大学院講義、大学院特別講義については、年度当初に発表される日程を確認すること。 ７．成績評価の方法 　授業への参加状況(専門分野の知識の理解度や発表および質疑応答の内容)(50%)、及び研究への関与の程度（50%）を総合的に評価する。	腎泌尿器外科学特論(TMDU) ６．授業内容 　日時が明確でない講義については、適宜、担当教員に確認すること。 　腎・尿路系および精巣・精路系は自律神経、体性神経および内分泌系により巧妙に調節、統合されている。この調節システムについて解説し、さらに同システムの破綻に伴い起こりうる症状・疾患群を系統的に解説する。また、泌尿生殖器腫瘍の発生機序および治療法、特に治療に伴う有害事象を軽減する低侵襲治療法について解説する。 参加可能プログラム 大学院講義 毎週月曜日 7:00-8:00 ７．成績評価の方法 　討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。研究内容、各種研究や研究会議への関与の程度、学会発表の回数、論文発表の回数等に基づいて総合的な評価を行う。加えて、手術の術前評価、実践の参画状況も評価事項とする。
腎泌尿器外科学特論(TMDU)の英語のシラバス	＜追加＞

別紙参照	
幹細胞制御特論 ６．授業内容 組織の発生と修復を理解する上で、それぞれの組織を構成する多細胞集団を生み出すもととなる組織特異的幹細胞の制御機構を学ぶことは重要な意義がある。当分野の特論においては、主として中枢神経系や造血系、その他の組織特異的幹細胞だけでなく、腫瘍における幹細胞（癌幹細胞）も対象として、幹細胞制御について学ぶ。その際、増殖分化因子群等を介した細胞外来性シグナルと、エピジェネティック修飾等に基づく細胞内在性プログラムなど多角的観点から取り組む。 リサーチミーティング 毎週金曜日 15:00～16：30 なお、大学院講義、大学院特別講義については、年度当初に発表される日程を確認すること。 ７．成績評価の方法 授業への参加状況（専門分野の知識の理解度や発表および質疑応答の内容）（50%）、及び研究への関与の程度（50%）を総合的に評価する。	幹細胞制御特論 ６．授業内容 組織の発生と修復を理解する上で、それぞれの組織を構成する多細胞集団を生み出すもととなる組織特異的幹細胞の制御機構を学ぶことは重要な意義がある。当分野の特論においては、主として中枢神経系や造血系、その他の組織特異的幹細胞だけでなく、腫瘍における幹細胞（癌幹細胞）も対象として、幹細胞制御について学ぶ。その際、増殖分化因子群等を介した細胞外来性シグナルと、エピジェネティック修飾等に基づく細胞内在性プログラムなど多角的観点から取り組む。 参加可能プログラム リサーチミーティング 毎週金曜日 15:00～16：30 （日時については、念のため担当教員に確認すること） ７．成績評価の方法 参加状況や、発表・発言等の参画状況、レポート等に基づいて、総合的な評価を行う。
幹細胞制御特論の英語のシラバス 別紙参照	＜追加＞
臨床解剖学特論 ６．授業内容 医療における診断・治療の際に解剖学的知識は重要である。人体の構造を多角的に見て、理解するための基礎となる解剖学的	臨床解剖学特論 ６．授業内容 日時が明確でない講義については、適宜、担当教員に確認すること。 医療における診断・治療の際に解剖学的知識は重要である。人体の構造を多角的に見て、理解するための基礎となる解剖学的

地図の解説、ならびに人体構造の基本構成についての解説をおこなう。また、空間的配置の理解のための理論的基盤としての比較解剖学、発生学についても解説する。同時に、臨床診断・治療における解剖学的基盤としての臨床解剖学・局所解剖学的な見方も随所に取り上げ、リンパ系、自律神経系、筋膜系、中枢神経系の解剖学についても解説する。 なお、リサーチプログレスミーティング及び論文抄読会、大学院講義、大学院特別講義については、年度当初に発表される日程を確認すること。 ７．成績評価の方法 授業への参加状況（専門分野の知識の理解度や発表および質疑応答の内容）（50%）、及び研究への関与の程度（50%）を総合的に評価する。	地図の解説、ならびに人体構造の基本構成についての解説をおこなう。また、空間的配置の理解のための理論的基盤としての比較解剖学、発生学についても解説する。同時に、臨床診断・治療における解剖学的基盤としての臨床解剖学・局所解剖学的な見方も随所に取り上げ、リンパ系、自律神経系、筋膜系、中枢神経系の解剖学についても解説する。 大学院講義 第３木曜日 17 時－19 時 ７．成績評価の方法 討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。加えて、研究内容、各種研究や研究会議への関与の程度、学会発表の回数等に基づいて総合的な評価を行う。
臨床解剖学特論の英語のシラバス 別紙参照	＜追加＞
発生再生生物学特論 ６．授業内容 本分野の研究に必要な発生工学、遺伝学、細胞生物学、分子生物学、生化学などの幅広い手法を習得する。また、関連原著論文を読み、論理的な思考の獲得に努める。 発生再生生物学セミナー 毎週木曜日 10:00–12:00 なお、論文抄読会、大学院講義、大学院特別講義、大学院セミナーについては、年度当初に発表される日程を確認すること。	発生再生生物学特論 ６．授業内容 本分野の研究に必要な発生工学、遺伝学、細胞生物学、分子生物学、生化学などの幅広い手法を習得する。また、関連原著論文を読み、論理的な思考の獲得に努める。 日時が明確でない講義については、適宜、担当教員に確認すること。 発生再生生物学セミナー 毎週木曜日 10:00–12:00

７．成績評価の方法 　授業への参加状況(専門分野の知識の理解度や発表および質疑応答の内容)(50%)、及び研究への関与の程度（50%）を総合的に評価する。	７．成績評価の方法 　講義への参加状況（２０%）及び研究内容（８０%）に基づいて総合的に評価を行う。
発生再生生物学特論の英語のシラバス 別紙参照	＜追加＞
バイオメカニクス特論 ６．授業内容 　バイオメカニクスを基盤とした医療機器の設計方法と制御技術を学ぶ。研究者や技術開発者から設計や制御の実例を聞き、質疑応答を通して医療機器設計開発の基礎を身につける。また、手術支援ロボットの評価に必要なリスク分析や統計解析の基礎を修得する。 ゼミ 月曜日 14:00-16:00 なお、論文査読会、大学院講義、大学院特別講義、大学院セミナーについては、年度当初に発表される日程を確認すること。 ７．成績評価の方法 　授業への参加状況(専門分野の知識の理解度や発表および質疑応答の内容)(50%)、及び研究への関与の程度（50%）を総合的に評価する。	バイオメカニクス特論 ６．授業内容 　バイオメカニクスを基盤とした医療機器の設計方法と制御技術を学ぶ。研究者や技術開発者から設計や制御の実例を聞き、質疑応答を通して医療機器設計開発の基礎を身につける。また、手術支援ロボットの評価に必要なリスク分析や統計解析の基礎を修得する。 ゼミ 月曜日 14:00-16:00、 輪講 随時、大学院講義 随時、大学院特別講義 随時、大学院セミナー 随時 ７．成績評価の方法 　講義への参加状況及び発表と研究レポートに基づいて評価を行う。加えて、研究内容、各種研究への関与程度等に基づき総合的な評価を行う。
バイオメカニクス特論の英語のシラバス 別紙参照	＜追加＞
臨床腫瘍学特論 ６．授業内容 　従来の臓器ごとのがん診療のみならず、生物学的特性や臨床および社会医学、人文学的な側面も含めた横断的ながん診療にあたることができることを目的とする。特	臨床腫瘍学特論 ６．授業内容 　日時が明確でない講義については、適宜、担当教員に確認すること。 　従来の臓器ごとのがん診療のみならず、生物学的特性や臨床および社会医学、人文学的な側面も含めた横断的ながん診療にあたることができることを目的とする。特

に、緩和医療学、がん化学療法を中心に、地域連携やチーム医療などについても教育し、将来の包括的がん診療をリードする人材の育成を目指す。 なお、リサーチプログレスミーティング及び論文抄読会については、年度当初に発表される日程を確認すること。 各種カンファレンス（月曜日 17 時：緩和ケアチームカンファレンス、毎週木曜日 18 時～ 19 時のキャンサーボード=第 3 週、ゲノムキャンサーボード=1,2,4 週）。 ７．成績評価の方法 授業への参加状況（専門分野の知識の理解度や発表および質疑応答の内容）（50%）、及び研究への関与の程度（50%）を総合的に評価する。	に、緩和医療学、がん化学療法を中心に、地域連携やチーム医療などについても教育し、将来の包括的がん診療をリードする人材の育成を目指す。 各種カンファレンス（月曜日 17 時：緩和ケアチームカンファレンス、毎週木曜日 18 時～ 19 時のキャンサーボード=第 3 週、ゲノムキャンサーボード=1,2,4 週）。 ７．成績評価の方法 討議、議論への参加状況や、発表・発言等といった参画状況を判断して評価する。加えて、研究内容、各種研究や研究会議への関与の程度、学会発表の回数等に基づいて総合的な評価を行う。（演習、研究実習への参加状況：70%、外部発表（学会、研究会、論文など）：30%）
臨床腫瘍学特論の英語のシラバス 別紙参照	＜追加＞
研究実践と論文作成（TMDU）の英語のシラバス 別紙参照	＜追加＞

Clinical Core Subject I (TMDU)

(Code: ●●●●, 1st year, 2 units)

1. Instructors

Name	Position	Department	Contact Information
Minoru Tanabe	Chief Instructor / Professor	Department of Hepatobiliary and Pancreatic Surgery	tana.msrg@tmd.ac.jp
Hiroyuki Uetake	Professor	Department of Specialized Surgeries	h-uetake.srg2@tmd.ac.jp
Yusuke Kinugasa	Professor	Department of Gastrointestinal Surgery	kinugasa.srg1@tmd.ac.jp
Takahiro Asakage	Professor	Department of Head and Neck Surgery	tasakage.hns@tmd.ac.jp
Yasuhisa Fujii	Professor	Department of Urology	y- fujii.uro@tmd.ac.jp

2. Classroom/Lab Lecture

Designated by each instructor

3. Aims of the Course

[Objectives]

To have participants obtain most advanced knowledge and skills in each field of surgical medicine. To have participants acquire knowledge needed to choose oncologically appropriate treatment and surgical techniques for each organ cancer.

[Description]

Participate in clinical practices and conferences for each specialty field of surgical medicine.

4. Course Objectives

The participants learn a number of new diagnostic and treatment methods in each specialty field of surgical medicine in order to enhance clinical capabilities as a surgeon.

5. Format

The classes will be conducted in forms of seminars, conference presentations, and discussions. Practical experience with actual cases is obtained in operation rooms and other clinical situations.

6. Class Detail

- In weekly seminars, the participants will obtain most current knowledge on advanced diagnosis, treatment and other topics in each specialty field of surgical medicine.
- In weekly conferences held before and after a surgery, the participants will learn standard practices and advanced treatments. They make presentations on the cases they experienced and enhance experience through questions/answers and discussions.
- In laboratories and outpatient departments, the participants will experience standard practices and advanced treatments, after which they will write reports on the experience.
- The participants will learn about most advanced surgeries through observation in the operation rooms and in other opportunities as often as possible and write reports on the experience to enhance their experience.

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of classes will be made. It will comprise presentation of cases they have been assigned at conferences (50%) and Q&A and reporting assignments for cases they have experienced (50%).

8. Prerequisite Reading

When participating in each round, there are specific instructions on matters to prepare.

9. Reference Materials

Required literature etc. will be presented in preparation and prepare thoroughly.

10. Important Course Requirements

Since this subject is required to positively discuss and learn, etc., participate as much as possible.

11. Availability in English

All classes are given in English.

12. Office Hours

Please contact chief instructor and associate instructor.

13. Note(s) to Students

Nothing in particular.

Clinical Core Subject II

(Code: ●●●●, 2nd~4th year, 5 units)

1. Instructors

Name	Position	Department	Contact Information
Minoru Tanabe	Chief Instructor/ Professor	Department of Clinical Anatomy	tana.msrg@tmd.ac.jp
Hiroyuki Uetake	Professor	Department of Specialized Surgeries	h-uetake.srg2@tmd.ac.jp
Yusuke Kidugasa	Professor	Department of Gastrointestinal Surgery	kinugasa.srg1@tmd.ac.jp
Takahiro Asakage	Professor	Department of Head and Neck Surgery	tasakage.hns@tmd.ac.jp
Yasuhisa Fujii	Professor	Department of Urology	y-fujii.uro@tmd.ac.jp
Vitoon Chinswangwatanakul	Chief Instructor/ Professor	General surgery, Cancer Center	vchinswa@gmail.com
Asada Methasate	Associate Professor	MIS unit Department of surgery	Asada.met@mahidol.ac.th
Woramin Riansuwan	Associate Professor	General surgery	woramin.ria@mahidol.ac.th
Yongyut Sirivatanauksorn	Associate Professor	Surgery	Yongyut.sir@mahidol.ac.th
Chumpol Wongwanit	Associate Professor	Surgery	wchumpol@gmail.com
Suebwong Chutapisith	Associate Professor	HNB Surgery	suebwong.chu@gmail.com
Sittiporn Srinualnud	Professor	Surgery	Sitsrinualnad@yahoo.com

2. Classroom/Lab Lecture

Designated by each instructor. This course is a cooperative opening course between TMDU and MU and in this case it is required to learn at a cooperative university at least one semester (one unit) to four semesters (4 units)

3. Aims of the Course

[Objectives]

To have participants obtain most advanced knowledge and skills in each field of surgical medicine. To have participants acquire knowledge needed to choose oncologically appropriate treatment and surgical techniques for each organ cancer.

[Description]

Participate in clinical practices and conferences for each specialty field of surgical medicine.

4. Course Objectives

The participants learn a number of new diagnostic and treatment methods in each specialty field of surgical medicine in order to enhance clinical capabilities as a surgeon.

5. Format

The classes will be conducted in forms of seminars, conference presentations, and discussions. Practical experience with actual cases is obtained in operation rooms and other clinical situations.

6. Class Detail

- In weekly seminars, the participants will obtain most current knowledge on advanced diagnosis, treatment and other topics in each specialty field of surgical medicine not only those in his/her own country but also those in the country of the partnership university.
- In weekly conferences held before and after a surgery, the participants will learn standard practices and advanced treatments. They make presentations on the cases they experienced and enhance experience through questions/answers and discussions.
- In laboratories and outpatient departments, the participants will experience standard practices and advanced treatments not only those in his/her own country but also those in the country of the partnership university, after which they will write reports on the experience.
- The participants will learn about most advanced surgeries not only those in his/her own country but also those in the country of the partnership university through observation in the operation rooms and in other opportunities as often as possible and write reports on the experience to enhance their experience.

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of classes will be made. It will comprise presentation of cases they have been assigned at conferences (50%) and Q&A and reporting assignments for cases they have experienced (50%).

8. Prerequisite Reading

When participating in each round, there are specific instructions on matters to prepare.

9. Reference Materials

Required literature etc. will be presented in preparation and prepare thoroughly.

10. Important Course Requirements

Since this subject is required to positively discuss and learn, etc., participate as much as possible.

11. Availability in English

All classes are given in English.

12. Office Hours

Please contact chief instructor and associate instructor.

13. Note(s) to Students

Nothing in particular,

Overview of Public Health Medicine in Disease Prevention

（Code：●●●● 1st～2nd year：2units）

1. Instructors

Name	Position	Department	Contact Information
Keiko Nakamura	Chief Instructor / Professor	Global Health Entrepreneurship	nakamura.ith@tmd.ac.jp
Shiro Iwanaga	Professor	Environmental Parasitology	iwanaga.vip@tmd.ac.jp
Shoji Yamaoka	Professor	Molecular Virology	shojmmb@tmd.ac.jp
Takeo Fujiwara	Professor	Global Health Promotion	fujiwara.hlth@tmd.ac.jp
Kazuki Takada	Professor	Professional Development in Health Sciences	takada.rheu@tmd.ac.jp
Masayuki Yoshida	Professor	Life Sciences and Bioethics	masa.vasc@tmd.ac.jp
Kaoruko Seino	Junior Associate Professor	Global Health Entrepreneurship	seino.ith@tmd.ac.jp
Takuya Okada	Junior Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp
Takashi Ito	Assistant Professor	Human Pathology	t.ito.pth1@tmd.ac.jp

2. Classroom/Lab Lecture

The venue should be confirmed by contacting instructors before attendance. It varies depending on the program.

3. Aims of the course

This course offers a general introduction to public health medicine, addressing fundamental topics and basic measures required for a global leader in disease prevention and data science medicine. The course focuses on development of essential knowledge and skills for global disease prevention and implementation science through lectures and discussions based on selected case studies.

4. Course objectives

At the end of the course, participants will be able to:

- Describe the roles and responsibilities of public health in disease prevention
- Describe development in basic, clinical, and public health research using data science
- Describe theory and application of implementation medical science
- Describe the global distribution and causes of major diseases, injuries and health risk factors, and the main prevention and control strategies
- Describe and apply the basic principles and methods of medical research to disease prevention
- Describe the main ethical issues in international medical research
- Describe cross-border health issues in relation to globalization

5. Format

Lectures, group discussions, and team project. All programs are conducted in English in an omnibus format.

International students and Japanese students attend the same class and use English in the classroom.

6. Class Detail

No	Topics
1	Implementation medical science in the context of global health (1)
2	Implementation medical science in the context of global health (2)
3	Prevention and control of tropical disease (1)
4	Prevention and control of tropical disease (2)
5	Prevention and control of communicable disease (1)
6	Prevention and control of communicable disease (2)
7	Health promotion (1)
8	Health promotion (2)
9	Prevention and control of cancer (1)
10	Prevention and control of cancer (2)
11	Prevention and control of non-communicable disease and implementation science (1)
12	Prevention and control of non-communicable disease and implementation science (2)
13	Ethics in medical research (1)
14	Ethics in medical research (2)
15	Exert on global readership in research of disease prevention, data science medicine, theory of implementation medical science, local practice and policy (1)
16	Exert on global readership in research of disease prevention, data science medicine, theory of implementation medical science, local practice and policy (2)

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

When reading materials are distributed or specified in advance, participants are expected to read those materials beforehand.

9. Reference Materials

To be announced before or during individual classes, when relevant.

10. Important Course Requirements

This is a required course for students of "Disease Prevention Global Leader Program (DP-GLP)". PhD candidates at departments of Medical and Dental Science and Biomedical Science who are enrolled in this program through a special selection must attain credits from this course.
This is a required course for students of "TMDU Data Science Medicine Global Leader Program (DS-GLP)". PhD candidates at departments of Medical and Dental Science and Biomedical Science who are enrolled in this program through a special selection must attain credits from this course.

11. Availability in English

Lectures and all communications are in English.

12. Office Hours

Please contact Prof. Keiko Nakamura at nakamura.ith@tmd.ac.jp

13. Note(s) to Students

Both international and Japanese students participate in the same program provided in English and learn together on public health medicine in disease prevention. The course is a core part of nurturing global leaders in disease prevention and data science medical research that TMDU provides.

Epidemiology

(Code: ●●●● 1st~2nd year 2units)

1. Instructors

Name	Position	Department	Contact Information
Takeo Fujiwara	Chief Instructor Professor,	Department of Global Health Promotion	fujiwara.hlth@tmd.ac.jp
Yoshihiro Kokubo	Chief Physician,	Department of Preventive Medicine, National Cerebral and Cardiovascular Center	
Ayako Morita	Assistant Professor,	Department of Global Health Promotion	morita.hlth@tmd.ac.jp

2. Classroom/Lab Lecture

G-Lab, M&D Tower 8F

3. Aims of the Course

[Course Purpose]

This course introduces the principles and methods used in epidemiologic research.

[Outline]

This course is a lesson to learn the basics of the Clinical Statistics and Bioinformatics Graduate Program of the Integrative Biomedical Sciences Programs for Preemptive Medicine aiming at the training of personnel who can promote precision medicine.

Epidemiology is defined as the study of the causes and distribution of health-related states or events in specified populations, and the application of this knowledge to control those health problems. Throughout the course we will focus on conceptual and practical issues in the design, conduct, and analysis of epidemiologic studies for description and causal inference.

4. Course Objectives

By the end of this course, students will be able to:

- Describe and calculate measures of disease frequency and measures of effect.
- Explain main types of epidemiologic study, and discuss appropriate design to use in a given situation.
- Explain potential biases in epidemiologic study and how to deal with these biases, and control confounding by stratifying data.
- Explain how epidemiology can be applied to evaluate health policy, investigate infectious diseases and genetic factors with examples.

5. Format

This course will consist of lectures and case-based class activities. Students will be required to write a final report.

6. Class Detail

No.	Topics
1	Lecture: The approach and evolution of epidemiology; and Measures of disease frequency (1)
2	Lecture: The approach and evolution of epidemiology; and Measures of disease frequency (2)
3	Case and group activity: The approach and evolution of epidemiology; and Measures of disease frequency (1)
4	Case and group activity: The approach and evolution of epidemiology; and Measures of disease frequency (2)
5	Lecture: Types of epidemiologic studies; and Ethics in research involving human participants (1)
6	Lecture: Types of epidemiologic studies; and Ethics in research involving human participants (2)
7	Case and group activity: Types of epidemiologic studies; and Ethics in research involving human participants (1)
8	Case and group activity: Types of epidemiologic studies; and Ethics in research involving human participants (2)
9	Lecture: Measures of effect; and Causal inference (1)
10	Lecture: Measures of effect; and Causal inference (2)
11	Case and group activity: Measures of effect; and Causal inference (1)
12	Case and group activity: Measures of effect; and Causal inference (2)
13	Lecture: Evaluation of health policy; Screening; Infectious disease epidemiology; and Genetic epidemiology (1)
14	Lecture: Evaluation of health policy; Screening; Infectious disease epidemiology; and Genetic epidemiology (2)
15	Case and group activity: Evaluation of health policy; Screening; Infectious disease epidemiology; and Genetic epidemiology (1)
16	Case and group activity: Evaluation of health policy; Screening; Infectious disease epidemiology; and Genetic epidemiology (2)

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Reading materials will be available online at the course webpage. Students are expected to have worked thorough the materials before attending the corresponding class.

9. Reference Materials

Gordis L. Epidemiology: with student consult. 5th edition. Philadelphia: Elservier; 2013

10. Important Course Requirements

Chief instructor's permission is required before registering to the course.

11. Availability in English

All classes are taught in English.

12. Office Hours

Please contact Prof. Fujiwara at fujiwara.hlth@tmd.ac.jp

13. Note(s) to Students

Nothing in particular.

Clinical Biostatistics and Statistical Genetics

(Code: ●●●● 1st~2nd year 2units)

1. Instructors

Name	Position	Department	Contact Information
Takeo Fujiwara	Chief Instructor / Professor	Department of Global Health Promotion	fujiwara.hlth@tmd.ac.jp
Ayako Morita	Assistant Professor	Department of Global Health Promotion	morita.hlth@tmd.ac.jp

2. Classroom/Lab Lecture

G-Lab, M&D Tower 8F, Library PC Room, M&D Tower 4F

3. Aims of the Course

[Course Purpose]

This course introduces the basic techniques important for analyzing data from epidemiologic, biomedical and other public health related research. Statistical reasoning will be emphasized through problem solving and practical applications.

[Outline]

This course is a lesson to learn the basics of the Clinical Statistics and Bioinformatics Graduate Program of the Integrative Biomedical Sciences Programs for Preemptive Medicine aiming at the training of personnel who can promote precision medicine.

Clinical Biostatistics and Statistical Genetics is the application of statistical methods to data in biological, biomedical and health sciences. It is a key technique for the collection, analysis, and presentation of data especially in quantitative studies including epidemiological studies. Throughout the seminar, we will review the broad field of statistical data analysis and the range of issues that arise when analyzing health data. We will read and discuss selected chapters from a textbook and apply statistical methods to wide range of quantitative study questions.

4. Course Objectives

By the end of this course, students will be able to:

- Learn to acquire clinical data.
- Learn to build algorithm for healthcare.
- Conduct basic statistical techniques both by hand and using a statistical software, and present results using publication quality tables.
- Describe results of statistical analysis using standard statistical expressions.

5. Format

This course will consist of lectures and optional laboratory sessions. There will be daily homework assignments and examination on the final day.

6. Course Description

No.	Topics
1	Lecture: Data presentation; Numerical summary measures (1)
2	Lecture: Data presentation; Numerical summary measures (2)
3	Lecture: Probability and diagnostic tests; Theoretical probability distributions (1)
4	Lecture: Probability and diagnostic tests; Theoretical probability distributions (2)
5	Lecture: Sampling distribution of the mean; Confidence intervals (1)
6	Lecture: Sampling distribution of the mean; Confidence intervals (2)
7	Lecture: Hypothesis testing; Comparison of two means (1)
8	Lecture: Hypothesis testing; Comparison of two means (2)
9	Lecture: Analysis of Variance; Nonparametric methods (1)
10	Lecture: Analysis of Variance; Nonparametric methods (2)
11	Lecture: Inference on proportions; Contingency tables; Multiple 2 by 2 tables (1)
12	Lecture: Inference on proportions; Contingency tables; Multiple 2 by 2 tables (2)
13	Lecture: Correlation; Simple linear regression; Multiple regression (1)
14	Lecture: Correlation; Simple linear regression; Multiple regression (2)
15	Lecture: Logistic regression
16	comprehensive lecture

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Reading materials will be available online at the course webpage. Students are expected to have worked thorough the materials before attending the corresponding class.

9. Reference Materials

Pagano M, Gauvreau K. Principles of Biostatistics. 2nd ed. Belmont: Brooks/Cole; 2000.
Rosner B. Fundamentals of Biostatistics. 8th ed. Brooks/Cole; 2015.

10. Important Course Requirements

Chief instructor's permission is required before registering to the course.

11. Availability in English

All classes are taught in English.

12. Office Hours

Please contact Prof. Fujiwara at fujiwara.hlth@tmd.ac.jp

13. Note(s) to Students

This course uses the Stata statistical software. Stata is available for each student during the course.

Students are expected to perform basic algebra, including logarithms and exponentials, by hand or using calculator.

Overview of Cancer: Cancer Biology, Pathology and Anatomy

（Code：●●●● 1st ～2nd year 1 unit）

1. Instructors

Name	Position	Department	Contact Information
Satoshi Miyake	Chief Instructor /Professor	Department of Clinical Oncology	sm.conc@tmd.ac.jp
Masanobu Kitagawa	Professor	Department of Comprehensive Pathology	masa.pth2@tmd.ac.jp
Keiichi Akita	Professor	Department of Clinical Anatomy	akita.fana@tmd.ac.jp
Shinji Tanaka	Professor	Department of Molecular Oncology	tanaka.monc@tmd.ac.jp
Shigeomi Shimizu	Professor	Department of Pathological Cell Biology	shimizu.pcb@mri.tmd.ac.jp

2. Classroom/Lab Lecture

Daigakuin Kougishitsu 3, M&D Tower 11F

3. Aims of the Course

[Course Purpose]

- To understand genetic abnormalities underlying cancer.
- To understand carcinogens, infections associated with canceration, and hereditary cancers.
- To understand factors regulating differentiation associated with cancer and differentiation therapy.
- To understand association between cancer and vasculature and angiogenesis inhibition therapy.
- To understand cell death/life span, cell proliferation/cycle, and DNA damage repair, all of which are directly linked to cell fate, focused on difference between normal and cancer cells.
- To understand established and new theory regarding cell transformation as well as cancer stem cells and relevant ES/iPS cells.
- To understand lymphatic route as a metastasis pathway of cancer.
- To understand the position of the arteries used for intra-arterial infusion therapy for cancer.
- To understand methods and process for pathological diagnosis of cancer (benign and malignant/infiltrating and metastatic) in medical practice for cancer treatment.
- To understand the importance of judging malignancy grade with relevance to treatment methods.
- To understand diagnosis and treatment of early cancer in comparison with advanced cancer.
- To understand change in cancer lesion after treatment.

[Outline]

This is a course to comprehensively learn basic medical science underlying recent progress in treatment options for medical practice for cancer treatment (e.g., high precision radiotherapy, minimal invasive surgery, molecular target therapy, and immune checkpoint inhibitor).

4. Course Objectives

To understand behavior and true condition of cancer at molecular level and morphological viewpoint with relevance to diagnosis and treatment.

5. Format

A bidirectional class will be conducted as well as presentation with lecture and movie for the purpose of active participation of students who take the course. All programs are conducted in an omnibus format.

6. Class Detail

No.	Topics
1	Clinical anatomy of chest, abdomen and pelvic cancer
2	Degrees of atypism and malignancy of cancer
3	Role of pathological diagnosis in cancer chemotherapy
4	Early cancer and advanced cancer
5	Sites of occurrence and diversity of cancer
6	Biochemical characteristics of cancer cells
7	Cancer and cell cycle
8	Hereditary cancer
9	Characteristics of cancer cells
10	Oncogenes and tumor suppressor genes

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Important Course Requirements

Requirement none.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact person: Professors Satoshi Miyake, E-mail: sm.conc@tmd.ac.jp

13. Note(s) to Students

It is expected that anyone who is interested in oncology as a general field participates actively.

Minimal Invasive Treatment for Cancer. I

(Code: ●●●●, 1st~2nd year, 1 unit)

1. Instructors

Name	Position	Department	Contact Information
Satoshi Miyake	Chief Instructor / Professor	Department of Clinical Oncology	sm.conc@tmd.ac.jp
Daisuke Ban	Junior Associate Professor	Department of Clinical Oncology	d-ban.msrg@tmd.ac.jp
Akifumi Kikuchi	Assistant Professor	Department of Hepatobiliary and Pancreatic Surgery	kikuchi.srg2@tmd.ac.jp
Hironori Ishibashi	Junior Associate Professor	Department of Gastrointestinal Surgery	hishiba.thsr@tmd.ac.jp
Junichiro Ishioka	Junior Associate Professor	Department of Thoracic Surgery	ishioka.uro@tmd.ac.jp
Akihiro Hoshino	Assistant Professor	Department of Gastrointestinal Surgery	hosino.srg1@tmd.ac.jp

2. Classroom/Lab Lecture

Daigakuin Kougishitsu 3, M&D Tower 11F

3. Aims of the Course

- Understand minimally invasive treatments for various cancers.
- Understand multidisciplinary treatments for cancer that combine surgery, radiation therapy, and chemotherapy.

4. Course Objective

Concerning the surgical technique, the concept and result of the minimally invasive surgery are shown, and the visual images including the video demonstration is presented

5. Format

A bidirectional class will be conducted as well as presentation with lecture and movie for the purpose of active participation of students who take the course. All programs are conducted in an omnibus format.

6. Class Detail

No.	Topics
1	Colon diseases (1)
2	Colon diseases (2)
3	Minimally invasive treatment for hepatobiliary and pancreatic cancer (1)
4	Minimally invasive treatment for hepatobiliary and pancreatic cancer (2)
5	Minimally invasive surgery in urological diseases (1)
6	Minimally invasive surgery in urological diseases (2)
7	Minimally invasive treatment for esophageal cancer (1)
8	Minimally invasive treatment for esophageal cancer (2)
9	Lung cancer treatment (1)
10	Lung cancer treatment (2)

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Important Course Requirements

It is preferable to take this course together with Minimal Invasive Treatment for Cancer II.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact person: Professor Satoshi Miyake. E-mail: sm.conc@tmd.ac.jp

13. Note(s) to Students

It is expected that anyone who is interested in oncology as a general field participates actively.

Minimal Invasive Treatment for Cancer. II

(Code: ●●●●, 1st~2nd year, 1 unit)

1. Instructors

Name	Position	Department	Contact Information
Masahiko Miura	Chief Instructor / Professor	Department of Oral Radiation Oncology	masa.mdth@tmd.ac.jp
Atstuya Takeda	Head of Radiation Oncology Center	Ofuna Chuo Hospital, Radiation Oncology Center	takeda@1994.jukuin.keio.ac.jp
Tetsuo Akimoto	Director	Vice president, Department of Radiology, National Cancer Center Hospital East	takimoto@east.ncc.go.jp
Hiroyuki Uetake	Professor	Department of Specialized Surgery	h-uetake.srg2@tmd.ac.jp
Kazuma Toda	Junior Associate Professor	Department of Radiation Therapeutics and Oncology	tdmrad@tmd.ac.jp

2. Classroom/Lab Lecture

Daigakuin kougishitsu 3, M&D Tower 11F

3. Aims of the Course

[Course Purpose]

- Understand minimally invasive treatments for various cancers.
- Understand the type, indication, and efficacy of radiation therapy.

[Outline]

- Understand multidisciplinary treatments for cancer that combine surgery, radiation therapy, and chemotherapy.

4. Course Objectives

Radiation therapy is described by each organ and treatment. In particular, leading-edge lectures on brachytherapy, high-precision radiotherapy such as IMRT and stereotactic radiation therapy, and particle-beam therapy using protons are provided. For colorectal cancer, we will content advanced lectures on the combination of surgery and chemotherapy.

5. Format

A bidirectional class will be conducted as well as presentation with lecture and movie for the purpose of active participation of students who take the course. All programs are conducted in an omnibus format.

6. Course Description and Timetable

No.	Topics
1	Stereotactic radiotherapy (1)
2	Stereotactic radiotherapy (2)
3	Radiotherapy in university hospital (1)
4	Radiotherapy in university hospital (2)
5	Combination of anticancer drugs and surgery in colorectal cancer (1)
6	Combination of anticancer drugs and surgery in colorectal cancer (2)
7	Proton therapy (1)
8	Proton therapy (2)
9	Radiotherapy for uterine cancer and prostate cancer (1)
10	Radiotherapy for uterine cancer and prostate cancer((2)

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Important Course Requirements

It is preferable to take this course together with Minimal Invasive Treatment for Cancer I.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact: Chief Instructor, Masahiko Miura, Mon/Wed/Fri 16:00-18:00（M&D Tower702）

13. Note(s) to Students

It is expected that anyone who is interested in oncology as a general field participates actively.

Organ-specialized Cancer Therapy

(Code: ●●●●, 1st~2nd year, 1 unit)

1. Instructors

Name	Position	Department	Contact Information
Satoshi Miyake	Chief Instructor /Professor	Department of Clinical Oncology	sm.conc@tmd.ac.jp
Yasuaki Nakajima	Associate Professor	Department of Gastrointestinal Surgery	yasu.nakajima.srg1@tmd.ac.jp
Masatoshi Nakagawa	Assistant Professor	Department of Gastrointestinal Surgery	nakagawa.srg1@tmd.ac.jp
Tsuyoshi Nakagawa	Junior Associate Professor	Department of Specialized Surgeries	nakagawa.srg2@tmd.ac.jp
Toshiki Kijima	Assistant Professor	Hospital Department of Urology	toshiki.uro@tmd.ac.jp
Kimio Wakana	Junior Associate Professor	Hospital Department of Perinatal and Women's Medicine	k.wakana.crm@tmd.ac.jp

2. Classroom/Lab Lecture

Daigakuin Kougishitsu 3, M&D Tower 11F

3. Aims of the Course

[Course Purpose]

To understand the principle and practice of standard and multidisciplinary treatment for organ-specialized cancer.

[Outline]

A classification, pathology, and diagnosis of organ-specialized cancer will be outlined. Surgery, chemotherapy, and their combination as multidisciplinary treatment will be described as well as the indication, target, and benefit of such treatments. In addition, recent clinical studies and topics also will be mentioned.

4. Course Objectives

- To understand and explain information on diagnosis and treatment for organ-specialized cancer.
- To understand and explain the current status of multidisciplinary diagnosis and treatment for organ-specialized cancer.
- To understand and explain the role of diagnosis and treatment for organ-specialized cancer in comprehensive cancer diagnosis and treatment.

5. Format

A bidirectional class will be conducted as well as presentation with lecture and movie for the purpose of active participation of students who take the course. All programs are conducted in an omnibus format.

6. Class Detail

・A lecture-style course.
・A diagnosis and treatment of cancers of any organ (esophagus, stomach, mammary gland, urinary and gynecologic organs) will be outlined.
・This course is organized together with the lecture on pediatric and rare cancers.

No.	Topics
1	Urological cancer (1)
2	Urological cancer (2)
3	Gynecologic cancer (uterine, ovarian) (1)
4	Gynecologic cancer (uterine, ovarian (2)
5	Breast cancer (1)
6	Breast cancer (2)
7	Lung cancer specifics (internal medicine) (1)
8	Lung cancer specifics (internal medicine) (2)
9	Gastric cancer (1)
10	Gastric cancer (2)

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Important Course Requirements

It is preferable to take this course together with Pediatric and Rare Cancers and Advanced Clinical Oncology.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact: Department of Clinical Oncology, Satoshi Miyake, E-mail: sm.conc@tmd.ac.jp

13. Note(s) to Students

It is expected that anyone who is interested in oncology as a general field participates actively.

Pediatric and rare cancers

(Code: ●●●●, 1st ~2nd year, 1 unit)

1. Instructors

Name	Position	Department	Contact Information
Satoshi Miyake	Chief Instructor /Professor	Department of Clinical Oncology	sm.conc@tmd.ac.jp
Masatoshi Takagi	Associate Professor	Department of Pediatrics and Developmental Biology	m.takagi.ped@tmd.ac.jp
Takahiro Asakage	Professor	Department of Head and Neck Surgery	asakage.hns@tmd.ac.jp
Daisuke Ban	Junior Associate Professor	Department of Hepatobiliary and Pancreatic Surgery	d-ban.msrg@tmd.ac.jp
Takeshi Namiki	Associate Professor	Department of Dermatology	tnamderm@tmd.ac.jp
Kaoru Tamura	Assistant Professor	Hospital Department of Neurosurgery	tamura.nsrg@tmd.ac.jp

2. Classroom/Lab Lecture

Daigakuin Kougishitsu 3, M&D Tower 11F

3. Aims of the course

[Course Purpose]

To understand the principle and practice of individual and multidisciplinary treatment for pediatric and rare cancers.

[Outline]

A classification, pathology, and diagnosis of pediatric and rare cancers will be outlined. Surgery, chemotherapy, and their combination as multidisciplinary treatment will be described as well as the indication, target, and benefit of such treatments. In addition, recent clinical studies and topics also will be mentioned.

4. Course objectives

- To understand and explain information on diagnosis and treatment for pediatric and rare cancers.
- To understand and explain the current status of multidisciplinary diagnosis and treatment for pediatric and rare cancers.
- To understand and explain the role of diagnosis and treatment for pediatric and rare cancers in comprehensive cancer diagnosis and treatment.

5. Format

A bidirectional class will be conducted as well as presentation with lecture and movie for the purpose of active participation of students who take the course. All programs are conducted in an omnibus format.

6. Class Detail

- A lecture-style course.
- A diagnosis and treatment of pediatric and rare cancers (head/neck, skin, and hepatobiliary-pancreatic cancer and brain tumor) will be outlined.
- This course is organized together with the lecture on Organ-specialized Cancer.

No.	Topics
1	Pediatric cancer (1)
2	Pediatric cancer (2)
3	Brain tumors (1)
4	Brain tumors (2)
5	Hepatobiliary, pancreatic cancer (1)
6	Hepatobiliary, pancreatic cancer (2)
7	From basics to application of treatment for head and neck cancer (1)
8	From basics to application of treatment in head and neck cancer (2)
9	Skin malignancies (1)
10	Skin malignancies (2)

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Important Course Requirements

It is preferable to take this course together with “Pediatric and rare cancers” and “Advanced Clinical Oncology”.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact: Department of Clinical Oncology, Satoshi Miyake, E-mail: sm.conc@tmd.ac.jp

13. Note(s) to Students

It is expected that anyone who is interested in oncology as a general field participates actively.

Advanced Clinical Oncology

(Code: ●●●●, 1st ~2nd year, 1 unit)

1. Instructors

Name	Position	Department	Contact Information
Satoshi Miyake	Chief Instructor /Professor	Department of Clinical Oncology	sm.conc@tmd.ac.jp
Shingo Sato	Junior Associate Professor	Medical Hospital, Cancer Center	satoshin.phy2@tmd.ac.jp
Toshiaki Ishikawa	Associate Professor	Department of Specialized Surgeries	ishi.srg2@tmd.ac.jp

2. Classroom/Lab Lecture

Daigakuin kougishitsu 3, M&D Tower 11F

3. Aims of the Course

【Course Purpose】

To understand the principle and practice of advanced clinical oncology focused on chemotherapy.

【Outline】

The practical implementation and recent trends of chemotherapy for various types of cancer will be outlined. Multidisciplinary treatment focused on chemotherapy will be described as well as the indication, target, and benefit of such treatment. In addition, recent clinical studies and topics also will be mentioned.

4. Course Objectives

- To understand and explain information on advanced clinical oncology.
- To understand and explain the current status of multidisciplinary diagnosis and treatment in advanced clinical oncology.
- To understand and explain the position of advanced clinical oncology in comprehensive cancer diagnosis and treatment.

5. Format

A bidirectional class will be conducted as well as presentation with lecture and movie for the purpose of active participation of students who take the course.

6. Class Detail

- A Lecture-style course.
- A lecture will be given on areas where progresses have been made focused on chemotherapy in organ-specialized cancer diagnosis and treatment (e.g., lung, colorectal, and blood cancer, and bone soft sarcoma).
- It is beneficial to take this course together with Cancer Genomics and Precision Medicine and Organ-specialized Cancer.

No.	Topics
1	Importance of diagnosis, treatment and team medical care in bone metastasis (1)
2	Importance of diagnosis, treatment and team medical care in bone metastasis (2)
3	Actual state of chemotherapy—Aiming for optimal treatment of colorectal cancer (1)
4	Actual state of chemotherapy—Aiming for optimal treatment of colorectal cancer (2)
5	Current treatment of hematopoietic tumors (1)
6	Current treatment of hematopoietic tumors (2)
7	Diagnosis and treatment of esophageal cancer (1)
8	Diagnosis and treatment of esophageal cancer (2)
9	Introduction to palliative oncology (1)
10	Introduction to palliative oncology (2)

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Important Course Requirements

It is preferable to take this course together with Pediatric and rare cancers.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact: Department of Clinical Oncology, Satoshi Miyake, E-mail: sm.conc@tmd.ac.jp

13. Note(s) to Students

It is expected that anyone who is interested in oncology as a general field participates actively.

Cancer genomics and precision medicine

(Code: ●●●●, 1st~2nd year, 1 unit)

1. Instructors

Name	Position	Department	Contact Information
Satoshi Miyake	Chief Instructor / Professor	Department of Clinical Oncology	sm.conc@tmd.ac.jp
Sadakatsu Ikeda	Associate Professor	Hospital Department of Cancer Center	ikeda.canc@tmd.ac.jp
Kosuke Tanimoto	Assistant Professor	Medical Research Institute of Genome Laboratory	ktani.nri@mri.tmd.ac.jp

2. Classroom/Lab Lecture

Daigakuin Kougishitsu 3, M&D Tower 11F

3. Aims of the Course

[Course Purpose]

Organize systematic knowledge about the basis and clinic of cancer genome, the basis and clinic of cancer precision medicine, and current status.

[Outline]

Classes will be given by an overview of cancer genome and cancer precision medicine from various angles. And also, the lecture will be interactive including active discussions during the class.

4. Course Objectives

- To understand and explain the knowledge of cancer genome and Precision Medicine.
- To understand and explain the role of cancer genome and precision medicine in comprehensive cancer medical care.

5. Format

A bidirectional class will be conducted as well as presentation with lecture and movie for the purpose of active participation of students who take the course. All programs are conducted in an omnibus format.

6. Course Description and Timetable

- A lecture-style course.
- A lecture will be given focused on the following subjects.
  Basis of genetics and genetic mutation.
  Basis of next generation sequencing
  Annotation and curation for next-generation sequencing (NGS) analysis data
  Current status and challenges for implementation of genomic treatment

No.	Topics
1	Basics of next generation sequencers (1)
2	Basics of next generation sequencers (2)
3	Basics of genetic/genomic mutations (1)
4	Basics of genetic/genomic mutations (2)
5	Basics of cancer genomic medicine (1)
6	Basics of cancer genomic medicine (2)
7	Data analysis in cancer gene panel tests (1)
8	Data analysis in cancer gene panel tests (2)
9	Clinical implementation of cancer genome profiling tests (1)
10	Clinical implementation of cancer genome profiling tests (2)

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Important Course Requirements

It is beneficial to take this course together with Advanced Clinical Oncology and Organ-specialized Cancer.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact person: Professor Satoshi Miyake, E-mail: sm.conc@tmd.ac.jp

13. Note(s) to Students

It is expected that anyone who is interested in oncology as a general field participates actively.

Palliative Medicine: Outline

(Code: ●●●●, 1st ~2nd year, 1 unit)

1. Instructors

Name	Position	Department	Contact Information
Satoshi Miyake	Chief Instructor / Professor	Department of Clinical Oncology	sm.conc@tmd.ac.jp

2. Classroom/Lab Lecture

Daigakuin Kougishitsu 3, M&D Tower 11F

3. Aims of the Course

Palliative medicine in Japan was originally focused on terminally-ill cancer patients with pain. However, it has been indicated in the early course of cancer treatment and has expanded its notion. This course provides an overview of general understanding of palliative medicine. The aim is also to knowledge about the quality of life to assess the patient's overall profile and to learn the communication skills with these patients and their families.

4. Course Objectives

Philosophy, aim, significance, and current situation of palliative care are outlined. In addition, the following are explained: Hospice, palliative care in the palliative care unit, and home palliative care, according to the actual clinical experience. Lectures will be given on the basic quality of life scales in palliative medicine, including descriptions and applied of quality of life measures to assess total pain, and communication with patients and their families.

5. Format

A bidirectional class will be conducted as well as presentation with lecture and movie for the purpose of active participation of students who take the course.

6. Course Description and Timetable

- A lecture-style course.
- Lecture on palliative medicine for the following diseases：
  - ・Introduction to palliative medicine
  - ・Assessment and management of physical symptoms
  - ・Communication in cancer treatment

No.	Topics
1	Introduction to palliative medicine (1)
2	Introduction to palliative medicine (2)
3	Overview of psycho-oncology (1)
4	Overview of psycho-oncology (2)
5	Approach to physical symptoms in palliative care unit (1)
6	Approach to physical symptoms in palliative care unit (2)
7	Overview of palliative care at home (1)
8	Overview of palliative care at home (2)
9	Communication in palliative care (1)
10	Communication in palliative care (2)

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of face-to-face lectures (including a part of those streamed live) will be made. It will comprise attitude to study (participation in discussions, presentations, etc.) (30%), short tests (30%) and reporting assignments (40%). If the study is done by E-learning, after completing it, there will be confirmatory testing (also by E-learning) to make an assessment of understanding of the content. The person who passed the exam is regarded as equivalent to attendance. In this case, the overall assessment will comprise reports with respect to discussions in the class (30%), short tests (30%) and reporting assignments (40%).

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Important Course Requirements

Requirement none.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact: Department of Clinical Oncology, Satoshi Miyake, E-mail: sm.conc@tmd.ac.jp

13. Note(s) to Students

It is expected that anyone who is interested in oncology as a general field participates actively.

Specialized Surgeries

（Code：●●●●　1st～2nd year：4units）

1. Instructors

Name	Position	Department	Contact Information
Hiroyuki Uetake	Chief Instructor /Professor	Department of Specialized Surgeries	h-uetake.srg2@tmd.ac.jp
Toshiaki Ishikawa	Associate Professor	Department of Specialized Surgeries	ishi.srg2@tmd.ac.jp
Toshifumi Kudo	Associate Professor	Department of Specialized Surgeries	t-kudo.srg1@tmd.ac.jp
Tsuyoshi　Nakagawa	Junior Associate Professor	Department of Specialized Surgeries	nakagawa.srg2@tmd.ac.jp
Kentaro Okamoto	Junior Associate Professor	Department of Specialized Surgeries	okasrg2@tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Aims of the Course

1) To understand ethiology, diagnosis and adequate treatment for colorectal and breast cancer.
2) To understand multidisciplinary treatment for unresectable colorectal cancer.
3) To understand ethiology, diagnosis and adequate treatment for periferal vascular disease.
4) To understand ethiology, diagnosis and adequate treatment for pediatric surgical disease.

4. Course Objectives

1) To make the treatment strategy for colorectal and breast cancer.
2) To keep and ascess QoL and organ function after operation.
3) To make the multidisciplinary treatment strategy for advanced colorectal and breast cancer.
4) To understand ethiology, diagnosis and adequate treatment for periferal vascular disease.
5) To make the treatment strategy for pediatric surgical disease.

5. Format

To improve the ability of presentation and communication, enough opportunities of presentation and discussion are set.

6. Class Detail

Surgery for cancers of the colon and rectum and the breast is the most important tool, but recently chemotherapy has achieved great advance. In order to establish the strategy how to eradicate cancers, it is important to elucidate the mechanism of development and progression of cancers. The latest findings on surgical oncology are reviewed. The most effective therapy for nonresectable cancers is reviewed in view of a multidisciplinary treatment approach. Surgical treatment for cancers often complicates physiological dysfunctions in digestion, absorption, defecation, sexual intercourse and urination, resulting in impairing post-operative QOL. The students take the lectures about anatomy and physiology of the digestive organs and the breast to acquire the knowledge required to prevent a decline in QOL.

Check the schedules announced at the beginning of the academic year for case conferences, conferences, research progress meetings, journal clubs, lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Important Course Requirements

None.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact: Department of Specialized Surgeries, Hiroyuki Uetake,
E-mail: h-uetake.srg2@tmd.ac.jp

13. Note(s) to Students

Applicants with Japanese medical license is eligible. Expected the participation who are interested in surgery of digestive tract.

Gastrointestinal Surgery

（Code：●●●● 1st ~2nd year：4units）

1. Instructors

Name	Position	Department	Contact Information
Yusuke Kinugasa	Chief Instructor /Professor	Department of Gastrointestinal Surgery	kinugasa.srg1@tmd.ac.jp
Masanori Tokunaga	Associate Professor	Department of Gastrointestinal Surgery	N/A
Yasuaki Nakajima	Associate Professor	Department of Gastrointestinal Surgery	yasu.nakajima.srg1@tmd.ac.jp
Shinichi Yamauchi	Assistant Professor	Department of Gastrointestinal Surgery	s-yamauchi.srg2@tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Aims of the Course

The graduates will understand various gastrointestinal diseases and attain the ability to manage these diseases and the problems of patients, through clinical experiences and basic researches.

4. Course Objectives

1. Understanding of surgical health care system delivery to both inpatients and outpatients.
2. Learning surgical technique of gastrointestinal surgery as an operator or assistants.
3. How to conduct clinical and/or basic research on gastrointestinal disease in collaboration with the other fields of specialists.
4. To promote skills in presentation at scientific meetings.
5. Acquisition of educational methods for junior surgeons.
6. Function as a member of the surgical team.

5. Format

With the instructors, clinical questions are discussed, presented, and finally contributed as the original paper.

6. Class Detail

Our goals are to develop the new methods of diagnosis and treatment of the disease of digestive tract to contribute to the medical progression. Also, we aim to bring up young doctors of gastrointestinal and general surgery. "

Available programs:
Lecture, Seminar on every Tuesday, at 6:00 pm.
Conference on every Monday and Thursday, at 7:30 am."

Check the schedules announced at the beginning of the academic year for lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.

9. Reference Materials

Japanese Classification of Esophageal Cancer: 11th edition: Part I. Japan Esophageal Society. Esophagus 2017,14(1):1-36.
Japanese Classification of Esophageal Cancer: 11th edition: Part II and III. Japan Esophageal Society. Esophagus 2017,14(1):37-65.
Japanese classification of colorectal carcinoma. Japanese Society for Cancer of the Colon and Rectum, Kanehara & Co., Ltd. Tokyo
Surgery of THE ANUS RECTUM & COLON. Michael RB Keighley & Norman S Williams, W.B Saunders London
Japanese gastric cancer treatment guidelines 2014(ver.4) Japanese Gastric Cancer Association. Gastric Cancer 2017,20(1):1-19.
Japanese classification of gastric carcinoma: 3rd English edition Japanese Gastric Cancer Association. Gastric Cancer 2011,14:101–112.

10. Important Course Requirements

Nothing in particular

11. Availability in English

All classes are given in English.

12. Office Hours

Contact:
Department of Gastrointestinal Surgery
-Shinichi Yamauchi, E-mail: s-yamauchi.srg2@tmd.ac.jp
(Secretary: Keiko Sakamoto, E-Mail: secre.srg1@tmd.ac.jp)

13. Note(s) to Students

Be prepared to be able to enter active discussions, be able to ask questions, and be able to answer. No limitation for participants

Hepatobiliary and Pancreatic Surgery (TMDU)

（Code：●●●● 1st ~2nd year 4units）

1. Instructors

Name	Position	Department	Contact Information
Minoru Tanabe	Chief Instructor /Professor	Department of Hepatobiliary and Pancreatic Surgery	tana.msrg@tmd.ac.jp
Atsushi Kudo	Junior Associate Professor	Department of Hepatobiliary and Pancreatic Surgery	kudomsrg@tmd.ac.jp
Daisuke Ban	Junior Associate Professor	Department of Hepatobiliary and Pancreatic Surgery	d-ban.msrg@tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Aims of the Course

The graduates will understand various Heapto-Biliary-Pancreatic diseases and attain the ability to manage these diseases and the problems of patients, through clinical experiences and basic researches.

4. Course Objectives

Course objectives are:

1. Understanding of surgical health care system delivery to both inpatients and outpatients.
2. Learning surgical technique of Hepato-Biliary-Pancreatic surgery as an operator or assistants.
3. How to conduct clinical and/or basic research on HBP disease in collaboration with the other fields of specialists.
4. To promote skills in presentation at scientific meetings.
5. Acquisition of educational methods for junior surgeons.
6. Function as a member of the surgical team.

5. Format

Small-group guidance

6. Class Detail

Lectures on biomolecular mechanisms of carcinogenesis, cancer growth, invasion and metastasis in digestive organs, especially liver, biliary duct and pancreas; leading to molecular target therapy. In addition, the general and advanced researches on the diagnosis and treatment of the cancers are expounded, as well as clinical and basic researches on liver transplantation.

Available programs:
HBP Conference: Every Monday PM17:00-19:00
Journal Club: Every Wednesday AM8:00-9:00

Check the schedules announced at the beginning of the academic year for case conferences, conferences, research progress meetings, lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.

9. Reference Materials

Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice 19th ed. Saunders, USA 2012 年
Schwartz's Principles of Surgery 9th ed. McGraw-Hill Professional, USA 2009 年
Clinical Oncology: A Multi- Disciplinary Approach for Physicians & Students 8th ed. Saunders, USA 2001 年

10. Important Course Requirements

Nothing in particular.

11. Availability in English

All lectures are conducted in English.

12. Office Hours

Contact person: Minoru Tanabe, M.D., Ph.D. Department of Hepato-Biliary-Pancreatic Surgery
E-mail: bg-secre.msrg＠tmd.ac.jp Office hour: 9:00-17:00 An appointment is required in advance.

13. Note(s) to Students

Nothing in particular.

Head and Neck Surgery

（Code： ●●●● 1st ~2nd year　4units）

1. Instructors

Name	Position	Department	Contact Information
Takahiro Asakage	Chief Instructor /Professor	Department of Head and Neck Surgery	tasakage.hns@tmd.ac.jp
Yousuke Ariizumi	Junior Associate Professor	Department of Head and Neck Surgery	ariizumi.hns@tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Aims of the Course

Develop excellent human resources of head and neck surgeon.
For the purpose, it is needed to understand anatomy, pathology, the way of diagnosis, and treatment strategy.
In addition, research about new clinical technique or clinical anatomy.

4. Attainment targets

1. Understand clinical feature of head and neck tumor.
2. Acquire diagnosis skills of head and neck tumor.
3. Be able to select the suitable treatment method.
4. Research and development for new knowledge about head and neck anatomy or treatment

5. Format

The format comprises a small number of students.

6. Class Detail

We mainly deal with head and neck tumours. Lectures are focused on the clinical characteristics and pathogenesis of these head and neck tumours. Furthermore, various treatments strategies for these tumours are shown.

Available programs:
Otolaryngology--Head and Neck Surgery joint conference: every Tuesday, 7:45–9:00

Check the schedules announced at the beginning of the academic year for research progress meetings, journal clubs, lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading
The knowledge about general otorhinolaryngology and surgical oncology are required.

9. Reference Materials
not available.

10. Important Course Requirements
Nothing in particular

11. Availability in English
Lectures will be conducted in English when foreign students registered.

12. Office Hours
Contact: Department of Head and Neck Surgery, Takahiro Asakage,
E-mail: sm.conc@tmd.ac.jp
9:00am-17:00pm

13. Note(s) to Students
Nothing in particular.

Urology

（Code：●●●● 1st ~2nd year 4units）

1. Instructors

Name	Position	Department	Contact Information
Yasuhisa FUJII	Chief Instructor /Professor	Department of Urology	y-fujii.uro@tmd.ac.jp
Kazutaka Saito	Associate Professor	Department of Urology	kz-saito.uro@tmd.ac.jp
Souichiro Yoshida	Assistant Professor	Department of Urology	s-yoshida.uro@tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Aims of the Course

Urology is the surgical specialty that focuses on the urinary tracts, and on the male reproductive system. The organs covered by
urology includes the kidneys, adrenal glands, ureters, urinary bladder, urethra, and the male reproductive organs (testes,
epididymis, vas deferens, seminal vesicles, prostate and penis). Urology is closely related to, and in some cases overlaps with,
diverse medical fields including oncology, nephrology, gynecology, andrology, neurology, pediatric surgery, gastroenterology, and
endocrinology. Minimally-invasive surgery for urological disorders has been one of the most important topics in this field.

4. Course Objectives

Our course objectives include;
1) to understand the pathophysioogy and means of diagnosis and treatment of various urological disorders and to appropliately
diagnose, treat, and manage patients with these diseases.
2) to learn gasless single-port robosurgeon surgery, which is one of the minimally-invasive surgeries and has been developed in
our department.
3) through basic research, to gain new findings which will lead to the improvement of oncological and functional outcomes of
patients with urological diseases.

5. Format

A small class in which the students will be trained though mutual discussion.

6. Class Detail

The urinary tracts and the male reproductive system are well controlled by automatic and somatic nervous systems and endocrine systems. The students will learn these modulating systems, destruction of which will lead to various urologic symptoms and diseases. And the students will also learn the etiology, diagnosis and treatment of urologic malignant diseases. Minimallyinvasive surgery for urological disorders has been one of the most important topics in this field.
Clinical Conference: Every Thursday 17:00-18:00
Case Conference: Every Thursday 7:00-9:00

Check the schedules announced at the beginning of the academic year for journal clubs, lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

It is preferred to acquire the basic knowledge of urologic diseases and basic skills of basic research before admission.

9. Reference Materials

Kazunori Kihara edited, Gasless Single-Port RoboSurgeon Surgery in Urology, Springer
Kazunori Kihara edited, Illustrated minimum incision urologic surgery, Igakushoin (in Japanese)
CAMPBELL-WALSH UROLOGY, 10th EDITION, ELSEVIER
European Association of Urology Guidelines, http://www.uroweb.org/guidelines/online-guidelines/

10. Important Course Requirements

Nothing in particular

11. Availability in English

Lectures will be given in English.

12. Office Hours

9:00-17:00, Phone: 03-5803-5295
Yasuhisa Fujii, E-mail: y-fujii.uro@tmd.ac.jp

13. Note(s) to Students

Nothing in particular

Stem Cell Regulation

（Code：●●●● 1st~2nd year 4units）

1. Instructors

Name	Position	Department	Contact Information
Tetsuya Taga	Chief Instructor /Professor	Department of Stem Cell Regulation	taga.scr@mri.tmd.ac.jp
Ikuo Nobuhisa	Associate Professor	Department of Stem Cell Regulation	nobuhisa.scr@mri.tmd.ac.jp
Kouichi Tabu	Assistant Professor	Department of Stem Cell Regulation	k-tabu.scr@mri.tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Aims of the Course

The purpose of this course is to encourage students to comprehensively understand stem cells in normal and pathological conditions. Students will improve their abilities to independently study stem cell regulations and applications through education and training about origins, properties, and regulations of stem cells that function in tissue development, maintenance and regeneration. The course will especially focus on neural stem cells, hematopoetic stem cells, and cancer stem cells in view of cell-external cues from "niches" and cell-intrinsic cues such as epigenetic regulations.

4. Course Objectives

The objectives of this course are as follows: To help students absorb knowledge and research strategies that are necessary to understand and employ regulatory mechanisms of stem cell development, maintenance, and fate determinations, particularly in neural stem cells, hematopoetic stem cells, and cancer stem cells. To make students learn molecular biological, cell biological, and histological methods for conducting research projects. To develop students' skills to recognize problems by themselves, construct working hypotheses, design and perform experiments to solve them, properly discuss experimental results. and, report the summary of research in English.

5. Format

Programs are set up for a small number of students for more intense discussion and in-depth participation.

6. Class Detail

This course will introduce to students the recent topics in the research field of stem cell regulation. Tissue stem cells possess potential to generate all cell types present in a given tissue. In order to understand tissue development and regeneration from the biological and clinical viewpoints, it is important to study the molecular regulation of stem cell maintenance and fate specification. Not only normal tissue stem cells, e.g. neural and hematopoietic stem cells on which we place particular focus, but also cancer stem cells will be discussed to consider the problem of cancer recurrence. We will refer to cell-extrinsic signals like growth factors in the niche and cell-intrinsic program such as epigenetic modifications as cell fate regulatory elements.

Available programs:
Research Meeting 15:00 ~ 16:30 on every Friday

Check the schedules announced at the beginning of the academic year for lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Students should read in advance literature on stem cell regulations. They should also possess the necessary skills to run Word, Excel, and PowerPoint, which are used in the Lectures and Practice.

9. Reference Materials

Molecular Biology of the Cell, fifth edition. Garland Science. 2008.
StemBook. Harvard Stem Cell Institute. 2008-.

（http://www.ncbi.nlm.nih.gov/books/NBK27044/）

10. Important Course Requirements

Participants are required to study on a voluntary basis.

11. Availability in English

Lectures will be partially conducted in English.

12. Office Hours

Prof. Tetsuya Taga's E-mail address: taga.scr@mri.tmd.ac.jp
11:00 ~ 12:00 on every Monday (make an appointment by E-mail).

13. Note(s) to Students

None.

Clinical Anatomy

（Code：●●●● 1st ～2nd year 4units）

1. Instructors

Name	Position	Department	Contact Information
Keiichi Akita	Chief Instructor /Professor	Department of Clinical Anatomy	akita.fana@tmd.ac.jp
Akimoto Nimura	Associate Professor	Medical and Dental Sciences, Graduate School of Medical and Dental Sciences	nimura.orj@tmd.ac.jp
Masayo Harada	Assistant Professor	Department of Clinical Anatomy	harada.fana@tmd.ac.jp
Hisayo Nasu	Assistant Professor	Department of Clinical Anatomy	nasu.fana@tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Aims of the Course

Clinical Anatomy is a field of study to solve the problems from clinical medicine through formulations of human anatomical and developmental biological bases of diagnoses and surgical procedures. The course is aimed to understand the structure of the human body based on the human anatomy and acquire an ability to describe the human body structures clearly from the findings of observations.

4. Course Objectives

The course is aimed to understand the spatial arrangements of human body structures from various angles and acquire the observing ability as a medical worker and a researcher.

5. Format

Small group instruction will be mainly performed to facilitate free discussion between participants and instructors.

6. Class Detail

Lectures are aimed to understand clinical anatomy for proper diagnosis and treatment. Comparative anatomy and developmental biology are also applied for better understanding about the spatial arrangement of the organs or vessels.

Check the schedules announced at the beginning of the academic year for research progress meetings, journal clubs, lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Trying to understand the basic anatomical structures and the developmental processes of the parts of the body which each student is interested in. Trying to pick up unclarified and controversial issues on diagnoses and surgical procedures.

9. Reference Materials

Gray's Anatomy for Students, Third Edition, 2014, Elsevier, Langman's Medical Embryology, Thirteenth Edition, 2015, Wolters Kluwer Lippincott Williams & Wilkins, Principles of Development, Fourth Edition, 2011, Oxford University Press

10. Important Course Requirements

None

11. Availability in English

Lectures will be conducted in English when foreign students registered.

12. Office Hours

Contact person: Keiichi Akita. e-mail; akita.fana@tmd.ac.jp

13. Note(s) to Students

The number of students is not limited.

Developmental and Regenerative Biology

(Code: ●●●● 1st ~2nd year 4 units)

1. Instructors

Name	Position	Department	Contact Information
Hiroshi Nishina	Chief Instructor /Professor	Department of Developmental and Regenerative Biology	nishina.dbio@mri.tmd.ac.jp
Kengo Honma	Junior Associate Professor	Department of Developmental and Regenerative Biology	homma.dbio@mri.tmd.ac.jp
Erika Ishihara	Assistant Professor	Department of Developmental and Regenerative Biology	ishihara.dbio@mri.tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Aims of the Course

This course- aim to acquire the concepts and methods of cutting-edge biology and medicine.

4. Course Objectives

The objective of this course is to develop your ideas and skills that will assist your study.

5. Format

The class size will be kept small to encourage questions and discussion, and to promote interaction between the lecturer and attendees.

6. Class Detail

You will learn about mechanisms of signal transduction during “mouse and fish” development through lectures and small group discussions. Your goal is to obtain sufficient knowledge in this field to enable you to work on your own research project.

Available programs:
A “Work in Progress” seminar and a Journal Club meeting will be held jointly once a week on Thursdays between 10:00 am- 12:00 noon.

Check the schedules announced at the beginning of the academic year for journal clubs, lectures, special lectures and seminars.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading
None

9. Reference Materials
Molecular Cell Biology 7th edition by Lodish et al.

10. Important Course Requirements
None

11. Availability in English
When an international student registers this subject for credits, this course is taught in English.

12. Office Hours

Contact person: Professor Hiroshi Nishina Mon-Fri 10:00-18:00 E-mail: nishina.dbio@mri.tmd.ac.jp

13. Note(s) to Students
None

Biomechanics

(Code: ●●●● 1st~2nd year 4 units)

1. Instructors

Name	Position	Department	Contact Information
Kenji KAWASHIMA	Chief Instructor / Professor	Department of Biomechanics	kkawa.bmc@tmd.ac.jp
Takahiro Kanno	Assistant Professor	Department of Biomechanics	kanno.bmc@tmd.ac.jp
Tetsuro Miyazaki	Assistant Professor	Department of Biomechanics	tmiyazaki.bmc@tmd.ac.jp
Toshihiro Kawase	Assistant Professor	Department of Biomechanics	kawase.bmc@tmd.ac.jp

2. Classroom/Lab Lecture

Department of Biomechanics, Institute of Biomaterials and Bioengineering 1F

3. Aims of the Course

The purpose of the course is to learn basic technologies to design and develop medical devises based on biomechanics.

4. Course Objectives

Master the basic knowledge of mechanical design, robotics and control engineering.

5. Format

Lecture, Seminar, Practice and Experiment

6. Class Detail

Learn about mechanical design and control engineering for medical devices based on biomechanics. Master a basic skill to develop the devices from the researchers and engineers working on the medical devices and systems. Learn the basic control method of a surgical robot using a personal computer.

Available programs:
Seminar Monday 14:00 -16:00

Check the schedules announced at the beginning of the academic year for journal clubs, lectures, special lectures and seminars.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Recommend to have basic knowledge of mechanical and control engineering.

9. Reference Materials

Reference papers will be handled in the lecture.

10. Important Course Requirements

Welcome students interested in medical devices and robotics.

11. Availability in English

All classes are given in English.

12. Office Hours

Contact person: Kenji KAWASHIMA E-mail: kkawa.bmc@tmd.ac.jp
Monday to Friday (except holidays) 10:00-17:00

13. Note(s) to Students

Nothing in particular.

Clinical Oncology

（Code：●●●●　1st～2nd year：4units）

1. Instructors

Name	Position	Department	Contact Information
Satoshi Miyake	Chief Instructor / Professor	Department of Clinical Oncology	sm.conc@tmd.ac.jp

2. Classroom/Lab Lecture

Daigakuin Kogishitsu 3, M&D Tower 11F

3. Aims of the Course

To overview the field of clinical oncology and acquire the systematic knowledge for palliative medicine and medical oncology.

4. Course Objectives

1. To acquire the knowledge of comprehensive oncology and the skill for explain to the others.
2. To facilitate the discussion in the field of multi-disciplinary collaboration.
3. To acquire the method to improve patients' QOL.

5. Format

Class sizes are kept small to facilitate discussion and communication.

6. Class Detail

1. To develop skills for communication and team approach. (Palliative Care Team)

2. To develop skills in terms of assessment and management of various cancer symptoms.

Check the schedules announced at the beginning of the academic year for research progress meetings and journal clubs.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Specific preparation is not required.

9. Reference Materials

Oxford Textbook of Palliative Medicine

系統緩和医療学講座　身体症状のマネジメント

10. Important Course Requirements

Requirement none.

11. Availability in English

Lectures will be conducted in English.

12. Office Hours

Contact: Department of Clinical Oncology, Satoshi Miyake, E-mail: sm.conc@tmd.ac.jp
Monday to Friday, 08:30am-17:30pm

13. Note(s) to Students

It is expected that anyone who is interested in oncology as a general field participates actively.

Experiments and Thesis writing at TMDU

(Code: ●●●●, 2nd~4th year, 24 units)

1. **Instructors**
   As stated in the accompanying sheet

2. **Classroom/Lab Lecture**
   The lecture room may vary with the program or classroom event.
   Consult with your instructor about the research laboratory or research guidance room before attending the lecture.

3. **Aims of the course**
   Each student will explore a specific research topic in the specialized surgical field or in the field of medical science related to surgery on his/her own initiative. To help students write highly original and practical dissertations about results of their research based on scientific grounds, instructors at both universities will instruct them using various methods such as a videoconference system and e-mail meetings.

4. **Course objectives**
   Each student explores a specific research topic on his/her own initiative and writes a dissertation about results of the research to get the dissertation to be assessed for a degree and be evaluated at a final examination.

5. **Format**
   Classes are conducted in small groups.

6. **Course Description and Timetable**
   - Experiments and data collection
   - Data analysis
   - Evaluating the adequacy of data collection and data analysis
   - Writing a dissertation and preparing a presentation for that
   - Dissertation assessment

7. **Assessment**
   Students are graded according to the presentation of the dissertation and the assessment of it for a degree.

8. **Prerequisite Reading**
   Nothing in particular

9. **Reference Materials**
   Nothing in particular.

10. **Important Course Requirements**
    Nothing in particular.

11. Availability in English

All classes are given in English.

12. Office Hours

Please contact chief instructor and associate instructor. Problems emerging in carrying out research will be addressed by the program steering committee.

13. Note(s) to Students

Nothing in particular.

No.	Name	Position	Department	Contact
1	Keichi AKITA	Professor	Clinical Anatomy	akita.fana@tmd.ac.jp
2	Takahiro ASAKAGE	Professor	Head and Neck Surgery	tasakage.hns@tmd.ac.jp
3	Shiro IWANAGA	Professor	Environmental Parasitology	iwanaga.vip@tmd.ac.jp
4	Hiroyuki UETAKE	Professor	Specialized Surgeries	h-uetake.srg2@tmd.ac.jp
5	Kenji KAWASHIMA	Professor	Biomechanics	kkawa.bmc@tmd.ac.jp
6	Yusuke KINUGASA	Professor	Gastrointestinal Surgery	kinugasa.srg1@tmd.ac.jp
7	Tetsuya TAGA	Professor	Stem Cell Regulation	taga.scr@mri.tmd.ac.jp
8	Kazuki TAKADA	Professor	Professional Development in Health Sciences	takada.rheu@tmd.ac.jp
9	Shinji TANAKA	Professor	Molecular Oncology	tanaka.monc@tmd.ac.jp
10	Toshihiro TANAKA	Professor	Human Genetics and Disease Diversity	ttana.brc@tmd.ac.jp
11	Minoru TANABE	Professor	Hepatobiliary and Pancreatic Surgery	tana.msrg@tmd.ac.jp
12	Keiko NAKAMURA	Professor	Global Health Entrepreneurship	nakamura.ith@tmd.ac.jp
13	Hiroshi NISHINA	Professor	Developmental and Regenerative Biology	nishina.dbio@mri.tmd.ac.jp
14	Yasuhisa Fujii	Professor	Urology	y-fujii.uro@tmd.ac.jp
15	Takeo FUJIWARA	Professor	Global Health Promotion	fujiwara.hlth@tmd.ac.jp
16	Masahiko MIURA	Professor	Oral Radiation Oncology	masa.mdth@tmd.ac.jp
17	Satoshi MIYAKE	Professor	Clinical Oncology	sm.conc@tmd.ac.jp
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19	Masayuki YOSHIDA	Professor	Life Sciences and Bioethics	masa.vasc@tmd.ac.jp
20	Toshiaki ISHIKAWA	Associate Professor	Specialized Surgeries	ishi.srg2@tmd.ac.jp
21	Toshifumi KUDO	Associate Professor	Specialized Surgeries	t-kudo.srg1@tmd.ac.jp
22	Kazutaka SAITO	Associate Professor	Urology	kz-saito.uro@tmd.ac.jp
23	Masatoshi TAKAGI	Associate Professor	Pediatrics and Developmental Biology	m.takagi.ped@tmd.ac.jp
24	Masanori TOKUNAGA	Associate Professor	Gastrointestinal Surgery	kinugasa.srg1@tmd.ac.jp
25	Yasuaki NAKAJIMA	Associate Professor	Gastrointestinal Surgery	yasu.nakajima.srg1@tmd.ac.jp

26	Takeshi NAMIKI	Associate Professor	Dermatology	tnamderm@tmd.ac.jp
27	Ikuo NOBUHISA	Associate Professor	Stem Cell Regulation	nobuhisa.scr@mri.tmd.ac.jp
28	Yosuke ARIIZUMI	Junior Associate Professor	Head and Neck Surgery	ariizumi.hns@tmd.ac.jp
29	Junichiro ISHIOKA	Junior Associate Professor	Insured Medical Care Management	ishioka.uro@tmd.ac.jp
30	Hironori ISHIBASHI	Junior Associate Professor	Thoracic Surgery	hishiba.thsr@tmd.ac.jp
31	Kazuchika ONO	Junior Associate Professor	Head and Neck Surgery	ohno.hns@tmd.ac.jp
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33	Kentaro OKAMOTO	Junior Associate Professor	Specialized Surgeries	okasrg2@tmd.ac.jp
34	Kenro KAWADA	Junior Associate Professor	Gastrointestinal Surgery	kawada.srg1@tmd.ac.jp
35	Atsushi KUDO	Junior Associate Professor	Hepatobiliary and Pancreatic Surgery	kudomsrg@tmd.ac.jp
36	Morito KURATA	Junior Associate Professor	Comprehensive Pathology	kurata.pth2@tmd.ac.jp
37	Kaoruko SEINO	Junior Associate Professor	Global Health Entrepreneurship	seino.ith@tmd.ac.jp
38	Kazuma TODA	Junior Associate Professor	Radiation Therapeutics and Oncology	tdmrad@tmd.ac.jp
39	Tsuyoshi NKAGAWA	Junior Associate Professor	Specialized Surgeries	nakagawa.srg2@tmd.ac.jp
40	Daisuke BAN	Junior Associate Professor	Hepatobiliary and Pancreatic Surgery	d-ban.msrg@tmd.ac.jp
41	Kengo HONMA	Junior Associate Professor	Developmental and Regenerative Biology	homma.dbio@mri.tmd.ac.jp
42	Ayako MORITA	Junior Associate Professor	Global Health Promotion	morita.hlth@tmd.ac.jp

43	Erika ISHIHARA	Assistant Professor	Developmental and Regenerative Biology	ishihara.dbio@mri.tmd.ac.jp
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60	Soichiro YOSHIDA	Assistant Professor	Urology	s-yoshida.uro@tmd.ac.jp